Federal Subsistence Board

Fisheries Meeting Materials
January 11-13, 2005

Egan Civic and Convention Center, Anchorage Alaska

FEDERAL SUBSISTENCE BOARD PUBLIC MEETING

January 11-13, 2005
8:30 AM - 5:00 PM Daily
Egan Civic and Convention Center, Anchorage, Alaska

Meeting Agenda and Table of Contents

1. **Call to Order and Introductions**
2. **Corrections/Additions to the Agenda**
3. **Public Comment Period on Non-Agenda Items** *(This opportunity is available at the beginning of each day).*
4. **Public Comment Period on Consent-Agenda Items** *(This opportunity is available at the beginning of each day).*
5. **Public Comment Period on Marine Jurisdiction Proposed Rule** *(This opportunity is scheduled for Wednesday, January 12, 2005 at 1:00 PM).*
6. **Fisheries Resource Monitoring Plan for 2005** **1**
   a. Review of Consent Agenda items
   b. Board deliberation and action on Non-Consent Agenda items
   c. Adoption of Consent Agenda
7. **Presentation on Partners Program and Capacity Building**
8. **2005 Subparts C&D Proposals** *(Fisheries Regulations)*
   a. Review of Consent Agenda items
   b. Board deliberation and action on Non-Consent Agenda items (marked with **bold** below)
   c. Adoption of Consent Agenda

Regional Maps **169**

Yakutat Area
FP05-16 - Steelhead **183**

Southeastern Alaska Area
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FP05-10 - Salmon **356**
Bristol Bay Area
FP05-09 - Char **364**
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FP05-06 - Salmon **371**
FP05-07 - Rainbow Trout **381**
FP05-08 - Rainbow Trout **396**
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FP05-02 - Salmon **411**
FP05-03 - Salmon **422**
FP05-04 - Salmon **434**
FP05-05 - Fall Chum Salmon **462**

9. Unit 2 Deer Planning Update

10. Other Business

11. Board Discussion of Council Topics with Chairs

12. Adjourn

Note: *The meeting will be held daily from 8:30 AM to 5:00 PM, or until the Board calls a recess for the day, or completes its work. Daily updates on Board progress through the agenda can be obtained by calling 1-800-478-1456, or in Anchorage at 786-3888.*

FEDERAL SUBSISTENCE BOARD
CONSENT AGENDA ITEMS

The following proposals have been included on the consent agenda. These are proposals for which there is unanimous agreement among Federal Subsistence Regional Advisory Councils, Federal Interagency Staff Committee, and the Alaska Department of Fish and Game concerning recommendations for Board action. Anyone disputing the recommended action on a proposal may request that the Board remove the proposal from the consent agenda and place it on the regular agenda. The Board retains final authority for removal of proposals from the consent agenda. The Board will take final action on the consent agenda after deliberation and decisions on all of the proposals.

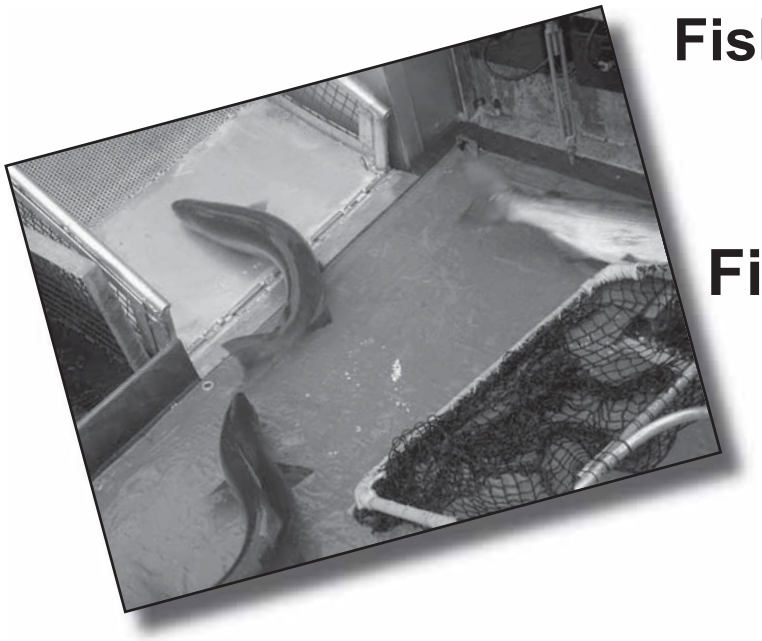
Management Area	**Proposal**	**Recommended Action**
Yakutat	FP05-16	Oppose
Southeastern Alaska	FP05-18	Support with Modification
	FP05-22	Oppose
	FP05-24	Support with Modification
	FP05-26	Support with Modification
Prince William Sound	FP05-11	Support
	FP05-12	Support with Modification
	FP05-14	Support
	FP05-15	Support
Cook Inlet	FP05-10	Oppose
Bristol Bay	FP05-09	Support with Modification
Kuskokwim	FP05-07	Support
	FP05-08	Support

FEDERAL SUBSISTENCE BOARD
NON–CONSENT AGENDA ITEMS

Procedure for considering proposals:

1) Analysis *(lead author)*
2) Summary of written public comments *(Regional Council Coordinator)*
3) Open floor to public testimony
4) Regional Council recommendation *(Chair or designee)*
5) Interagency Staff Committee recommendation *(ISC lead)*
6) Alaska Department of Fish and Game comments
7) Board discussion with Council Chairs and State Liaison
8) Federal Subsistence Board action

Management Area	**Proposal**
Southeastern Alaska	FP05-17
	FP05-19
	FP05-28
	FP05-20
	FP05-21
	FP05-23
	FP05-25
	FP05-27
	FP05-29
	FP05-30
Prince William Sound	FP05-13
Kuskokwim	FP05-06
Yukon-Northern	FP05-02
	FP05-03
	FP05-04
	FP05-05



Fisheries Information Services

2005 Draft Fisheries Resource Monitoring Plan

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2005 DRAFT FISHERIES RESOURCE MONITORING PLAN

EXECUTIVE SUMMARY

- Request for Proposals issued November, 2003 with Regional Advisory Councils Issues and Information Needs as guidelines
- After funding continuation projects in 2004, $2.1 million available for 2005 Monitoring Plan
- Fifty-nine Proposals ($4.8 million) received (Feb 2004)
- Proposals reviewed by Fisheries Information Services (FIS) Division, then Technical Review Committee (TRC) using 4 ranking factors:
  - Strategic Priority
  - Scientific Merit
  - Partnerships - Capacity Building
  - Past Performance
- 37 Proposals ($3.1 million) recommended for Investigation Plan development by TRC (March 2004)
- 31 Investigation Plans ($2.5 million) received (June 2004)
- TRC recommended 24 Projects totaling $1.9 million. Two projects did not receive consensus of the TRC and minority opinions were included with the recommendations:
  - 05-355 Nunapitchuk Freshwater Fish Studies
  - 05-651 Customary Trade of Subsistence Fish Products
- Regional Advisory Councils (RACs) supported TRC recommendations for 29 of the 31 Investigation Plans considered for 2005. For the two projects that did not receive consensus of the TRC, the RACs supported the TRC's majority opinion. The two projects where the RACs differed with the TRC included:
  - 05-306 Kuskokwim Inseason Subsistence Salmon Harvest Data Collection
  - 05-403 Lake Clark Whitefish Assessment

  Six Councils supported and four took no action for funding Inter-Regional Project 05-702 Genetic Species Markers in Whitefish.
- Public Comments were received from:
  - Kuskokwim Salmon Management Working Group

To develop the strongest regional Monitoring Plans possible, the Fisheries Information Services Division and the TRC evaluated recommendations across data types within and among Regions.

FIS anthropologists are working with researchers to develop 2006 study proposals for customary trade in southeast Alaska and freshwater fish in the Kuskokwim River drainage.

2005 Fisheries Resource Monitoring Plan

Projects on Consent Agenda

Northern

05-101 Coho Salmon Distribution and Abundance in Unalakleet River

Yukon River

05-203 Coho Salmon Genetics, Yukon River
05-208 Anvik River Sonar
05-210 Tanana River Fall Chum Salmon Abundance
05-211 Henshaw Creek Weir
05-254 Yukon River Inseason Salmon Harvest Assessment

Kuskokwim River

05-301 Whitefish PIT Tags
05-302 Inriver Abundance of Chinook Salmon
05-304 George and Takotna River Weirs
05-305 Genetic Stock ID of Chinook Salmon on the Kuskokwim
05-353 Nunivak Island Subsistence Fisheries
05-356 Kuskokwim Area Post-Season Subsistence Harvest Survey

Southwest

05-402 Lake Clark Sockeye Salmon Escapement
05-405 Perryville-Chignik Coho and Late-Run Sockeye Aerial Surveys
05-452 Non-Salmon Harvests and TEK in Togiak, Manokotak, and Twin Hills

Southcentral

05-501 Spawning Distribution and Run Timing of Copper River Sockeye Salmon
05-502 Abundance, Timing, and Distribution of Copper River Steelhead
05-553 Changes in Subsistence Salmon Harvests on Copper River

Southeast

05-601 Kook Lake Sockeye Salmon Assessment
05-603 Klawock Lake Sockeye Salmon Stock Assessment
05-604 POW Steelhead

Inter-Regional

05-702 Genetics Species Markers in Whitefish

2005 Fisheries Resource Monitoring Plan

Consent Agenda – Projects Not Recommended For Funding

Yukon River

05-252 Subsistence Fishing Schedule Impacts on Traditional Lifestyles
05-253 Village of Grayling and Anvik Inseason Salmon Harvest Monitoring

Kuskokwim River

05-303 Aniak River Sonar Upgrade
05-355 Nunapitchuk Freshwater Fish Studies

Southwest

05-406 Togiak River Chinook Salmon Escapement

Southeast

05-651 Customary Trade of Subsistence Fish Products
05-653 Changes to Subsistence Fishing Due to Fewer Large Vessels

2005 Fisheries Resource Monitoring Plan
Non-Consent Agenda Item

Study Region:	**Kuskokwim**
Project Title:	**Kuskokwim River Inseason Subsistence Salmon Harvest Data Collection Continuation**
Project Number:	**05-306**
TRC Recommendation:	**Fund Only ASL Component of Study, with Modification**
Council Recommendations:	
Western Interior Council:	**Support TRC Recommendation**
YK Delta Council:	**Fully Fund Inseason Harvest Monitoring and ASL components**

YK Delta Regional Council Comments: The Council supported the full proposal to continue both inseason harvest monitoring and age, sex, and length (ASL) data collections in the Bethel Area subsistence fishery. Council members were given a resolution (see attached) passed by the Kuskokwim Salmon Management Working Group requesting that the inseason harvest monitoring component of this project be funded. Several Council members spoke in favor of continuing the inseason harvest monitoring because of its importance to inseason subsistence management decision making. The Council supported a motion to fund the full project.

FIS Staff Analysis: Additional development of the study design for the subsistence ASL sampling program is requested. The revised IP should explain specifically how ASL information could be used to address subsistence management issues, i.e., the effect of gear size on sex ratios and age classes. Plans for adding genetic stock biology samples should also be addressed in coordination with project 05-305.

A number of questions remain about the inseason harvest monitoring component of this investigation plan. For two years the TRC has requested that investigators address: 1) how or if in-season monitoring projects should continue, 2) what is the projected endpoint for such projects, and 3) describe how inseason subsistence harvest information will be applied to management. The TRC has asked that these questions be addressed before being considered for subsequent years' funding.

Staff Committee Recommendation: Recommend supporting TRC position to fund ASL sampling only at a cost of approximately $45,000 annually. The inseason harvest monitoring component is not recommended for funding pending resolution of TRC issues outlined above. The TRC further recommends that ONC and ADFG develop a revised proposal for 2006 which addresses these questions.

Kuskokwim River Salmon Management Working Group
Fisheries Summit, September 30-October 1, 2004

RESOLUTION #04-02

TITLE: SUPPORTING CONTINUED FUNDING OF ONC IN-SEASON SUBSISTENCE SURVEY PROJECT.

WHEREAS, the Kuskokwim River Salmon Management Working Group (KRSMWG), formed in 1988, is an organization which is charged with the responsibility of managing Kuskokwim River Salmon resources that in its 16 years of existence has become an integral component of seasonal management structure; and,

WHEREAS, the In-Season subsistence harvest monitoring project conducted over the last 4 years in cooperation between Orutsararmiut Native Council (ONC) and state managers in the Bethel area has had its scope and recommended funding significantly reduced by a review committee that states concerns over "scientific rigor" of the project; and,

WHEREAS, the information gathered through this project provides area managers with scientific and local knowledge that is not cost effectively available through any other means, has never been obtained before, and will be lost for establishing further baseline data that maintains a sufficient level of scientific credibility; and,

WHEREAS, critics should work with the partners in this project to enhance the goals and intent of the significant capacity building potential that is directly associated with this project, rather than summarily dismiss or lose the TEK and scientific data from this project's proven capabilities; and,

WHEREAS, information gathered through this project is considered highly beneficial to federal and state managers in making comprehensive decisions regarding salmon harvest in the Kuskokwim drainage that comprises almost half of the subsistence salmon harvest statewide.

NOW THEREFORE BE IT RESOLVED THAT to fulfill its many associated responsibilities for subsistence management in the Kuskokwim drainage, the OSM should continue to fully fund this important project to provide for the future in-season management of Kuskokwim subsistence salmon fisheries.

BE IT FURTHER RESOLVED THAT the OSM staff of concern should work with ONC and local area management staff to address their expressed concerns of enhancing scientific rigor of the project, along with expanding its capabilities in furthering the stated agency policy of increased capacity building.

ADOPTED this 1st day of October, 2004, at the Kuskokwim River Salmon Management Working Group's Fish Summit in Bethel, Alaska, at which an established quorum of members was present.

Lamont Albertson, Co-Chair Beverly Hoffman, Co-Chair

2005 Fisheries Resource Monitoring Plan
Non-Consent Agenda Item

Study Region:	**Southwest**
Project Title:	**Distribution, Seasonal Movement, and Life History of Humpback Whitefish in the Lake Clark Watershed**
Project Number:	**05-403**
TRC Recommendation:	**Funding Recommended**
Council Recommendations:	
Bristol Bay-Alaska Peninsula:	**Funding Not Recommended**
Kodiak-Aleutians:	**No Action**

Bristol Bay- Alaska Peninsula Council Comments: The Council felt that this project was of lower priority than the need to obtain more information on Lake Clark sockeye salmon. Although no project proposal or investigation plan for a Lake Clark sockeye salmon smolt project was submitted for 2005 funding consideration, the Council felt that obtaining such information was a higher priority for 2005 than funding work on Lake Clark humpback whitefish. Additionally, some Council members felt that the total cost of the Lake Clark humpback whitefish project, $234,075 over the next three years, was too much to devote towards obtaining information on this species.

FIS Staff Analysis: Lake Clark sockeye salmon is a very important resource for Federal subsistence users, and the Monitoring Program has been responsive to the issue of declining Lake Clark sockeye salmon runs. Projects have been funded to collect information on spawning distribution and stock structure (00-042) and to monitor spawning escapement (01-095). Continuation of spawning escapement monitoring is also under consideration for 2005 funding (05-402). While smolt information may provide useful information on freshwater survival and general rearing conditions in Lake Clark, no 2005 proposal to do such work was submitted, and there seems to be no time-sensitive need for such information in 2005. However, an existing genetic mixed stock analysis project on Lake Clark sockeye salmon run timing (04-411) will be modified so that some archived smolt samples from Alaska Department or Fish and Game's Kvichak River smolt counting site can be analyzed. Results of this work will be used to develop a project for submission in 2006. In contrast, local residents have reported a decline in the number and size of humpback whitefish harvested in Lake Clark, but no information is available on movement patterns or on the age, size, and sex composition of subsistence harvests. This information is needed to assess stock status and evaluate the sustainability of harvest levels. Whitefish contribute up to 20% of the subsistence fish diet by Lake Clark and Iliamna residents, but this resource has been overlooked by management agencies since it has low commercial and recreational value. There is local support for this project (e.g. Nondalton Tribal Council, Kijik Corp., Lake Clark National Park Subsistence Resource Committee), the investigators are well qualified, participating agencies would match about half the costs needed for this project, and Lake Clark whitefish was included in the existing issues and information needs list for this region.

Staff Committee Recommendation: Funding recommended.

Table 1. Number of Investigation Plans (IPs) received for funding consideration in 2005, and number of IPs recommended for funding by the Technical Review Committee (TRC), Regional Advisory Councils (RAC), and Staff Committee (SC). Study types are stock status and trends (SST), and harvest monitoring and traditional ecological knowledge (HM-TEK).

	Number of IPs Received			TRC Recommendations			RAC Recommendations			SC Recommendations		
Geographic Region	SST	HM-TEK	Total	SST	HM-TEK	Total	SST	HM-TEK	Total	SST	HM-TEK	Total
Northern	1	0	1	1	0	1	1	0	1	1	0	1
Yukon	4	3	7	4	1	5	4	1	5	4	1	5
Kuskokwim	6	3	9	5	2	7	5 [a]	2	7	5	2	7
Southwest	4	1	5	3	1	4	2 [b]	1	3	3	1	4
Southcentral	2	1	3	2	1	3	2	1	3	2	1	3
Southeast	3	2	5	3	0	3	3	0	3	3	0	3
Inter-Regional	1	0	1	1	0	1	1 [c]	0	1	1	0	1
Total	21	10	31	19	5	24	18	5	23	19	5	24

[a] The Yukon-Kuskokwim Delta Council recommended full funding for project 05-306
[b] The Bristol Bay Council recommended funding smolt monitoring as an alternative to project 05-403.
[c] Six Councils supported and four took no action for project 05-702

Table 2. Funding guidelines, total cost of Investigation Plans (IPs) submitted to the Monitoring Program for funding consideration, and costs of IPs recommended for funding by the Technical Review Committee (TRC), Regional Advisory Councils (RAC), and Staff Committee (SC). Funding shown in thousands of dollars. Study types are stock status and trends (SST), and harvest monitoring and traditional ecological knowledge (HM-TEK).

	SST Studies					HM-TEK Studies					All Studies				
Geographic Region	Guideline	IP Cost	TRC	RAC	SC	Guideline	IP Cost	TRC	RAC	SC	Guideline	IP Cost	TRC	RAC	SC
Northern	$162	$104	$104	$104	$104	$81	$0	$0	$0	$0	$244	$104	$104	$104	$104
Yukon	$277	$335	$335	$335	$335	$139	$131	$34	$34	$34	$416	$465	$369	$369	$369
Kuskokwim	$277	$479	$381	$409 [a]	$381	$139	$186	$135	$135	$135	$416	$665	$516	$544	$516
Southwest	$143	$333	$130	$59 [b]	$130	$72	$77	$77	$77	$77	$215	$410	$207	$136	$207
Southcentral	$191	$262	$262	$262	$262	$96	$85	$85	$85	$85	$287	$346	$347	$347	$347
Southeast	$275	$371	$371	$371	$371	$138	$162	$0	$0	$0	$413	$532	$371	$371	$371
Inter-Regional	$70	$30	$30	$30 [c]	$30	$35	$0	$0	$0	$0	$105	$30	$30	$30	$30
Total	$1,393	$1,913	$1,613	$1,570	$1,613	$701	$640	$331	$331	$331	$2,094	$2,554	$1,944	$1,901	$1,944

[a] The Yukon-Kuskokwim Delta Council recommended full funding for project 05-306.
[b] The Bristol Bay Council recommended funding smolt monitoring as an alternative to project 05-403.
[c] Six Councils supported and four took no action for project 05-702.

Table 3. Funding recommendations by the Technical Review Committee (TRC); North Slope (NS), Northwest Arctic (NWA), and Seward Peninsula (SP) Regional Advisory Councils (RAC); and Staff Committee (SC) for Northern region stock status and trend studies, 2005 Fisheries Resource Monitoring Plan.

		Funding Recommendation					Requested Budget		
			RACs						
Study #	Title	TRC	NS	NWA	SP	SC	2005	2006	2007
05-101	Coho Salmon Distribution and Abundance in Unalakleet River	Yes	Yes	Yes	Yes	Yes	$103.7	$68.1	$0.0
	Total						$103.7	$68.1	$0.0
	2004 Board Guideline, by Data Type						$162.4		
	Technical Review Committee Recommendation						$103.7	$68.1	$0.0
	Regional Advisory Council Recommendation						$103.7	$68.1	$0.0
	Staff Committee Recommendation						$103.7	$68.1	$0.0

Table 4. Funding recommendations by Technical Review Committee (TRC); Yukon-Kuskokwim Delta (Y-K), Western Interior (WI), and Eastern Interior (EI) Regional Advisory Councils (RAC); and Staff Committee (SC) for Yukon region stock status and trend studies, 2005 Fisheries Resource Monitoring Plan.

		Funding Recommendation					Requested Budget		
			RACs						
Study #	Title	TRC	Y-K	WI	EI	SC	2005	2006	2007
05-203	Coho Salmon Genetics, Yukon River	Yes	Yes	Yes	Yes	Yes	$22.1	$27.8	$0.0
05-208	Anvik River Sonar	Yes	Yes	Yes	Yes	Yes	$58.6	$58.6	$58.7
05-210	Tanana River Fall Chum Salmon Abundance	Yes	Yes	Yes	Yes	Yes	$172.1	$167.1	$162.3
05-211	Henshaw Creek Weir	Yes	Yes	Yes	Yes	Yes	$82.1	$78.5	$80.6
	Total						$334.9	$332.0	$301.6
	2004 Board Guideline, by Data Type						$277.0		
	Technical Review Committee Recommendation						$334.9	$332.0	$301.6
	Regional Advisory Council Recommendation						$334.9	$332.0	$301.6
	Staff Committee Recommendation						$334.9	$332.0	$301.6

Table 5. Funding recommendations by the Technical Review Committee (TRC); Yukon-Kuskokwim Delta (Y-K), Western Interior (WI), and Eastern Interior (EI) Regional Advisory Councils (RAC); and Staff Committee (SC) for Yukon region harvest monitoring and traditional ecological knowledge studies, 2005 Fisheries Resource Monitoring Plan.

		Funding Recommendation					Requested Budget		
			RACs						
Study #	Title	TRC	Y-K	WI	EI	SC	2005	2006	2007
05-252	Subsistence Fishing Schedule Impacts on Traditional Lifestyles	No	No	No	No	No	$68.0	$0.0	$0.0
05-253	Village of Grayling and Anvik Inseason Salmon Harvest Monitoring	No	No	No	No	No	$28.5	$27.5	$25.3
05-254	Yukon River Inseason Salmon Harvest Assessment	Yes w/mod	Yes w/mod	Yes w/mod	Yes w/mod	Yes w/mod	$34.0	$30.0	$30.0
	Total						$130.5	$57.5	$55.3
	2004 Board Guideline, by Data Type						$138.5		
	Technical Review Committee Recommendation						$34.0	$30.0	$30.0
	Regional Advisory Council Recommendation						$34.0	$30.0	$30.0
	Staff Committee Recommendation						$34.0	$30.0	$30.0

Table 6. Funding recommendations by the Technical Review Committee (TRC); Yukon-Kuskokwim Delta (Y-K) and Western Interior (WI) Regional Advisory Councils (RAC); and Staff Committee (SC) for Kuskokwim region stock status and trend studies, 2005 Fisheries Resource Monitoring Plan.

		Funding Recommendation					Requested Budget		
				RACs					
Study #	Title	Comments	TRC	Y-K	WI	SC	2005	2006	2007
05-301	Whitefish PIT Tags	[a]	Yes w/mod	Yes w/mod	Yes w/mod	Yes w/mod	$40.0	$0.0	$0.0
05-302	Inriver Abundance of Chinook Salmon	[b]	Yes	Yes	Yes	Yes	$117.6	$346.2	$0.0
05-303	Aniak River Sonar Upgrade		No	No	No	No	$98.7	$0.0	$0.0
05-304	George and Takotna River Weirs		Yes	Yes	Yes	Yes	$72.0	$79.0	$89.3
05-305	Genetic Stock ID of Chinook Salmon on the Kuskokwim		Yes	Yes	Yes	Yes	$106.0	$73.2	$18.7
05-306	Kuskokwim Inseason Subsistence Salmon Harvest Data Collection		Yes [c] w/mod	Yes [d] w/mod	Yes w/mod	Yes[c] w/mod	$45.0	$45.0	$45.0
	Total						$479.3	$543.4	$153.0
	2004 Board Guideline, by Data Type						$277.0		
	Technical Review Committee Recommendation						$380.6	$543.4	$153.0
	Regional Advisory Council Recommendation [d]						$408.7	$543.4	$153.0
	Staff Committee Recommendation						$380.6	$543.4	$153.0

[a] Project 05-301 reduced in scope from $95K request.
[b] 2005 costs decrease from $346.2K to $117.6K due to redirection of funds from project 04-306 Holitna River Escapement Monitoring.
[c] TRC and SC recommend funding for ASL sampling only, reducing cost from $73.1K request.
[d] Yukon-Kuskokwim Delta Council recommends funding project 05-306 in full ($73.1K).

Table 7. Funding recommendations by Technical Review Committee (TRC); Yukon-Kuskokwim Delta (Y-K) and Western Interior (WI) Regional Advisory Councils (RAC); and Staff Committee (SC) for Kuskokwim region harvest monitoring and traditional ecological knowledge studies, 2005 Fisheries Resource Monitoring Plan.

		Funding Recommendation				Requested Budget		
			RACs					
Study #	Title	TRC	Y-K	WI	SC	2005	2006	2007
05-353	Nunivak Island Subsistence Fisheries	Yes	Yes	Yes	Yes	$61.0	$45.0	$0.0
05-355	Nunapitchuk Freshwater Fish Studies	No	No	No	No	$50.9	$50.1	$0.0
05-356	Kuskokwim Area Post-Season Subsistence Harvest Survey	Yes w/mod	Yes w/mod	Yes w/mod	Yes w/mod	$74.2	$74.2	$74.3
	Total					$186.1	$169.3	$74.3
	2004 Board Guideline, by Data Type					$138.5		
	Technical Review Committee Recommendation					$135.2	$119.2	$74.3
	Regional Advisory Council Recommendation					$135.2	$119.2	$74.3
	Staff Committee Recommendation					$135.2	$119.2	$74.3

Table 8. Funding recommendations by the Technical Review Committee (TRC); Bristol Bay-Alaska Peninsula (BB-AP) and Kodiak-Aleutians (K-A) Regional Advisory Councils (RAC); and Staff Committee (SC) for Southwest region stock status and trend studies, 2005 Fisheries Resource Monitoring Plan.

		Funding Recommendation				Requested Budget		
			RACs					
Study #	Title	TRC	BB-AP	KA	SC	2005	2006	2007
05-402	Lake Clark Sockeye Salmon Escapement	Yes	Yes	No Action	Yes	$44.0	$44.5	$45.0
05-403	Lake Clark Whitefish Assessment	Yes	No [a]	No Action	Yes	$71.0	$101.0	$62.1
05-405	Perryville-Chignik Coho and Late-Run Sockeye Aerial Surveys	Yes	Yes	No Action	Yes	$14.7	$29.4	$29.4
05-406	Togiak River Chinook Salmon Escapement Option A	No	No	No Action	No	$168.4	$124.3	$128.9
05-406	Togiak River Chinook Salmon Escapement Option B	No	No	No Action	No	$35.1	$0.0	$0.0
	Total [b]					$333.2	$299.2	$265.4
	2004 Board Guideline, by Data Type					$143.3		
	Technical Review Committee Recommendation					$129.7	$174.9	$136.5
	Regional Advisory Council Recommendation					$58.7	$73.9	$74.4
	Staff Committee Recommendation					$129.7	$174.9	$136.5

Bristol Bay - Alaska Peninsula

[a] Council felt Lake Clark whitefish was a lower priority than sockeye salmon, and would rather see these funds used for a sockeye salmon smolt project.

[b] Total funding does not include 05-406 Option B.

Table 9. Funding recommendations by the Technical Review Committee (TRC); Bristol Bay-Alaska Peninsula (BB-AK) and Kodiak-Aleutians (K-A) Regional Advisory Councils (RAC); and Staff Committee (SC) for Southwest region harvest monitoring and traditional ecological knowledge studies, 2005 Fisheries Resource Monitoring Plan.

		Funding Recommendation				Requested Budget		
			RACs					
Study #	Title	TRC	BB-AP	K-A	SC	2005	2006	2007
05-452	Non-salmon Harvests and TEK in Togiak, Manokotak, and Twin Hills	Yes	Yes	No Action	Yes	$77.2	$29.1	$0.0
	Total					$77.2	$29.1	$0.0
	2004 Board Guideline, by Data Type					$71.7		
	Technical Review Committee Recommendation					$77.2	$29.1	$0.0
	Regional Advisory Council Recommendation					$77.2	$29.1	$0.0
	Staff Committee Recommendation					$77.2	$29.1	$0.0

Table 10. Funding recommendations by the Technical Review Committee (TRC), Southcentral (SoC) Regional Advisory Council (RAC), and Staff Committee (SC) for Southcentral region stock status and trend studies, 2005 Fisheries Resource Monitoring Plan.

		Funding Recommendation			Requested Budget		
			RAC				
Study #	Title	TRC	SoC	SC	2005	2006	2007
05-501	Spawning Distribution and Run Timing of Copper River Sockeye Salmon	Yes	Yes	Yes	$225.1	$225.1	$225.1
05-502	Abundance, Timing and Distribution of Copper River Steelhead	Yes	Yes	Yes	$36.5	$36.8	$0.0
	Total				$261.6	$261.9	$225.1
	2004 Board Guideline, by Data Type				$191.0		
	Technical Review Committee Recommendation				$261.6	$261.9	$225.1
	Regional Advisory Council Recommendation				$261.6	$261.9	$225.1
	Staff Committee Recommendation				$261.6	$261.9	$225.1

Table 11. Funding recommendations by the Technical Review Committee (TRC), Southcentral (SoC) Regional Advisory Council (RAC), and Staff Committee (SC), for Southcentral region harvesting monitoring and traditional ecological knowlege studies, 2005 Fisheries Resource Monitoring Plan.

		Funding Recommendation			Requested Budget		
			RAC				
Study #	Title	TRC	SoC	SC	2005	2006	2007
05-553	Changes in Subsistence Salmon Harvests on Copper River	Yes	Yes	Yes	$84.8	$0.0	$0.0
	Total				$84.8	$0.0	$0.0
	2004 Board Guideline, by Data Type				$95.5		
	Technical Review Committee Recommendation				$84.8	$0.0	$0.0
	Regional Advisory Council Recommendation				$84.8	$0.0	$0.0
	Staff Committee Recommendation				$84.8	$0.0	$0.0

Table 12. Funding recommendations by the Technical Review Committee (TRC), Southeast (SE) Regional Advisory Council (RAC), and Staff Committee (SC) for Southeast region stock status and trend studies, 2005 Fisheries Resource Monitoring Plan.

		Funding Recommendation			Requested Budget		
			RAC				
Study #	Title	TRC	SE	SC	2005	2006	2007
05-601	Kook Lake Sockeye Salmon Assessment	Yes	Yes	Yes	$78.6	$79.6	$81.6
05-603	Klawock Lake Sockeye Salmon Stock Assessment	Yes	Yes	Yes	$164.2	$167.8	$0.0
05-604	POW Steelhead	Yes	Yes	Yes	$127.7	$136.9	$156.9
	Total				$370.5	$384.3	$238.5
	2004 Board Guideline, by Data Type				$275.4		
	Technical Review Committee Recommendation				$370.5	$384.3	$238.5
	Regional Advisory Council Recommendation				$370.5	$384.3	$238.5
	Staff Committee Recommendation				$370.5	$384.3	$238.5

Table 13. Funding recommendations by the Technical Review Committee (TRC), Southeast (SE) Regional Advisory Council (RAC), and Staff Committee (SC) for Southeast region harvest monitoring and traditional ecological knowledge region studies, 2005 Fisheries Resource Monitoring Plan.

		Funding Recommendation			Requested Budget		
			RAC				
Study #	Title	TRC	SE	SC	2005	2006	2007
05-651	Customary Trade of Subsistence Fish Products	No	No	No	$79.7	$44.9	$0.0
05-653	Changes to Subsistence Fishing Due to Fewer Large Vessels	No	No	No	$81.8	$41.6	$0.0
	Total				$161.5	$86.5	$0.0
	2004 Board Guideline, by Data Type				$137.7		
	Technical Review Committee Recommendation				$0.0	$0.0	$0.0
	Regional Advisory Council Recommendation				$0.0	$0.0	$0.0
	Staff Committee Recommendation				$0.0	$0.0	$0.0

Table 14. Funding recommendations by the Technical Review Committee (TRC); North Slope (NS), Northwest Artic (NWA), Seward Peninsula (SP), Yukon-Kuskokwim (Y-K), Western Interior (WI), Eastern Interior (EI), Bristol Bay-Alaska Peninsula (BB-AP), Kodiak-Aleutian (K-A), Southcentral (SoC), and Southeast (SE) Regional Advisory Councils (RAC); and Staff Committee (SC) for Inter-Regional stock status and trend studies 2005 Fisheries Resource Monitoring Plan.

		Funding Recommendation												Requested Budget		
			RACs													
Study #	Title	TRC	NS	NWA	SP	Y-K	WI	EI	BB-AP	K-A	SoC	SE	SC	2005	2006	2007
05-702	Genetic Species Markers in Whitefish	Yes w/mod	Yes w/mod	Yes w/mod	Yes w/mod	Yes w/mod	Yes w/mod	Yes w/mod	No Action	No Action	No Action	No Action	Yes w/mod	$30.2	$30.2	$0.0
	Total													$30.2	$30.2	$0.0
	2004 Board Guideline, by Data Type													$69.8		
	Technical Review Committee Recommendation													$30.2	$30.2	$0.0
	Regional Advisory Council Recommendatior													$30.2	$30.2	$0.0
	Staff Committee Recommendation													$30.2	$30.2	$0.0

INTRODUCTION

BACKGROUND

Since October 1, 1999 and under the authority of Title VIII of ANILCA, the Federal government assumed management responsibility for subsistence fisheries on Federal public lands in Alaska. Expanded subsistence fisheries management has imposed substantive new informational needs for the Federal system.

Section 812 of ANILCA directs the Departments of Interior and Agriculture, cooperating with the State of Alaska and other Federal agencies, to research fish and wildlife and subsistence uses on Federal public lands. The formidable challenge posed by dual management of fisheries, coupled with the informational and communication demands of real-time fisheries management, prompted creation of the Fisheries Resource Monitoring Program (Monitoring Program) within the Office of Subsistence Management (OSM). The Monitoring Program was envisioned as a collaborative inter-agency, inter-disciplinary approach to enhance existing fisheries research, and effectively communicate information needed for subsistence fisheries management on Federal public lands.

> **The mission of the Monitoring Program is to identify and provide information needed to sustain subsistence fisheries on Federal public lands, for rural Alaskans, through a multidisciplinary, collaborative program.**

A collaborative approach is utilized where five Federal agencies (Fish and Wildlife Service, Bureau of Land Management, National Park Service, Bureau of Indian Affairs, and USDA Forest Service) work with the Alaska Department of Fish and Game, Regional Advisory Councils, Alaska Native organizations, and other organizations to implement the Monitoring Program. An inter-agency Technical Review Committee (TRC) provides evaluation and technical oversight of proposals. Public review and recommendations for funding are provided through the Councils. An inter-agency Staff Committee reviews all recommendations, and attempts to reconcile any differences between staff and public recommendations. The Federal Subsistence Board (Board) approves annual monitoring plans with the benefit of both a technical recommendation by the TRC and public review by the Councils.

The purpose of this section is to present the TRC's funding recommendations for the 2005 Monitoring Plan.

PROJECT EVALUATION PROCESS

The TRC evaluates proposals, and subsequently full investigation plans, and makes recommendations for funding. The TRC is composed of representatives from each of the five Federal agencies, three representatives from Alaska Department of Fish and Game, and is chaired by the Chief of FIS. The TRC also included two Partners for Fisheries Monitoring positions (Partner). Staff from FIS provides support for the TRC.

Four factors are applied to the evaluation and selection of studies:

1. Strategic Priorities

To be considered for funding under the Monitoring Program, there must be, at a minimum, a Federal *nexus*, or interest. Proposed studies must have a direct association to a subsistence fishery, and either the subsistence fishery or fish stocks in question must occur in waters within or adjacent to Federal public lands. Studies that can establish a Federal *nexus* are then further evaluated for strategic importance within the region in question by assessing:

- Conservation Mandate – Risk to the conservation of species and populations that support subsistence fisheries and risk to conservation unit purposes.
- Allocation Priority – Risk of failure to provide a priority to subsistence uses and risk that subsistence harvest needs will not be met.
- Data Gaps – Amount of information available to support subsistence management. A higher priority is given where a lack of information exists.
- Role of Resource – Importance of a species to a subsistence harvest (e.g. number of subsistence users affected, quantity of subsistence harvest), and qualitative significance (e.g. cultural value, unique seasonal role).
- Local Concern – Level of user concern over subsistence harvests (e.g. allocation, competing uses, changes in fish size).

2. Technical-Scientific Merit

Technical quality of the study design must meet accepted standards for information collection, compilation, analysis, and reporting. Studies must have clear objectives, appropriate sampling design, correct analytical procedures, and specified reporting.

3. Past Performance-Administrative Expertise

Investigators and their organizations must have demonstrated technical and administrative expertise to complete prior studies, or have co-investigators or appropriate partnerships with other organizations to meet all requirements of the study. Studies must not duplicate existing projects.

4. Partnership-Capacity Building

Studies must include appropriate partners and contribute to the capacities of rural organizations, local communities, and residents to participate in fisheries resource management. Investigators must have completed appropriate consultations about their study with local villages and communities in the area where the study is to be conducted. Investigators and their organizations should be able to demonstrate the ability to maintain effective local relationships and a commitment to capacity building.

Policy and Funding Guidelines

Several policies have been developed to aid in implementing funding.

- A minimum of 60% of the Monitoring Program funding is dedicated to non-Federal sources.
- Activities not eligible for funding under the Monitoring Program include: a) habitat protection, restoration, and enhancement; b) hatchery propagation, restoration, enhancement, and supplementation; and c) contaminant assessment, evaluation, and monitoring. These activities would most appropriately be addressed by the land management agencies.
- Proposals may be funded for up to three years duration.

Finances and Guideline Model for Funding

The Monitoring Program was first implemented in 2000, with an initial investment of $5 million. Since 2001, a total of $6.25 million is annually allocated for the Monitoring Program. The Department of Interior, through the U.S. Fish and Wildlife Service, annually provides $4.25 million. The Department of Agriculture, through the USDA Forest Service, annually provides $2 million. On an annual basis, this budget funds both continuation of existing studies (year-2 or 3 of multi-year projects), and new study starts. Budget guidelines were established by geographic region and data type (**Table 1**). Proposals are solicited according to the following two data types.

1. Stock Status and Trends Studies (SST).

Table 1. Current Board guidelines for funding by region for the 2005 Monitoring Program.

Region	Values in 1,000's					
	Dept of the Interior		Dept of Agriculture		Total	
	%	$	%	$	%	$
Northern	17.0%	$244			11.6%	$244
Yukon River	29.0%	$416			19.8%	$416
Kuskokwim River	29.0%	$416			19.8%	$416
Southwest	15.0%	$215			10.3%	$215
Southcentral	5.0%	$ 72	32.5%	$215	13.7%	$286
Southeast Alaska	0.0%	$ 0	62.5%	$413	19.7%	$413
Inter-regional	5.0%	$ 72	5.0%	$ 33	5.0%	$105
TOTALS	100.0%	**$1,433**	100.0%	**$661**	100.0%	**$2,094**

These projects address abundance, composition, timing, behavior, or status of fish populations that sustain subsistence fisheries with nexus to Federal public lands. The budget guideline for this category is two-thirds of available funding.

2. Harvest Monitoring and Traditional Ecological Knowledge (HM-TEK).

   These projects address assessment of subsistence fisheries including quantification of harvest and effort, and description and assessment of fishing and use patterns. The budget guideline for this category is one-third of available funding.

2005 Fisheries Resource Monitoring Plan

For 2005, a total of 31 investigation plans are under consideration for funding (**Table 2**). Twenty-one are in the SST category and 10 in the HM-TEK category. The TRC recommends funding 24 of these projects.

Table 2. Number of Investigation Plans received for funding consideration in 2005, and number of Investigation Plans recommended for funding by the Technical Review Committee (TRC). Study types are stock status and trends (SST), and harvest monitoring and traditional ecological knowledge (HM-TEK).

Geographic Region	IPs			TRC		
	SST	HM-TEK	Total	SST	HM-TEK	Total
Northern	1	0	1	1	0	1
Yukon	4	3	7	4	1	5
Kuskokwim	6	3	9	5	2	7
Southwest	4	1	5	3	1	4
Southcentral	2	1	3	2	1	3
Southeast	3	2	5	3	0	3
Inter-Regional	1	0	1	1	0	1
Total	21	10	31	19	5	24

The total proposed cost of these projects is $2,509,000; or approximately $400,000 in excess of available funds (**Table 3**). In total, the TRC funding recommendation is $1,935,000.

Table 3. Funding guidelines, total cost of Investigation Plans submitted to the Monitoring Program for funding consideraiton, and costs of Investigation Plans recommended for funding by the Technical Review Committee (TRC). Funding shown in thousands of dollars. Study types are stock status and trends (SST), and harvest monitoring and traditional ecological knowledge (HM-TEK).

Geographic Region	**SST**			**HM-TEK**			**Total**		
	Guideline	**Total**	**TRC**	**Guideline**	**Total**	**TRC**	**Guideline**	**Total**	**TRC**
Northern	$162	$ 95	$ 95	$ 81	$ 0	$ 0	$244	$ 95	$ 95
Yukon	$277	$335	$335	$139	$131	$ 34	$416	$465	$369
Kuskokwim	$277	$479	$381	$139	$186	$135	$416	$665	$516
Southwest	$143	$298	$130	$ 72	$ 77	$ 77	$215	$375	$207
Southcentral	$191	$262	$262	$ 96	$ 85	$ 85	$287	$346	$347
Southeast	$275	$371	$371	$138	$162	$ 0	$413	$532	$371
Inter-Regional	$ 70	$ 30	$ 30	$ 35	$ 0	$ 0	$105	$ 30	$ 30
Total	**$1,393**	**$1,869**	**$1,604**	**$701**	**$640**	**$331**	**$2,094**	**$2,509**	**$1,935**

As recommended by the TRC, the 2005 Monitoring Program would provide funding as follows: State agencies (55%), Federal agencies (10%), Alaska Native Organizations (31%), and other non-government organizations (4%) (**Figure 1**).

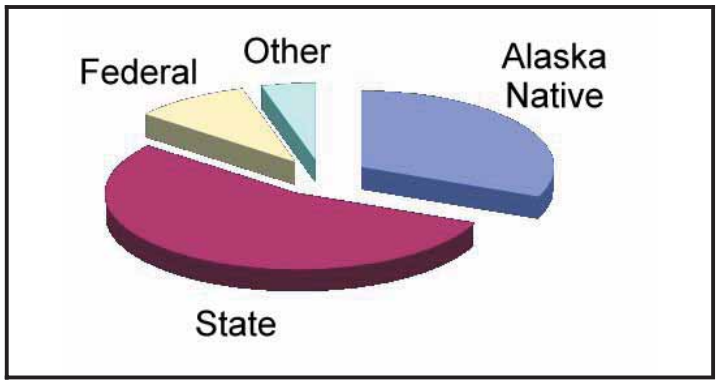

Figure 1. Percent 2005 funding distributed to Alaska Native, Federal, State and other organizations.

Recommendations by the TRC represent the Draft Fisheries Resource Monitoring Plan for 2005, and we look forward to gaining input from the Councils and public.

How to Provide Your Comments

We invite your review and comments on the draft Fisheries Resource Monitoring Plan for 2005. Regional Advisory Councils will have an opportunity to review the draft Monitoring Plan during Council meetings in the fall of 2004.

We welcome your comments by November 1, 2004. These will be compiled along with Council comments and will be presented to the Federal Subsistence Board when it meets in January 2005. Written comments may be submitted to:

USFWS Office of Subsistence Management
Attn: Kathy Orzechowski
3601 C Street, Suite 1030
Anchorage, AK 99503
Telephone: 1-800-478-1456 Fax: 907-786-3612
e-mail: kathleen_orzechowski@fws.gov

2005 DRAFT FISHERIES RESOURCE MONITORING PLAN NORTHERN REGION OVERVIEW

ISSUES AND INFORMATION NEEDS

Original guidance for the Fisheries Resource Monitoring Program (Monitoring Program) was provided by the Federal Subsistence Board and outlined in the *Operational Strategy for Information Management*[1]. Since that time, the three northern Regional Advisory Councils (Councils), the Seward Peninsula, Northwest Arctic, and North Slope Councils, have identified important issues and information needs for their regions, with review and update on an annual basis. A list of these issues and information needs for each region was included in the 2004 document prepared for the 2005 request for project proposals[2]. The Seward Peninsula and Northwest Arctic Councils have identified salmon and char fisheries as being the most important fisheries for their region, while char, whitefish, and Arctic grayling fisheries are of most importance to the North Slope Council.

To ensure that the Monitoring Program addresses the highest priority information needs for Federal subsistence fisheries management, the Office of Subsistence Management began a strategic planning process this year to build on the work done by the Councils. Facilitated workshops for the Southcentral (Copper River and Prince William Sound) and Southwest (Bristol Bay-Chignik) regions were held in April and May with representatives of Federal and State agencies, academia, Alaska Native and rural organizations, and affected Councils. Participants at each workshop identified fisheries units for their region; developed goals, objectives, and information needs for each fishery unit; and began the prioritization process for fishery units and goals, objectives and information needs. This fall, follow up workshops will be held for each of the two regions to complete the prioritization process and identify knowledge gaps for each information need. Based on workshop results, prioritized information needs lists will be developed and used to focus the Call for Proposals for the Monitoring Program. Strategic planning workshops will be held for each of the seven geographic regions, and the entire Planning process is anticipated to take at least four years.

Projects Currently Funded Under the Fisheries Resource Monitoring Program

A total of 22 projects have been funded in Northern Region since 2000, and eight projects approved as part of the 2003 and 2004 Monitoring Plans are scheduled to receive funding in 2005 (**Table 1**). Five of these ongoing projects address Dolly Varden and whitefish on the North Slope (03-012 and 04-103) and in the Northwest Arctic (04-101, 04-102, and 04-109), one addresses salmon on the Seward Peninsula (04-105), and two address subsistence use of fishes in Seward Peninsula (04-151) and Northwest Arctic (04-157) communities. Specifically, these eight projects are providing information on:

[1] Krueger, C., Brelsford, T., Casipit, C., Harper, K., Hildebrand, I., Rost, P., Thompson, K., and Jones, L. 1999. *Federal Subsistence Fisheries Management: Operational Strategy for Information Management. Report to the Federal Subsistence Staff Committee by the Sub-Committee for the Development of a Blueprint for Interagency Functions, Roles, and Responsibilities.* 122 p.

[2] Office of Subsistence Management. 2004. *Issues and Information Needs, Federal Subsistence Fisheries, 2005 Fisheries Resource Monitoring Program. 14 p*

Table 1. Summary of projects funded under the Subsistence Fisheries Resource Monitoring Program in the Northern region, 2000-2006. Abbreviations used for data types were: SST=stock status and trends, and HM-TEK=harvest monitoring and traditional ecological knowledge. Abbreviations used for investigators were: ADF&G=Alaska Department of Fish and Game, AJ=Anore Jones, AKP=City of Anaktuvuk Pass, KI=Kawarek Inc., KIC=Kaktovik Inupiat Corp., MQ=Maniilaq, NPS=National Park Service, NSB=North Slope Borough, SR=Sheppard Research, STB=Stebbins IRA, and USFWS=U.S. Fish and Wildlife Service.

Project Number	Data Type	Project Title	Investigators	Budget ($000s) 2000	2001	2002	2003	2004	2005	2006
		North Slope								
00-002	SST	Eastern North Slope Dolly Varden Genetic Stock Identification and Stock Assessment	ADF&G, USFWS	$41.4						
01-113	SST	Eastern North Slope Dolly Varden Genetic Stock Identification and Stock Assessment	ADF&G, USFWS		$253.9	$462.6	$35.0			
01-101	HM-TEK	Eastern North Slope (Kaktovik) Subsistence Fish Harvest Assessment	ADF&G, KIC		$134.0					
02-050	HM-TEK	North Slope (Anaktuvuk Pass) Subsistence Fish Harvest Assessment	ADF&G, NSB, AKP			$67.3	$63.6	$11.9		
03-012	SST	Stock Status and Trends of Arctic Cisco and Dolly Varden in Lagoons Adjacent to Kaktovik	USFWS				$62.3	$52.5	$52.2	
04-103	SST	North Slope Dolly Varden Sonar Feasibility	USFWS					$53.0	$182.6	$108.3
		Subtotal		$41.4	$387.9	$529.9	$160.9	$117.4	$234.8	$108.3
		Northwest Arctic								
00-001	SST	Northwestern Alaska Char Stock Identification	ADF&G, USFWS	$50.6	$39.0					
00-020	HM-TEK	Kotzebue Winter Subsistence Sheefish Harvest	ADF&G	$68.7						
01-136	SST	Northwestern Alaska Dolly Varden and Arctic Char Genetics	ADF&G, USFWS		$115.0	$86.0				
01-137	SST	Northwestern Alaska Dolly Varden Spawning Stock Assessment	ADF&G		$218.7	$341.1				
02-023	HM-TEK	Qaluich Nigingnaqtuat: Fish That We Eat	AJ			$48.0				
02-040	HM-TEK	Traditional Knowledge of Whitefish in Kotzebue Sound	ADF&G, MQ			$66.0	$38.1			
03-016	HM-TEK	Harvest Identification during Spring and Fall Subsistence Fisheries in Selawik River Drainage	USFWS				$43.9			
04-101	SST	Selawik Refuge Inconnu Spawning Abundance	USFWS					$224.7	$207.3	
04-102	SST	Selawik Refuge Whitefish Migration and Habitat Use	USFWS					$99.0	$93.0	$30.5
04-109	SST	Wulik River Dolly Varden Wintering Stocks	USFWS					$54.4	$35.4	$25.5
04-157	HM-TEK	Exploring Approaches to Sustainable Fisheries Harvest Assesment in Northwest Arctic	ADF&G, MQ					$37.9	$42.3	$48.4
		Subtotal		$119.3	$372.7	$541.1	$82.0	$416.0	$378.0	$104.4
		Seward Peninsula								
01-224	HM-TEK	Nome Sub-district Subsistence Salmon Survey	ADF&G, KI		$35.0	$35.0				
02-020	SST	Pitmiktalik River Salmon Counting Sites Surveys (Phase I), and Enumeration (Phase II)	USFWS, NPS, STB, KI			$18.6	$97.4			
04-105	SST	Pikmiktalik River Chum and Coho Salmon Enumeration and Sampling	KI					$116.5	$112.6	
04-151	HM-TEK	Customary Trade of Fish on Seward Peninsula Area	ADF&G, KI					$83.0	$95.1	$59.0
04-153	HM-TEK	Pre-commercial Subsistence Fisheries Baseline Data for Norton Sound	SR					$48.5		
		Subtotal		$0.0	$35.0	$53.6	$97.4	$248.0	$207.7	$59.0
		Total Northern Region Monitoring Program		$160.7	$795.6	$1,124.6	$340.3	$781.4	$820.5	$271.7

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- Relative abundance and size of Arctic cisco and Dolly Varden in Kaktovik and Jago lagoons using fyke nets (project 03-012);
- Abundance of inconnu spawning in Selawik River using mark-recapture methods (project 04-101);
- Seasonal migrations and habitat use by humpback and broad whitefish in the Selawik River using radio telemetry (project 04-102);
- Using Dual Frequency Identification Sonar to estimate Dolly Varden abundance in the Hulahula River (project 04-103);
- Abundance of chum and coho salmon spawning in Pikmiktalik River based on tower counts (project 04-105);
- Stock composition of wintering Dolly Varden in Wulik River based on mixed stock genetic analysis (project 04-109);
- Barter and customary trade of fishes in Seward Peninsula communities (project 04-151);
- Developing a long term plan for collecting fisheries harvest data in the Northwest Arctic (project 04-157).

Projects Forwarded for Investigation Plan Development

Only one proposal, a Norton Sound stock status and trends project, was submitted for the Northern region. The Technical Review Committee forwarded this proposal for investigation plan development (**Map 1**).

Investigators responded to Technical Review Committee proposal review comments in developing their investigation plan. A detailed budget submitted with the investigation plan provided information on requested funding that would be provided to Alaska Native, State, Federal, and other organizations (**Table 2**). The budget also identified funds that would be used to hire local residents, as well as the amount of matching funds that would be contributed by investigating agencies and organizations (**Table 3**).

The investigation plan was reviewed according to four fundamental evaluation criteria:

- Strategic importance
- Technical and scientific merit
- Past performance and administrative expertise
- Partnership and capacity building

Map 1. 2005 Northern Investigation Plans Stock Status Trends

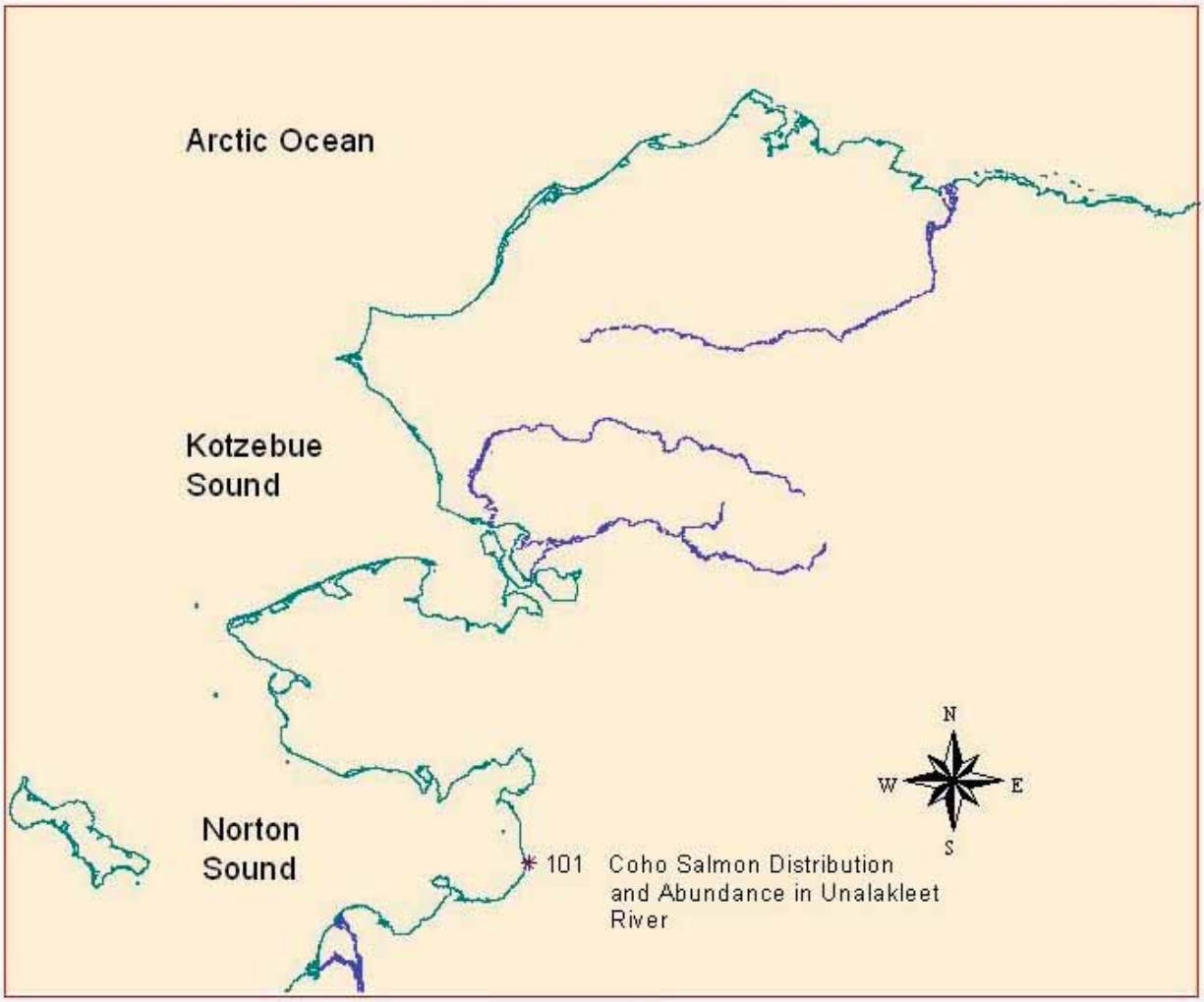

Table 2. Northern region project costs, by organization (Alaska Native, State, Federal, other), for investigation plans submitted to the Fisheries Resource Monitoring Program for funding consideration in 2005.

Project Number	Title	Project Costs ($000s)			
		Alaska Native	State	Federal	Other
	Stock Status and Trends Projects				
05-101	Coho Salmon Distribution and Abundance in Unalakleet River	$14.0	$80.6		

Table 3. Northern region local hire and matching funds for investigation plans submitted to the Fisheries Resource Monitoring Program for funding consideration in 2005. Abbreviation used for the lead organization was: ADF&G=Alaska Department of Fish and Game.

Project Number	Lead Organization	Title	Funding ($000s)	
			Local Hire	Matching
		Stock Status and Trends Projects		
05-101	ADF&G	Coho Salmon Distribution and Abundance in Unalakleet River	$14.0	$89.0

Evaluation of strategic importance and the need for information was based on the Councils' identified issues and needs as well as information provided by managers and stakeholders.

Available Funds

Federal Subsistence Board guidelines direct initial distribution of funds among regions and data types. For 2005, $243,600 is available for funding new projects in the Northern region. Two thirds of this ($162,400) is available for stock status and trends projects, and one-third ($81,200) is available for harvest monitoring and traditional ecological knowledge projects.

It is important to note that no harvest monitoring and traditional ecological knowledge projects were submitted for funding consideration in 2005. Therefore, the $81,200 available for this region and data type can be used to fund other Monitoring Program projects.

Recommendations for Funding

The Technical Review Committee forwarded the one proposal submitted for investigation plan development, and recommended that it be funded in 2005 (Table 4; also see Executive Summary):

05-101 Coho salmon distribution and abundance in Unalakleet River $103,700

This project would use radio telemetry to document coho salmon spawning areas and estimate proportions of the total escapement spawning in various sections of the Unalakleet River. Additionally, an estimate of total coho salmon escapement would be provided by proportionally expanding the North River tower count. Commercial and subsistence harvest trends suggest that the Unalakleet River coho run has been declining in abundance. This project is strategically important, and investigators are qualified to conduct this work.

Recommendations for Funding – Summary

At the direction of the Federal Subsistence Board, Monitoring Program funds are allocated by region and information type each year. The intent of establishing these budget guidelines is to develop a balanced program that addresses the full array of information needed for Federal subsistence fisheries management and regulatory decisions throughout Alaska. Actual distribution of funds each year may differ from guideline amounts depending upon the number and quality of projects submitted as well as changing management needs. For 2005, only one project proposal was submitted and advanced for development of an investigation plan. The funding request of $94,600 for this stock status and trends project was $67,800 less than the available target amount of $162,400 (**Table 4**). An additional $81,200 was available for harvest monitoring and traditional ecological knowledge projects, but no project proposals were submitted for this information type. Eight Northern region projects initially funded in 2003 and 2004 within this region are continuing in 2005 and will receive $819,500.

Table 4. Northern Region stock status and trends investigation plans submitted to the Fisheries Resource Monitoring Program for funding consideration and Technical Review Committee (TRC) funding recommendations, 2005.

Project Number	Title	Recommendation TRC	Requested Budget ($000s 2005	2006	2007
05-101	Coho Salmon Distribution and Abundance in Unalakleet River	Yes	$103.7	$68.1	
	Total		$103.7	$68.1	
	Funding Guideline		$162.4		
	TRC Recommendation		$103.7	$68.1	

Recommended for Funding

05-101
Estimation of Coho Salmon Abundance and Spawning Distribution in the Unalakleet River

Geographic Area: Northern Alaska

Information Type: Stock Status and Trends

Principal Investigator: Phil Joy and Audra Brase
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Co-Investigator: Mike Scott, Bureau of Land Management
Meryl Towarak, Native Village of Unalakleet

Cost:	2005	2006	2007
	$103,665	$68,055	$ 0

Issue

The Unalakleet River supports the largest population of coho salmon *Oncorhynchus kisutch* in Norton Sound. This population is harvested by subsistence, commercial and recreational users. Little is known about coho salmon distribution in the Unalakleet River drainage. A counting tower is operated on North River, but coho salmon estimates from North River may not be an accurate index of total Unalakleet River escapement. Aerial surveys to count coho salmon in Unalakleet River are often ineffective due to poor weather conditions.

Objectives

1. Estimate the proportions of the total coho salmon escapement migrating up the mainstem Unalakleet, North, Chiroskey, Old Woman, North Fork Unalakleet rivers, and into all waters designated Federal Wild and Scenic River;
2. Estimate the abundance of coho salmon escaping into the Unalakleet River drainage by proportional expansion of the North River tower count estimate;
3. Estimate the abundance of coho salmon migrating through the Federal Wild and Scenic River portion of the Unalakleet River;
4. Estimate the age, sex, and length composition of the coho salmon escapement into the Unalakleet and North rivers; and
5. Document the locations of coho salmon spawning areas throughout the Unalakleet River drainage, including the Federal Wild and Scenic River portion of the river.

Methods

Two-hundred radio tags would be fitted to individual coho salmon captured using set and drift gillnets at a site approximately 5 km upstream from the mouth of the Unalakleet River. Tags would be deployed in proportion to coho salmon abundance throughout the run, from mid-July through September. Coho salmon fitted with radio tags would also be marked with an external "spaghetti" tag so they can be easily identified if recaptured. Migrating coho salmon fitted with radio tags would be tracked using four remote tracking stations: one located below the tagging site, one between the North and Chirosky rivers on the mainstem of the Unalakleet River, one at the North River counting tower site, and one above the mouth of the Chiroskey River (the boundary of the Federal Wild and Scenic River portion of the Unalakleet River). Aerial tracking would be used to determine spawning locations of all radio-tagged coho salmon.

Products

Annual project findings would be documented in the Alaska Department of Fish and Game's Fisheries Data Series. Reports would be distributed to fisheries managers, researchers, local community groups and other interested parties, and would be posted on the Department of Fish and Game web site.

Experience of Investigators

The Alaska Department of Fish and Game, Sport Fish Division has a well developed process of fisheries research planning, execution, and reporting. Phil Joy, the principal investigator, is a fisheries research biologist with a MS degree in Wildlife Biology from University Alaska Fairbanks. Audra Brase, a salmon research supervisor, has a MS degree in Fisheries from University Alaska Fairbanks and has worked with rural Alaska fisheries management and research issues for over seven years.

Partnerships/Collaboration

This project would be performed in cooperation with Bureau of Land and Management, Alaska Department of Fish and Game's Commercial Fisheries Division, and the Village of Unalakleet. The Bureau of Land Management would provide $35,000 each year to purchase radio tags. This project would promote interactions and develop working relationships between stakeholders and a primary management agency. Rural residents would be introduced to potential fisheries careers by working as technicians and hosting them as high school and college interns on the project.

Recommendation: Fund

Justification

Unalakleet River salmon distribution, abundance, and life history has been identified as an issue and information need by the Regional Advisory Council for this area. The coho salmon run to this river supports the largest salmon subsistence fishery within Norton Sound, but the run appears to have declined in abundance over the last several years since both subsistence and commercial harvests have declined. This project would use radio telemetry to provide information on spawning sites and, based on the proportion of tagged coho salmon passing the North River tower site, an estimate of total spawning escapement. Investigating agencies would provide about half of the funding needed to conduct this project. There is strong community support for conducting this project, and Unalakleet IRA operates the North River tower with Kawerak Inc.

2005 DRAFT FISHERIES RESOURCE MONITORING PLAN YUKON RIVER REGION OVERVIEW

ISSUES AND INFORMATION NEEDS

Original guidance for the Fisheries Resource Monitoring Program (Monitoring Program) was provided by the Federal Subsistence Board and outlined in the *Operational Strategy for Information Management*[1]. Since that time, the three Yukon River Regional Advisory Councils (Councils) -- the Yukon-Kuskokwim Delta, Western Interior, and Eastern Interior -- have identified many issues and information needs for the region. In preparation for 2003 and 2004 projects, the information and issues were reviewed and revised by the Councils with input from subsistence users, the public, Alaska Native organizations, Alaska Department of Fish and Game (ADF&G), U.S. Fish and Wildlife Service (USFWS), and other agencies. A list of these issues and information needs for each region was included in the 2005 request for project proposals[2]. The three Councils generally identified Chinook and chum salmon as the highest priority species, but non-salmon species and collection and analysis of traditional knowledge have also been identified as important information needs. For the Yukon River Region, a concise summary of these issues include:

Stock Status and Trends

- Distribution, Abundance and Life History of Fish Species
- Fisheries Monitoring
- Coastal Ecology

*S*ubsistence Harvest Monitoring

- Subsistence Harvest Patterns
- Harvest Monitoring Design

Traditional Ecological Knowledge

- Long Term Trends and Sources of Variation
- Fish Life History
- Subsistence Use and Practices

To ensure that the Monitoring Program addresses the highest priority information needs for Federal subsistence fisheries management, the Office of Subsistence Management (OSM) began a strategic planning process this year to build on the work done by the Councils. Facilitated

[1] Krueger, C., Brelsford, T., Casipit, C., Harper, K., Hildebrand, I., Rost, P., Thompson, K., and Jones, L. 1999. *Federal Subsistence Fisheries Management: Operational Strategy for Information Management. Report to the Federal Subsistence Staff Committee by the Sub-Committee for the Development of a Blueprint for Interagency Functions, Roles, and Responsibilities*. 122 p.

[2] Office of Subsistence Management. 2004. *Issues and Information Needs, Federal Subsistence Fisheries, 2005 Fisheries Resource Monitoring Program*. 14 p.

workshops for the Southcentral (Copper River and Prince William Sound) and Southwest (Bristol Bay-Chignik) regions were held in April and May with representatives of Federal and State agencies, Alaska Native and rural organizations, the affected Councils and academia. Participants at each workshop identified fisheries units for their region; developed goals, objectives, and information needs for each fishery unit; and began the prioritization process for fishery units and goals, objectives and information needs. This fall, follow up workshops will be held for each of the two regions to complete the prioritization process and identify knowledge gaps for each information need. Based on workshop results, prioritized information needs lists will be developed and used to focus the Call for Proposals for the Monitoring Program. Strategic planning workshops will be held for each of the seven geographic regions, and the entire planning process is anticipated to take at least four years.

Projects Currently Funded under the Fisheries Resource Monitoring Program

A total of 62 projects have been funded in the Yukon River Region since the inception of the Monitoring Program in 2000 (**Table 1**). The projects are a mixture of Stock Status and Trends (SST) and Harvest Monitoring and traditional ecological knowledge (HM/TEK). Most of the projects have been directed at salmon, although projects addressing subsistence concerns for resident fish species such as whitefish and northern pike have also been funded. Fifteen projects are funded in the Yukon River Region for 2005; these include eight SST projects and seven HM/TEK projects. All were approved as part of the 2004 Monitoring Plan, and most address Yukon River salmon. Of the eight SST projects, three (04-206, 04-208 and 04-209) provide assessment of select Chinook and summer chum salmon spawning escapements. Project 04-231 continues support for the mainstem Chinook telemetry project. Three projects directly assess fall chum salmon in the Yukon River. At the mouth of the Yukon River, project 04-229, supports a fall chum salmon drift test fishery. Project 04-228, is using genetics to provide in-season mixed stock analysis of fall chum salmon at Pilot Station. In the middle river, project 04-217 provides a weekly mainstem abundance estimate of fall chum salmon passage at Rampart Rapids. Project 04-234 supports the collection of Age-Sex-Length (ASL) information from the subsistence harvest in Kaltag.

Of the seven HM/TEK projects, four address various aspects of subsistence salmon monitoring. Project 04-256 supports a community driven subsistence salmon monitoring on the Tanana River. Project 04-263 supports the weekly Yukon River Drainage Fisheries Association teleconference calls to assist with in-season management of Yukon River salmon, and project 04-251 supports the development and operation of a TEK science camp for youth in the Yukon Flats region. Project 04-255 supports the collection and analysis of TEK of salmon in the upper Yukon River Drainage. Project 04-265 addresses customary trade of subsistence harvested fish, although the primary focus is on customary trade of salmon. The two remaining projects address whitefish; project 04-253 supports the collection and analysis of TEK on whitefish in the Upper Tanana area, and project 04-269 combines TEK with western science to better understand whitefish in the Kanuti National Wildlife Refuge.

Projects Forwarded for Investigation Plans

The Technical Review Committee (TRC) forwarded ten (10) projects for Investigation Plan (IP) development, including five (5) SST projects and five (5) HM/TEK projects. Investigation

Table 1. Summary of projects funded under the Fisheries Resource Monitoring Program in the Yukon River by subsistence fishery, 2000 - 2006. Abbreviations used for investigators were: ADF&G=Alaska Department of Fish and Game, AVCP=Association of Village Council Presidents, AV= Arctic Village, BF=Bill Fliris, BLM=Bureau of Land Management, BSFA=Bering Sea Fisherman's Association, CATG=Council of Athabascan Tribal Governments, COK=City of Kaltag, DFO=Department of Fisheries and Oceans, EMV= Emmonak Village Council, NPS=National Park Service, NVE=Native Village of Eagle, NVHB= Native Village of Hooper Bay, NVV=Native Village of Venetie, RN=Research North, SVNRO= Stevens Village Natural Resource Office, SZ=Stan Zuray, UAF=University of Alaska Fairbanks, TCC=Tanana Chiefs Conference, TTC=Tanana Tribal Council, USFWS=U.S.Fish and Wildlife Service, USGS=U.S.Geological Survey, UW=University of Washington, YRDFA=Yukon River Drainage Fisheries Association.

Project Number	Data Type	Project Title	Investigators	Budget ($000s) 2000	2001	2002	2003	2004	2005	2006
		Yukon River Salmon Projects								
00-003	SST	Effects of Ichthyophonus on Chinook Salmon	UW	$83.3						
00-005	SST	Tanana Upper Kantishna River fish wheel	NPS	$11.5	$11.5					
00-018	SST	Pilot Station sonar upgrade	ADF&G	$148.9	$162.9					
00-022	HM-TEK	Hooper Bay test fishing	ADF&G, NVHB	$30.0	$27.4	$31.5	$26.3			
00-024	SST	Pilot Station Sonar Technician Support	AVCP	$16.4						
00-025	SST	Henshaw Creek salmon weir	USFWS	$60.0	$60.0	$60.0	$73.9			
00-026	HM-TEK	TEK salmon and other fish in Circle & Eagle	NVE	$30.0						
01-014	HM-TEK	Yukon River salmon management teleconferences	YRDFA		$10.5	$5.0	$5.0			
01-015	HM-TEK	Yukon River salmon TEK	YRDFA		$52.5					
01-018	SST	Pilot Station Sonar Technician Support	AVCP		$20.4					
01-026	SST	East Fork Andreafski River weir	BSFA		$31.1	$68.4				
01-029	SST	Nulato River salmon weir	BSFA		$21.2	$31.4	$31.4			
01-032	SST	Rampart Rapids tagging study	USFWS		$100.0	$100.0	$100.0			
01-038	SST	Kateel River salmon weir	USFWS		$125.2	$59.7	$24.5			
01-048	SST	Innoko River drainage weir survey	USFWS		$5.9					
01-050	SST	Kaltag Chinook salmon ASL sampling	COK		$1.2					
01-058	SST	E. Fork Andreafsky weir panel replacement	USFWS		$35.0					
01-122	SST	Lower Yukon River salmon drift test fishing	ADF&G, EMV		$133.7	$186.8	$32.6			
01-177	SST	Rampart rapids extension	USFWS		$210.8	$169.6	$172.9			
01-197	SST	Rampart-Rapids summer CPUE video	SZ		$36.2	$14.1	$14.1			
01-199	HM-TEK	Tanana fisheries conservation outreach	TTC		$9.2	$9.2	$9.2			
01-200	SST	Effects of Ichthyophonus on Yukon River Chinook	USGS		$89.1	$88.4				
01-211	HM-TEK	Upper Yukon, Porcupine, & Black River salmon TEK	CATG		$68.9					
02-009	SST	Pilot Station sonar technician support	AVCP			$20.0				
02-011	SST	Rampart Rapids fall chum handling/mortality	USFWS			$45.0				
02-097	SST	Sex-ratios of juvenile & adult Chinook, Kuskokwim & Yukon Rivers	USFWS			$13.6	$12.0			
02-121	SST	Yukon River Chinook genetics	USFWS, ADF&G, DFO			$173.2	$228.2	$160.0		
02-122	HM-TEK	Yukon River Chinook & chum in-season subsistence	USFWS			$12.2				
03-009	SST	Tozitna River weir	BLM				$27.0			
03-013	SST	Gisasa River weir	USFWS				$70.0			
03-015	HM-TEK	Phenotypic characterization of Chinook subsistence	YRDFA, USFWS				$18.5			
03-034	SST	E. Fork Andreafsky River weir	USFWS				$53.3			
03-038	SST	Yukon River sub-district 5-A test fishwheel	BF				$32.8			

- continued -

Table 1. Yukon River continued.

04-206	SST	Tozitna River weir	BLM					$ 66.0	$ 66.0	$ 66.0
04-208	SST	E. Fork Andreafsky River weir	USFWS					$ 80.2	$ 84.9	$ 89.5
04-209	SST	Gisasa River weir	USFWS					$ 79.5	$ 82.8	$ 86.3
04-211	SST	Adult salmon Henshaw Creek	USFWS					$ 25.0		
04-217	SST	Rampart Rapids fall chum abundance	USFWS					$295.7	$304.1	$317.0
04-228	SST	Yukon River chum GSI	USFWS					$ 77.7	$107.5	
04-229	SST	Lower Yukon River salmon drift test fishing	ADF&G					$104.9	$ 17.0	$ 53.4
04-231	SST	Yukon River Chinook telemetry	ADF&G					$296.9	$ 0.0	$ 0.0
04-234	SST	Kaltag Chinook salmon ASL sampling	COK					$ 3.0	$ 3.0	$ 3.0
04-251	HM-TEK	TEK camp in Fort Yukon	TCC,CATG, ADF&G					$ 50.8	$ 57.4	
04-255	HM-TEK	TEK study of upper Yukon River salmon fishery	NPS					$ 23.1	$ 26.9	
04-256	HM-TEK	Tanana Conservation Outreach	TTC, USFWS					$ 25.9	$ 25.9	
04-263	HM-TEK	Yukon River salmon management teleconferences	YRDFA					$ 15.0	$ 15.0	$ 15.0
04-265	HM-TEK	TEK of customary trade of subsistence fish on Yukon River	YRDFA					$ 39.4	$ 28.6	
04-268	HM-TEK	Hooper Bay subsistence monitoring	ADF&G, HBTC					$ 36.1		
			Subtotal	$380.1	$1,212.7	$1,088.1	$931.7	$1,379.2	$819.1	$630.1
		Yukon River Non-Salmon Projects								
00-004	SST	Humpback whitefish/beaver interactions	USFWS, CATG	$ 46.0						
00-006	HM-TEK	TEK- beaver/whitefish interactions	ADF&G, CATG	$ 39.3						
00-021	SST	Dall River northern pike	ADF&G, SV	$ 24.0						
00-023	SST	Humpback whitefish in Upper Tanana River	USFWS	$ 60.0	$ 41.0	$41.0	$ 43.1			
01-003	HM-TEK	TEK of subsistence harvests & fish, Old John Lake	ADF&G, AV, USFWS		$ 52.0					
01-011	HM-TEK	Subsistence survey of freshwater fish, Arctic Village	ADF&G, AV, USFWS		$ 33.3					
01-100	HM-TEK	TEK and subsistence uses of Koyukuk non-salmon fish	ADF&G, TCC		$174.6					
01-140	SST	Yukon Flats northern pike	ADF&G, SV		$292.0	$54.9	$ 30.0			
01-238	SST	GASH Working Group	USFWS			$34.2				
02-006	HM-TEK	Subsistence of freshwater fish from Arctic Village	ADF&G, NVV			$46.7				
02-037	HM-TEK	Lower Yukon River harvest monitoring of non-salmon fish	ADF&G, TCC			$60.1	$149.7	$89.4		
02-084	HM-TEK	Oral history & TEK of subsistence, Old John Lake	USFWS, VAV, ADF&G			$ 0.0				
04-253	HM-TEK	Upper Tanana subsistence fisheries TEK study	USFWS,UAF, ADF&G					$54.0	$82.1	$61.9
04-269	HM-TEK	TEK and radio telemetry of whitefish, Kanuti NWR	USFWS, RN					$109.0	$84.0	$36.3
			Subtotal	$169	$593	$223	$223	$252	$166	$98
		Total Yukon River Monitoring Program		$549.4	$1,836.1	$1,350.5	$1,154.3	$1,631.6	$985.2	$728.3

plans for one SST project and two of the five HM/TEK projects were not submitted. The seven remaining projects focus on salmon, and are located throughout the Yukon River drainage (**Map 1**).

Investigators used TRC proposal review comments, and sometimes worked with Office of Subsistence Management (OSM) staff, to develop investigation plans. Detailed budgets submitted with each investigation plan allowed funding requests to be summarized according to federal, state, tribal, and other organizations (**Table 2**). Submitted budgets also identified the portion of funds that would be used to hire local residents, as well as the amount of matching funds to be contributed by investigators (**Table 3**).

Investigation Plans were reviewed according to four fundamental evaluation criteria:

- Strategic importance
- Technical and scientific merit
- Past performance and administrative expertise
- Partnership and capacity building

Evaluation of strategic importance and need for this information was based on the contribution of the information to Federal subsistence management, the Councils' identified issues and needs as well as information provided by managers and stakeholders.

Available Funds

Federal Subsistence Board guidelines direct initial distribution of funds among regions and data types. For 2005, $415,600 is available for funding new projects in the Yukon River region. Two thirds of this ($277,100) is available for SST projects, and one-third ($138,500) is available for HM/TEK projects.

Recommendations for Funding – Stock Status and Trends Projects

As noted, the TRC forwarded five SST projects for IP development in the Yukon River region, although only four were submitted (**Table 4**). Funding requested for SST studies totaled $334,875 in FY 2005. Investigators were encouraged to obtain further in-kind or matching funds to offset the costs to the FRMP. All four projects are directed at salmon research.

The Technical Review Committee recommends funding all four projects in the following order of priority:

05-208 Anvik River Sonar Project	$ 58,589
05-211 Abundance and Run Timing of Adult Salmon at Henshaw Creek	$ 82,107
05-210 Tanana Fall Chum Salmon Mark Recapture Study	$172,073
05-203 Yukon River Coho Genetics	$ 22,106

Map 1. 2005 Yukon River Investigation Plans
Stock Status Trends
Harvest Monitoring/ Traditional Ecological Knowledge

STOCK STATUS & TRENDS

203 Coho Salmon Genetics
208 Anvik River Sonar
210 Tanana River Fall Chum Salmon Abundance
211 Henshaw Creek Weir

HARVEST MONITORING/ TRADITIONAL ECOLOGICAL KNOWLEDGE

252 Subsistence Fishing Schedule Impacts on Traditional Lifestyles
253 Village of Grayling Inseason Salmon Harvest Monitoring
254 Inseason Salmon Harvest Assessment

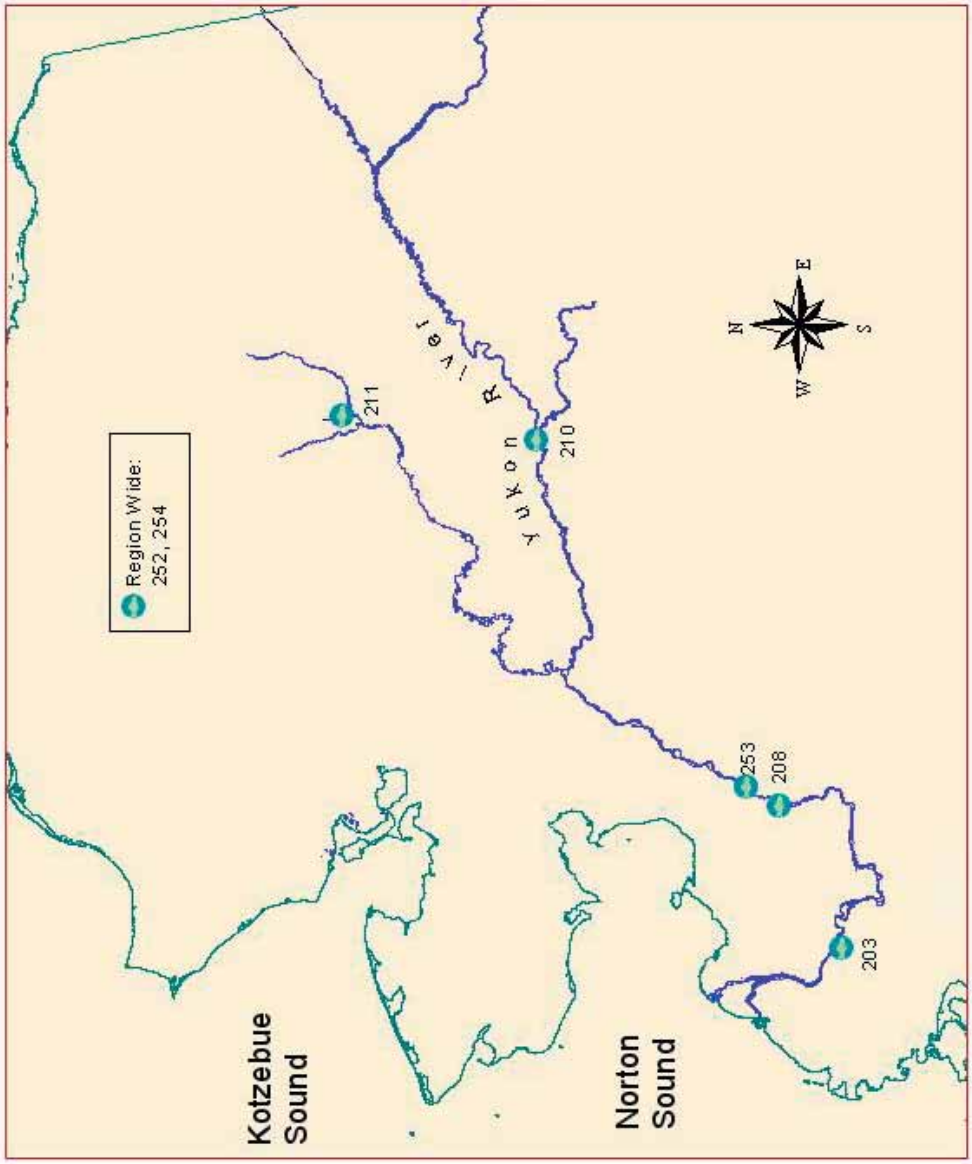

Table 2. Yukon River project costs, by organization (Alaska Native, State, Federal, other), for investigation plans submitted to the Fisheries Resource Monitoring Program for funding consideration in 2005.

Project Number	Title	Project Costs ($000s) Alaska Native	State	Federal	Other
	Stock Status and Trends Projects				
05-203	Coho Salmon Genetics, Yukon River	$ 0.0	$ 0.0	$22.1	
05-208	Anvik River Sonar	$ 0.0	$ 58.6	$ 0.0	$0.0
05-210	Tanana River Fall Chum Salmon Abundance	$ 0.0	$172.1	$ 0.0	$0.0
05-211	Henshaw Creek Weir	$57.3	$ 0.0	$24.8	$0.0
	Harvest Monitoring and Traditional Ecological Knowledge Projects				
05-252	Subsistence Fishing Schedule Impacts on Traditional Lifestyles	$68.0	$0.0	$ 0.0	$0.0
05-253	Village of Grayling In-season Salmon Harvest Monitoring	$28.5	$0.0		$0.0
05-254	Yukon River In-season Salmon Harvest Assessment	$23.9	$0.0	$10.1	$0.0

Table 3. Yukon River local hire and matching funds for investigation plans submitted to the Fisheries Resource Monitoring Program for funding consideration in 2005. Abbreviations used for lead organizations were: ADF&G=Alaska Department of Fish and Game, AVCP=Association of Village Council Presidents, USFWS=U.S. Fish and Wildlife Service, YRDFA=Yukon River Drainage Fisheries Association

Project Number	Lead Organization	Title	Funding ($000s) Local Hire	Matching
		Stock Status and Trends Projects		
05-203	USFWS	Coho Salmon Genetics, Yukon River	$7.0	$6.0
05-208	ADF&G	Anvik River Sonar	$0.0	$42.0
05-210	ADF&G	Tanana River Fall Chum Salmon Abundance	$10.5	$40.8
05-211	USFWS	Henshaw Creek Weir	$12.2	$79.4
		Harvest Monitoring and Traditional Ecological Knowledge Projects		
05-252	AVCP	Subsistence Fishing Schedule Impacts on Traditional Lifestyles	$1.0	$0.0
05-253	YRDFA	Village of Grayling In-season Salmon Harvest Monitoring	$6.2	$0.0
05-254	USFWS	Yukon River In-season Salmon Harvest Assessment		$24.7

Table 4. Yukon River stock status and trends investigation plans submitted to the Fisheries Resource Monitoring Program for funding consideration and Technical Review Committee funding recommendations in 2005.

Project		Recommendation	Requested Budget ($000s)		
Number	Title	TRC	2005	2006	2007
05-203	Coho Salmon Genetics, Yukon River	Yes	$22.1	$27.8	$0.0
05-208	Anvik River Sonar	Yes	$58.6	$58.6	$58.7
05-210	Tanana River Fall Chum Salmon Abundance	Yes	$172.1	$167.1	$162.3
05-211	Henshaw Creek Weir	Yes	$82.1	$78.5	$80.6
	Total		$334.9	$332.0	$301.6
	Funding Guideline		$277.1		
	TRC Recommdendation		$334.9	$332.0	$301.6

The recommended projects are strategically important, technically sound, and the investigators have a proven record of performance.

The Anvik River is one of the top producers of summer chum salmon in the Yukon River, historically accounting for nearly 50% of total production. The Anvik River Sonar is an important monitoring project for summer chum salmon, assessing run strength to meet biological escapement goals. The Henshaw Creek weir provides information on run timing and escapement of Chinook and summer chum salmon for the upper Koyukuk River. The capacity building portion of this study is excellent; the investigators have developed a three-year plan to have TCC assume responsibility for the Henshaw Creek weir. The Tanana River drainage produces approximately 30% of the fall chum salmon returning salmon to the Yukon River. The Tanana Fall Chum Salmon Mark Recapture Study is an established project providing an in-season abundance estimate and run timing for fall chum salmon in the Upper Tanana and Kantishna rivers. These projects provide valuable run timing and escapement data for the lower and middle Yukon River and the upper Koyukuk River for summer and fall chum and Chinook salmon. The Yukon River Coho genetics project will examine the genetic diversity among nine collections of coho salmon from separate regions within the Yukon River drainage. The information would then be used to evaluate the potential power of the genetic data to discriminate the origin of stocks harvested in mixed stock fisheries.

Recommendations for Funding – Harvest Monitoring and Traditional Ecological Knowledge projects

As noted, the TRC forwarded five HM/TEK projects for investigation plan development in the Yukon River region (**Table 5**). Investigation plans were not submitted for two projects: 05-255, *Traditional Ecological Knowledge and Harvest Survey of Non-Salmon Fish in the Middle Yukon River region* and 05-256, *Traditional Ecological Knowledge and Biological Sampling of Non-salmon Fish Species in the Yukon Flats region,* so only three IPs were evaluated by the TRC. Funding requested for HM/TEK studies totaled $131,000 in FY 2005. All three projects are directed at salmon assessment and monitoring.

Table 5. Yukon River harvest monitoring and traditional ecological knowledge investigation plans submitted to the Fisheries Resource Monitoring Program for funding consideration and Technical Review Committee funding recommendations in 2005.

Project		Recommendation	Requested Budget ($000s)		
Number	Title	TRC	2005	2006	2007
05-252	Subsistence Fishing Schedule Impacts on Traditional Lifestyles	No	$68.0	$0.0	$0.0
05-253	Village of Grayling In-season Salmon Harvest Monitoring	No	$28.5	$27.5	$25.3
05-254	Yukon River In-season Salmon Harvest Assessment	Yes w/ mod	$34.0	$30.0	$30.0
	Total		$130.5	$57.5	$55.3
	Funding Guideline		$138.5		
	TRC Recommendation		$34.0	$30.0	$30.0

The Technical Review Committee recommends funding one HM/TEK project in 2005. The *Yukon River In-season Salmon Harvest Assessment* project is highly collaborative, with an excellent capacity building component. The project addresses a priority issue for the three Yukon River Regional Advisory Councils, management agencies and tribal organizations, namely improving management of salmon, and finding ways to incorporate users and local knowledge into the management of this resource. Investigators propose collecting weekly in-season harvest assessment information in seven communities along the Yukon River. Information will be collected by Resource Information Technicians or fisheries technicians hired by YRDFA, and they will be trained in methods of survey administration by the federal manager. This project is recommended for funding pending a revised investigation plan which is still under review.

The remaining two projects address important issues, but are not recommended for funding as they contain technical deficiencies that preclude them from further consideration. The TRC recommendation is as follows:

05-254	Yukon River In-season Salmon Harvest Assessment	$ 34,000
05-252	Subsistence Fishing Schedule Impacts on Traditional Lifestyles	$ 68,000
05-253	Village of Grayling and Anvik In-Season Harvest Monitoring	$ 28,500

Recommendations for Funding – Summary and Data Type Analysis

It is the responsibility of the TRC to develop the strongest possible 2005 monitoring plan for each region and across the entire state. To enable comparisons across regions, the TRC recommends a 2005 Monitoring Plan for the Yukon River region in the following order of priority:

05-208	Anvik River Sonar Project	$ 58,589
05-211	Abundance and Run Timing of Adult Salmon at Henshaw Creek	$ 82,107
05-254	Yukon River In-season Salmon Harvest Assessment	$ 34,000
05-210	Tanana Fall Chum Salmon Mark Recapture Study	$172,073
05-203	Yukon River Coho Genetics	$ 22,106
05-252	Subsistence Fishing Schedule Impacts on Traditional Lifestyles	$ 68,000
05-253	Village of Grayling and Anvik In-Season Harvest Monitoring	$ 28,500

Projects recommended for funding total $368,875; within the funding guidelines for this region. The two projects below the line are not recommended for funding.

Recommended for Funding

05-203
Yukon River Coho Salmon Genetics

Geographic Area: Yukon River

Information Type: Stock Status and Trends (SST)

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Cost:	2005	2006
	$ 22,106	$ 27,814

Issue

Coho salmon are an important Yukon River subsistence fishery, comprising 10% of the salmon subsistence harvest. However, little is known about the biology of the Yukon River coho salmon. With the recent decline in Yukon River chum and Chinook salmon, demand for coho will continue to rise, emphasizing the need for a better understanding of this resource. Further, the Regional Advisory Councils for the Yukon River identified the need to identify the contribution of individual or geographically similar populations of Yukon River salmon to mixed-stock fisheries. In this project, we will provide estimates of population structure and genetic diversity of coho salmon within the Yukon River to assist in conservation and management of this species; this work is a necessary precursor for future mixed-stock analysis and harvest allocation.

Objectives

1) Evaluate patterns of genetic diversity within and among nine putative coho salmon populations distributed throughout the Yukon River drainage;

2) Provide preliminary estimates of the power of genetic data for use in various mixed-stock analyses (MSA) of Yukon River coho salmon.

Methods

The population structure and genetic diversity for Yukon River coho salmon will be evaluated using samples collected from the following locations: Archuelinguk, Andreafsky, Anvik, Kaltag, Kantishna, Nenana-Otter Creek, Nenana-17 mile slough, Delta Clearwater, and Fishing Branch. These samples will be assayed for genetic variation at 9 microsatellite loci currently in use for coho salmon research. The data will be tested to determine if sufficient variation exists for mixed-stock analysis applications.

Products

This project will estimate the genetic population structure of coho salmon in the Yukon River and evaluate the applicability of mixed-stock analysis for management. Progress reports will be submitted to OSM in December 2005. A final report will be submitted in June 2006 and will document the population structure and mixed-stock analysis assessment for Yukon River coho salmon. A database of allele frequency data will be available on the CGL website (http://www.r7.fws.gov/fisheries/genetics/index.htm); tissue samples will be archived for future use.

Experience of Investigators

The CGL staff works in collaboration with biologists, researchers and managers to design and conduct genetic research and provides expertise addressing conservation and management issues regionally, nationally and internationally. Since 1987, the CGL has maintained a large team (currently 12 individuals) of geneticists, biologists and technicians applying advanced techniques in conservation genetics to a variety of fish and wildlife issues (e.g., population structure and MSA).

Partnerships/Collaboration

In this project, we will work closely with YRDFA, BSFA, ADF&G, and USGS. In addition, we intend to hire Howard Beans from Mountain Village to sample coho salmon from the Archuelinguk.

Recommendation: *Fund*

Justification

The project is modestly priced and has the potential to provide managers with a tool to evaluate the regional contributions of coho salmon stocks to subsistence harvests. Coho salmon are of somewhat lower priority than other salmon species for subsistence management in the Yukon River. Current exploitation levels for coho salmon are below the previous five year average, while the recent returns are at or near record levels. The technical merit for the proposal and the past performance if the investigators are both rated as high. The Federal and State managers rated this project as a medium priority for the 2005 Yukon River Monitoring Program.

Recommended for Funding

05-208
Anvik River Sonar Project

Geographic Area: Yukon River

Information Type: Stock Status and Trends (SST)

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Cost:	2004	2005	2006
	$ 58,589	$ 58,589	$ 58,744

Issue

This project addresses Stock Status and Trends concerns by continuing to monitor summer chum escapement to one of the most important and longest running (began in 1979) summer chum salmon project in the Yukon River. Because of its longevity, this project has been important in setting escapement goals for managing summer chum salmon stocks in the Yukon River drainage. In a larger context, continuation of the Anvik River sonar project will enhance comprehensive research efforts examining this mixed stock fishery and the relative contributions from various tributaries of the Yukon River.

Objectives

The purpose of this project is to monitor escapement of summer chum salmon to the Anvik River and to assess age and sex composition of the escapement. The two primary objectives of this project are to:

1. Estimate daily summer chum salmon escapement passing the Anvik River sonar site during the target operation dates of June 20 through about July 25.

2. Estimate age and sex composition of the summer chum salmon spawning escapements by collecting samples from 152 summer chum during each of 4 stratum throughout the summer.

Methods

Split-beam sonar data will be collected 24-hours per day, 7 days a week for the duration of the study. Data will be collected for thirty minutes, alternating between each bank providing a total of 12 hours of data per day per bank. Counts will be expanded for the fraction of the day sampled to estimate daily passage.

The number of scales required for age-sex-length sampling this season are based on obtaining 152 summer chum salmon for each of the following time strata: June 17-30; July 1-7; July 8-14; and July 15-30. A sample size of 450 fish per stratum is needed for Chinook salmon assuming three major age classes with minor ages pooled and a 14% unageable rate when 3 scales per fish are collected, though attaining this number of samples is not a goal of the beach seining activities associated with the sonar project. Chinook salmon samples are collected during carcass sampling activities immediately after the sonar program terminates.

Products

Results of this project will be presented in a Department of Fish and Game Regional Information Report and will be widely available. Summer chum salmon passage Information will be presented to other agencies at Yukon area staff meetings.

Experience of Investigators

Carl Pfisterer has been a fishery biologist working on sonar projects with the Alaska Department of Fish and Game for five years. Mr. Pfisterer's graduate studies focused on sonar with courses in digital signal processing, wave theory, and fisheries acoustics. As the AYK Regional Sonar Supervisor, Mr. Pfisterer provides project oversight for four sonar projects on the Yukon and Kuskokwim rivers. Roger Dunbar has worked for the Alaska Department of Fish and Game since 1982 and been involved with sonar projects since 1984. Mr. Dunbar has been project leader of the Anvik River sonar project for the past two years.

Partnerships/Collaboration

Daily passage estimates will be shared at with other agencies and organizations at weekly Yukon River Drainage Fisherman's Association meetings and used in making management decisions.

Recommendation: *Fund*

Justification: Yukon River summer chum salmon are currently identified as a management concern by the Alaska Board of Fisheries. The Anvik River is one of the top producers of summer chum salmon in the Yukon River historically accounting for nearly 50% of total production. Approximately 74% of the total subsistence harvest for summer chum salmon occurs in the lower Yukon River. The Anvik River Sonar is an important monitoring project for summer chum salmon assessing run strength to meet biological escapement goals. Federal and State managers rated this project as the highest priority SST project proposed for the 2005 Yukon River Monitoring Program. Because of its long funding history by the State (25 years), and the importance of the information to both State and Federal managed fisheries, the Office of Subsistence Management requested a 50% match by the State for the operation of this project. The budget in the Investigation Plan was significantly reduced with a 42% matching component.

Recommended for Funding

05-210
Estimation of Tanana River Fall Chum Salmon Abundance Using Mark-Recapture Techniques

Geographic Area: Yukon River

Information Type: Stock Status and Trends (SST)

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Cost:	**2005**	**2006**	**2007**
	$172,073	$167,062	$162,311

Issue

There is a need to document the abundance and run timing of fall chum salmon within the Tanana River in the upper Yukon River area. This data gap was identified and the initial tagging project began in 1995 for the Tanana River. The addition of the Tanana River abundance project represents a significant improvement in data that was used for in-season assessment, total run reconstructions, and establishment of Biological Escapement Goals for larger drainages. Severe declines in Yukon River drainage fall chum salmon runs have resulted in restrictions and closures in attempts to provide for escapement and the first priority use of subsistence harvest. The Tanana River stocks represent greater than 30 percent of the Yukon River fall chum salmon. However, fall chum salmon bound for the Tanana River pass through mixed stock fisheries along the migration route. The estimates of fall chum salmon in the Tanana River in combination with

upper main stem Yukon River project provide a check to the estimates provided by Pilot Station sonar and the information is used for in-season fishery management as well as reconstruction the run post season.

Objectives

1. Estimate abundance *in-season* of fall chum salmon in Upper Tanana and Kantishna River drainages with relative precision (coefficient of variation) of 30%.

2. Estimate stock timing of fall chum salmon in Upper Tanana and Kantishna Rivers and migration rates between capture and recapture sites.

3. Estimate the total abundance of fall chum salmon in Upper Tanana and Kantishna River drainages with relative precision (coefficient of variation) of 20%.

4. Provide managers an assessment of total run based on in-season abundance estimates.

Methods

Alaska Department of Fish and Game (ADF&G), Bering Sea Fishers's Association (BSFA), Yukon River Drainage Fisheries Association (YRDFA) and National Park Service (NPS) propose to provide abundance estimates of fall chum salmon utilizing mark-recapture techniques. Chum salmon will be captured in fish wheels equipped with live boxes, tagged with spaghetti (Floy) tags and released from one site in each of the Tanana and Kantishna Rivers. The tagged chum salmon are subsequently recaptured in tag recovery fish wheels located 76 km upstream on the Tanana River, 113 km upstream on the Toklat River and 139 km upstream on the Upper Kantishna River. Data is relayed to Fairbanks ADF&G office daily during operations from August 15 to September 30. The in-season abundance estimates are typically based on the Bailey model with associated 95% confidence bound.

Products

Estimates of abundance of fall chum salmon within the Tanana and Kantishna Rivers will be provided in-season to fishery mangers. An annual report will be published in the appropriate ADF&G report series as well as fulfilling OSM reporting requirements.

Experience of Investigators

Bonnie Borba, Yukon River Management Area Fall Season Research Biologist for Alaska Department of Fish and Game, has worked with Alaska salmon management and research since 1987. She has been involved in the planning, implementation, and assessment of numerous salmon research projects operated in cooperation with federal and tribal organizations. Pete Cleary, a fishery biologist for ADF&G/CF, has been the project coordinator since 1998.

Partnerships/Collaboration

Operations and maintenance of fish wheels used in the mark-recapture are contracted to four local fishers. The state contracts the Tanana tagging and the Nenana recovery fish wheels since

1995. BSFA funds the Kantishna tagging fish wheel (1999 to present), NPS funds the Upper Kantishna recovery fish wheels (2000 to present), and YRDFA will provide a technician to assist in tagging salmon (2005 to 2007). Freight is barged to the ADF&G camp with the assistance of a local resident in Nenana annually. United States Fish and Wildlife Service assists with technical support for video monitoring at one site.

Recommendation: *Fund*

Justification

Yukon River fall chum salmon are currently identified as a management concern by the Alaska Board of Fisheries. The Tanana River Drainage produces approximately 30% of the fall chum salmon returning salmon to the Yukon. Although the most direct application of this information is for the management of District 6 fisheries outside of Federal jurisdiction, assessment of Tanana River stocks is necessary to assess run strength in the mainstem Yukon River. The project is technically sound and has a strong capacity building component, the investigators have developed partnerships between the U.S. Fish & Wildlife Service, NPS, BSFA, and YRDFA. The Federal and State managers rated this project as the third highest priority Stock Status and Trends project proposed for the 2005 Yukon River Monitoring Program. The investigators are further encouraged to seek possible efficiencies or matching funds in future submissions of this project.

05-211
Abundance and Run Timing of Adult Salmon in Henshaw Creek, Kanuti National Wildlife Refuge, Alaska

Geographic Area: Yukon River

Information Type: Stock Status and Trends (SST)

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Co-Investigators: Kimberly Elkin, Tanana Chiefs Conference, Inc.

Cost:	**2005**	**2006**	**2007**
	$ 82,107	$ 78,500	$ 80,597

Issue

Declines in run sizes of Yukon River salmon, especially Chinook Oncorhynchus tshawytscha and chum O. keta salmon have resulted in subsistence fishing restrictions and, in some cases, users not meeting their subsistence needs. To manage these stocks in-season, managers need information from throughout the drainage. This project provides in-season information to federal and state managers as an indicator for Koyukuk River salmon stocks.

Objectives

(1) Determine daily escapement and run timing of adult salmon;

(2) Estimate the age, sex and length composition of adult salmon;

(3) Determine the number of resident fish passing the weir;

4) Serve as a training platform for Tanana Chiefs Conference, Inc. (TCC) Natural Resource Program and its FIS Partners program fisheries biologist.

Methods

Investigators will install a resistance board weir across Henshaw Creek 1.5 km upstream from its mouth. The weir, live trap, and passing chute will allow investigators to count fish (by species) as they pass through the live trap. Fish sampling will include measuring length (MEL), determining

sex, collecting scales, and examining fish for floy and radio tags and secondary marks. TCC and FFWFO will partner to incorporate TCC into weir operation including pre- and post-season coordination and planning. TCC will be fully engaged through this funding cycle so that it will be fully capable of administering and conducting all aspects of weir operation after 2007.

Products

An annual performance report will be completed and submitted by December 1 of each year. An annual report describing the methods, results, and success in meeting project objectives will be completed and submitted no later than May 1 of each year. The reports will be published in the USFWS Alaska Fisheries Data Series. A presentation and poster will also be developed for use at village meetings and other fora.

Experience of Investigators

Personnel from the FFWFO currently operate several weir projects funded through OSM and have the experience and expertise to successfully operate this project. FFWFO personnel have been conducting adult salmon escapement studies on this system since 2000. Jeff Adams is the Branch Chief of Assessment and Monitoring at FFWFO and supervises nine fisheries biologists conducting FIS, Yukon River Salmon Treaty, and USFWS base funded projects in the Yukon River drainage as well as in Northwest Alaska and the North Slope. He has an M.S. in fisheries from the University of Alaska-Fairbanks and over 20 years of fisheries related experience in Alaska with the last four years focused on northern Alaska issues. He is the incumbent for the Henshaw Creek project until the vacancy for the project biologist can be filled. Ms. Kimberly Elkin is a Fisheries Biologist with TCC. She started working for TCC during the fall of 2002 as one of the Partners in Fisheries Monitoring biologists. Ms. Elkin first worked in Alaska in 1998 while conducting a seabird research project for the Alaska Maritime National Wildlife Refuge on the Western Aleutian Island of Buldir. Ms. Elkin finished her Masters degree in Ichthyology at the Southern Illinois University in Carbondale, Illinois in June 2002. Prior to Ms. Elkin working at TCC, she was employed with the University of Alaska, Fairbanks on a forest fragmentation project. She has worked on the Illinois, Mississippi, Cache, Tanana, Green, and Amazon Rivers. Ms. Elkin has been in Alaska since June 2002 and this will be her first time working on the Yukon River and its tributaries. Tanana Chiefs Conference has been existence since 1962. It is an intertribal non-profit consortium acting as the political, economic, legal, and social advocate to satisfy the governmental, health, and social needs of its member tribes. TCC will have the administrative and professional expertise to assume all responsibilities related to operation of this project.

Partnership/Collaboration

The FFWFO has worked with TCC to strengthen the capacity building component of this project. Consultation has occurred with Mr. Mike Smith, TCC, Wildlife and Parks, to develop the proposed approach and the integration of TCC in the project and the future of assumption of operations by TCC. The FFWFO staff has established a positive rapport with villages, hired local residents, participated in YRDFA meetings and seminars, and utilized the Kanuti National Wildlife Refuge for local logistical support.

Recommendation: *Fund*

Justification

The Henshaw Creek weir provides run timing and escapement of Chinook and summer chum for the upper Koyukuk River. Yukon River summer chum salmon are identified as a management concern and Yukon River Chinook salmon are currently identified as a yield concern by the Alaska Board of Fisheries. The technical merit and capacity building for this project are both high. The capacity building portion of this study is excellent, and the investigators developed a three-year plan to have TCC assume responsibility for the Henshaw Creek weir. Federal and State managers rated this project as the second highest priority Stock Status and Trends project proposed for the 2005 Yukon River Monitoring Program.

Not Recommended for Funding

05-252
An Examination of the Perceived Impact of the Subsistence Fishing Schedule on Traditional Fishing Lifestyles Within the Yukon River Drainage

Geographic Area: Yukon River

Information Type: Harvest Monitoring and Traditional Ecological Knowledge (HM/TEK)

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Cost:	**2005**
	$ 68,046

Issue

Beginning in 2001, the Alaska Board of Fisheries (BOF) adopted a subsistence salmon fishing schedule on the Yukon River. The schedule was adopted in an effort to reduce harvest impacts on any particular component of the run and spread subsistence fishing opportunity among users during years of low salmon runs. The goal of the schedule was to provide windows of time that salmon may migrate upriver with no fishing. In the Yukon River, there are six major fishing districts and closure times vary depending on the district fished. Some fishers are claiming that patterns of use, time spent at fish camps, and traditional values are changing relative to the fishing opportunity.

This proposal would address two of the subsistence harvest patterns issues as addressed in the Issues And Information Needs 2004 report. Specifically, documenting the changes and continuing to refine and improve subsistence harvest information in terms of patterns of use, species utilized, areas fished, gear used, and time fished. It is also important to develop an understanding of how and why subsistence salmon harvests have changed over time, specifically

addressing social and economic issues and the impacts of these changing patterns on subsistence lifestyles.

Objectives

The purpose of this study is to specifically address whether recent/current fishing regulations have an impact on the traditional fishing lifestyles and/or opportunities. To accomplish this:

1. An interview guide will be developed to be used in the villages of St. Mary's, Grayling, and Fort Yukon. This effort is intended to develop an understanding of the most important and pertinent information that will include:

   A. Traditional/Contemporary harvest and fish camp patterns of use, species utilized, areas fished, gear used, and times fished

   B. How and why subsistence salmon harvests have changed over time, incorporating social and economic aspects

   C. Relative abundance and fish population trends before and after placement of recent subsistence fishing regulations

2. Conduct 8-10 interviews with local experts in St. Mary's, Grayling, and Fort Yukon

3. Hire and train three local village technicians for the project

4. Transcribe, analyze, and summarize information collected into a final report, and

5. Develop a professional quality poster presentation

Methods

Qualitative information from semi-directed interviews will be collected, analyzed and reported in relation to perceived or demonstrated factors, such as: changes in stock status and trends; changing employment trends; changes in the economic/cultural dynamics of commercial/subsistence fishing gear and practices; other regulatory factors. The interview will be designed to ensure that fishers have the opportunity to express the range of perceived impacts and their causal factors rather than merely responding to or confirming presumptive concerns about the subsistence fishing schedule and traditional lifestyles.

Local village Traditional Councils will be consulted to provide input for selection of individuals considered knowledgeable about subsistence fishing and the regulatory issues. Hiring of technicians will occur for assistance in the project objectives and in an effort to generate local interest and capacity building in the biological and social sciences for future work experience.

Products

An annual report will be completed and submitted by May 15, 2006. This report will include information on progress made by the investigators toward meeting study objectives, including

a description of information collected and findings. A compilation of all data, results, etc. will be complied onto CD for storage. A professional poster will be produced for display and presentation.

Experience of Investigators

Personnel from AVCP, YRDFA, CATG, and ADF&G have varying degrees of experience and expertise to successfully complete this project. This is a team approach and has all the attributes for conducting such work. Personnel from AVCP have the expertise in the lower river region, YRDFA staff has the expertise of past studies for the middle region of the drainage, and CATG has the expertise to contribute to conducting the work in the upper river area.

Partnerships/Collaboration

The project will be a collaborative effort between the AVCP, CATG, and YRDFA. Local technicians will be hired to work on the interviewing process. The project will be modeled after studies that have consulted with village members in the past so that this survey study doesn't become intrusive. Visits to various villages are ongoing and developing important contacts is taking place presently.

Letters of support will be drafted to appropriate organizations explaining the scope of the project and to solicit their support. This project will provide villagers with an opportunity for employment.

Recommendation: *Do not fund*

Justification

While this project addresses an extremely important and timely issue, the TRC has serious technical, methodological and staffing concerns with the Investigation Plan. Of particular concern is that Investigators do not address how they will tease out various causes for changing fishing patterns, nor do they explain how they intend to evaluate the information gathered through interviews. Additionally, the absence of social science expertise is problematic, as this is a complex issue requiring complex methodological and analytical abilities. Finally, staffing is an issue, as one of the investigators has left his position since submitting the proposal. While the TRC recognizes the important issues raised in this investigation plan, the technical and staffing issues preclude it from being funded at this time.

05-253
In-Season Subsistence Salmon Harvest Monitoring Project-Villages of Grayling and Anvik

Geographic Area: Yukon River

Information Type: Harvest Monitoring and Traditional Ecological Knowledge (HM/TEK)

Principal Investigators: Jill Klein /Dion Clark Polly
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Cost:	2005	2006	2007
	$ 28,539	$ 27,531	$ 25,270

Issue

Residents along the Yukon River in Alaska and Canada as well as the Regional Advisory Councils have identified the need to refine and improve subsistence harvest information. Subsistence harvest data is necessary for overall management of the various salmon species returning to the Yukon River, as it is important to spread out harvests and enable reasonable opportunity to subsistence fishers up and down the river. In addition to this, the Yukon River Salmon Agreement has negotiated harvest shares that require Alaska to get a specific number of salmon up to the Canadian border. Managers need to know if subsistence users are meeting their needs and where they are in their harvest goals throughout the season. To effectively manage the salmon resources on the Yukon River, this information needs to be collected in a timely and accurate manner and then synthesized for in-season decision-making and post-season run reconstruction.

This study will enable managers to obtain the best total subsistence salmon harvest and timing of harvest for the communities of Grayling and Anvik possible.

Objectives

1) Solidify in-season subsistence salmon monitoring project in Grayling and establish monitoring project in Anvik including identifying fishing families.

2) Coordinate and refine survey instrument and reporting procedures with state and federal managers prior to and after each fishing season.

3) Increase involvement and participation of tribal and community organizations in initiating in-season harvest numbers and timing assessment.

4) Hire coordinator in Grayling and Anvik to oversee day-to-day activities, coordinate with YRDFA and synthesize information to report on YRDFA weekly teleconferences and technicians to survey fishers and report to coordinator.

5) Community meetings will be held to explain project and receive local input.

6) Collect in season subsistence harvest numbers weekly from every fishing family in communities, June through Sept.

7) YRDFA staff travel to Grayling and Anvik to oversee project.

8) Coordinator will summarize weekly survey data and provide it to state and federal managers *prior* to the weekly YRDFA teleconferences so it can be used when making management decisions.

9) Coordinator will participate consistently on weekly YRDFA teleconferences.

10) Technician will conduct summary survey with each fishing family using ADF&G post-season survey questions at end of each families fishing season.

11) YRDFA will compile data and write post-season report with data provided to ADF&G and USFWS and communities.

12) Post season evaluation will entail collecting feedback from technicians, managers, etc. to obtain best total subsistence salmon harvest and timing of harvest, and to make recommendations for subsequent seasons.

Methods

This study will take place in two communities along the Yukon River, Grayling and Anvik, both located in fishing Subdistrict 4-A. A locally hired technician will survey all fishing families in these communities weekly throughout the fishing season. The survey will consist of ADFG's catch form and USFWS's RIT form, which will be merged into a single form with the final visit utilizing the post-season survey form from ADF&G. The coordinator will report weekly during the YRDFA Salmon In-season Management Teleconferences.

Products

Products from this project include subsistence harvest data including timing and numbers harvested weekly, progress weekly towards subsistence harvest goals, and project collecting in-season subsistence harvest data in Grayling.

YRDFA will produce concise project performance reports on Dec 1, 2005, Dec 1, 2006, and Dec 1, 2007 an annual report by May 1, 2006 and May 1,2007 and a final report by Dec 2007.

Experience of Investigators

Jill Klein, YRDFA Executive Director has worked with Yukon River residents for the past four and a half years and has been facilitating the YRDFA in-season management teleconferences for the past three seasons. Her work has involved her with many issues regarding subsistence and commercial fisheries on the Yukon River. As YRDFA Project Manager, Ms. Klein developed, implemented and co-authored the final report of the YRDFA Salmon Traditional Ecological Knowledge project funded by the Fisheries Information Service.

Dion Clark Polly, YRDFA TEK Program Assistant, is originally from the community of Grayling and is working on a BA in Anthropology at the University of Alaska Anchorage. She has worked on YRFDA TEK projects since 2001, assisting with the TEK forum, the on-going phenotypic project and editing the TEK report. Ms. Polly has taken the lead on community contacts for this proposal.

Partnerships/Collaboration

The capacity building aspects of this project includes increased participation and involvement by Grayling and Anvik through collection and reporting of subsistence data as a community, enhancing their involvement in the resource management process. Hiring a coordinator and technicians locally will add to community capacity by providing jobs and developing skills. Consultations are on going with ADF&G staff, USFW staff and the Grayling Tribal Council.

Recommendation: *Do not fund*

Justification

This project focuses on a high-priority subsistence resource (salmon) in an area with significant federal lands/waters. Improving the management of this resource and finding ways to incorporate users and local knowledge into the management of this resource is a priority of all area Regional Advisory Councils, management agencies and tribal organizations. However, because the Investigation Plan contains significant and substantive methodological and technical issues, the TRC does not recommend funding at this time.

Recommended for Funding with Modification

05-254
Yukon River In-season Salmon Harvest Assessment

Geographic Area: Yukon River

Information Type: Harvest Monitoring and Traditional Ecological Knowledge (HM/TEK)

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Cost:	**2005**	**2006**	**2007**
	$ 34,000	$ 30,000	$ 30,000

Issue

Timely subsistence salmon harvest information is needed for in-season fishery management by state and federal fishery managers on the Yukon River. Two key partners, Alaska Department of Fish and Game (ADF&G) and YRDFA, plus the Federal Regional Advisory Councils (RAC's), have requested assistance from the U.S. Fish and Wildlife Service (USFWS) in obtaining timely qualitative in-season salmon harvest information from rural villages. By conducting in-season salmon harvest surveys there is direct link from subsistence user to managers allowing managers to assess whether subsistence harvests in villages along the Yukon River are consistent with managers perception of the salmon run. These surveys are weekly face to face meetings with local fishers conducted by local technicians that have been hired by nongovernment, tribal, or agency personnel. When fisheries managers know how people are progressing toward meeting their subsistence needs they have more information with which to adjust subsistence schedules, provide for commercial openings, and adjust for liberalization of the fishing schedule.

Objectives

(Local surveyors *at this time* are primarily RIT's with some tribal organization representation. Long term objective is to potentially turn in-season salmon surveys over to tribal organizations).

1. Increase involvement and participation of tribal organizations in initiating in-season harvest assessment surveys.

2. Involve local people in fisheries management by having them collect and share information used for in-season fishery management decisions.

3. Train local villagers on in-season salmon harvest survey techniques.

4. Local surveyors weekly will collect qualitative in-season subsistence salmon harvest data in a standardized format from active fishing households.

5. Summarize weekly survey data and provide it to state and federal managers *prior* to the weekly YRDFA teleconferences so it can be used when making management decisions.

6. Local surveyors will present survey summaries and receive information on the YRDFA teleconferences.

7. Broadcast weekly YRDFA teleconference summaries via the local Galena public radio station to keep resource users in the Middle Yukon informed of management decisions.

8. Opportunistically collect age, sex, and length samples from Chinook and chum salmon in coordination with and support of ADF&G.

Methods

The USFWS and YRDFA propose to collect weekly qualitative in-season subsistence salmon harvest data from active fishing households in Emmonak, Holy Cross, Nulato, Huslia, Galena, and Beaver specific to Chinook, summer chum, fall chum, and coho salmon. USFWS RIT's and Emmonak/Louden Tribal council local hire surveyors will conduct interviews on participating fishing households between June and September. Sampling for age, sex, and length information will occur opportunistically with subsistence surveys.

Products

Weekly written summaries of interviews with subsistence salmon fishers will be provided to salmon management entities of the Yukon River Region. Surveyors will provide oral summaries of the interviews during the weekly YRDFA teleconferences. Annual reports on the subsistence harvest monitoring project will include a summary of accomplishments of the past year and any proposed changes in design, methods or scope should be completed by about 31 March.

Experience of Investigators

Jonathon Gerken, a fishery biologist with the Fairbanks Fish and Wildlife Field Office, will be the project manager. Mr. Gerken has one year of experience working on in-season subsistence surveys and four years working with salmonids in the Pacific Northwest for multiple agencies. Russ Holder, Geoff Beyersdorf, and YRDFA will provide project oversight as needed. Both Mr. Holder and Mr. Beyersdorf have over 10 years experience in fisheries in Alaska and elsewhere and have extensive commercial fishing, subsistence management, and project development experience. Mr.Holder was responsible for supervising and reporting the ADF&G Yukon River postseason survey for six years. YRDFA has conducted Traditional Ecological Knowledge and socio-economic surveys in the Yukon River Drainage and has a history of involvement in Yukon River salmon issues.

Partnerships/Collaboration

This proposal is a collaborative effort between YRDFA, the Emmonak and Louden Tribal Council, Fairbanks Fish and Wildlife Field Office, and several National Wildlife Refuge's. The local hire emphasis will promote involvement of local resource users as active participants of the federal and state in-season fisheries management decision process. Local hiring may also help identify individuals interested in the natural resources and help them decide if they have an interest for further study and career selection. A long-term vision for this pilot project is that it could be managed by the USFWS Partner participants (CATG, AVCP, TCC, and/or local tribal organizations) and allow local administration of harvest assessment. . Conducting these surveys and using them in management decisions establishes communication and promotes interaction between subsistence users, tribes, organizations, communities, and agencies.

Recommendation: *Fund with modifications*

Justification

This is a highly collaborative project, with an excellent capacity building component. The project addresses a priority issue for Regional Advisory Councils, management agencies and tribal organizations, namely improving management of salmon, and finding ways to incorporate users and local knowledge into the management of this resource. Investigators propose collecting weekly in-season harvest assessment information in seven communities along the Yukon River. Information will be collected by RITs or fisheries technicians hired by YRDFA, and they will be trained in methods of survey administration by the Federal manager. This project is recommended for funding pending a revised Investigation Plan, and the addition of social science expertise and an evaluative component. The revised Investigation Plan was submitted to OSM and is under review for consistency with TRC recommendations.

2005 DRAFT FISHERIES RESOURCE MONITORING PLAN KUSKOKWIM RIVER REGION OVERVIEW

ISSUES AND INFORMATION NEEDS

Original guidance for the Fisheries Resource Monitoring Program (Monitoring Program) was provided by the Federal Subsistence Board and outlined in the *Operational Strategy for Information Management*[1]. Since that time, the two Kuskokwim River Regional Councils (Yukon-Kuskokwim Delta and Western Interior), with guidance provided by the Kuskokwim Fisheries Resource Coalition[2] (KFRC) have identified a number of broad categories of issues and information needs for the Kuskokwim River Region. These include collection and analysis of traditional ecological knowledge; harvest monitoring; salmon assessment and escapement; non-salmon fish species assessment; marine/coastal salmon ecology and contaminants. While the Federal Subsistence Board made a policy call not to fund projects addressing certain data needs (i.e., marine/coastal salmon studies, habitat impacts and contaminants), Monitoring Program project selections to date have generally addressed the remaining categories.

To ensure that the Monitoring Program addresses the highest priority information needs for Federal subsistence fisheries management, the Office of Subsistence Management (OSM) began a strategic planning process this year to build on the work done by the Councils. Facilitated workshops for the Southcentral (Copper River and Prince William Sound) and Southwest (Bristol Bay-Chignik) regions were held in April and May with representatives of Federal and State agencies, academia, Alaska Native and rural organizations, and affected Councils. Participants at each workshop identified fisheries units for their region; developed goals, objectives, and information needs for each fishery unit; and began the prioritization process for fishery units and goals, objectives and information needs. This fall, follow up workshops will be held for each of the two regions to complete the prioritization process and identify knowledge gaps for each information need. Based on workshop results, prioritized information needs lists will be developed and used to focus the Call for Proposals for the Monitoring Program. Strategic planning workshops will be held for each of the seven geographic regions, and the entire planning process is anticipated to take at least four years.

[1] Krueger, C., Brelsford, T., Casipit, C., Harper, K., Hildebrand, I., Rost, P., Thompson, K., and Jones, L. 1999. *Federal Subsistence Fisheries Management: Operational Strategy for Information Management. Report to the Federal Subsistence Staff Committee by the Sub-Committee for the Development of a Blueprint for Interagency Functions, Roles, and Responsibilities*. 122 p.

[2] The Kuskokwim Fisheries Resource Coalition (KFRC), composed of key fisheries staff from the Association of Village Council Presidents (AVCP), Tanana Chiefs Conference (TCC), Orutsararmiut Native Council (ONC), Kuskokwim Native Association (KNA), McGrath Native Village Council (MNVC), Alaska Department of Fish and Game (ADF&G), and the United States Fish and Wildlife Service (USFWS) has been instrumental in providing coordination and recommendations for the Kuskokwim Fisheries Resource Monitoring Program. The Office of Subsistence Management, the Technical Review Committee, the Councils, and the Federal Subsistence Board have generally supported the Coalition's recommendations.

Initiation of strategic planning in the Kuskokwim River Region by OSM will follow completion of a science plan for sustaining and restoration of salmon presently being developed by the KFRC with the Arctic Yukon Kuskokwim Sustainable Salmon Initiative (AYK SSI). Completion of the AYK SSI science plan is scheduled for the fall 2005.

Projects currently funded under Fisheries Resource Monitoring Program

Since its inception**,** the Kuskokwim River Monitoring Program has funded a total of 46 projects through 2004 (**Table 1**). These projects provide information needed to manage and conserve subsistence fisheries resources, address fisheries issues and priorities identified by the Councils and address regulatory actions before the Federal Subsistence Board. Presently, the Monitoring Program supports well over 50% of all fisheries monitoring and research conducted in the Kuskokwim River Region.

Projects Forwarded for Investigation Plan Development

Twelve (12) proposals for the Kuskokwim River Region were submitted to the Office of Subsistence Management. The Technical Review Committee (TRC) reviewed the proposals and recommended six stock status and trends (SST) and three harvest monitoring and traditional ecological knowledge projects (HM/TEK) for development of Investigation Plans (IPs). Project locations are presented in **Map 1**. Investigation Plans were reviewed according to four fundamental evaluation criteria, including:

- Strategic Priority
- Technical and Scientific Merit
- Past Performance and Administrative Expertise
- Partnership/Capacity Building

Investigators responded to TRC proposal review comments, and sometimes worked with Office of Subsistence Management staff, to develop IPs. Detailed budgets submitted with each IP allowed funding requests to be summarized according to Alaska Native, State, Federal, and other organizations (**Table 2**). Submitted budgets also identified the portion of funds that would be used to hire local residents, as well as the amount of matching funds to be contributed by investigators (**Table 3**).

Available Funds

Federal Subsistence Board guidelines direct initial distribution of funds among regions and data types. For 2005, $415,600 is available for funding new projects in the Kuskokwim River Region. Two thirds of this ($277,000) is available for SST projects, and one-third ($138,500) is available for HM/TEK projects.

Table 1. Summary of projects funded under the Fisheries Resource Monitoring Program in the Kuskokwim River by subsistence fishery, 2000 - 2006. Abbreviations used for investigators were: ADF&G=Alaska Department of Fish and Game, AVCP=Association of Village Council Presidents, BSFA=Bering Sea Fisherman's Association, KNA=Kuskokwim Native Association, MNVC=McGrath Native Village Council, ONC=Orutsararmiut Native Council, OVK=Organized Village of Kwethluk, TNC=Tuluksak Native Community, USFWS=U.S. Fish and Wildlife Service.

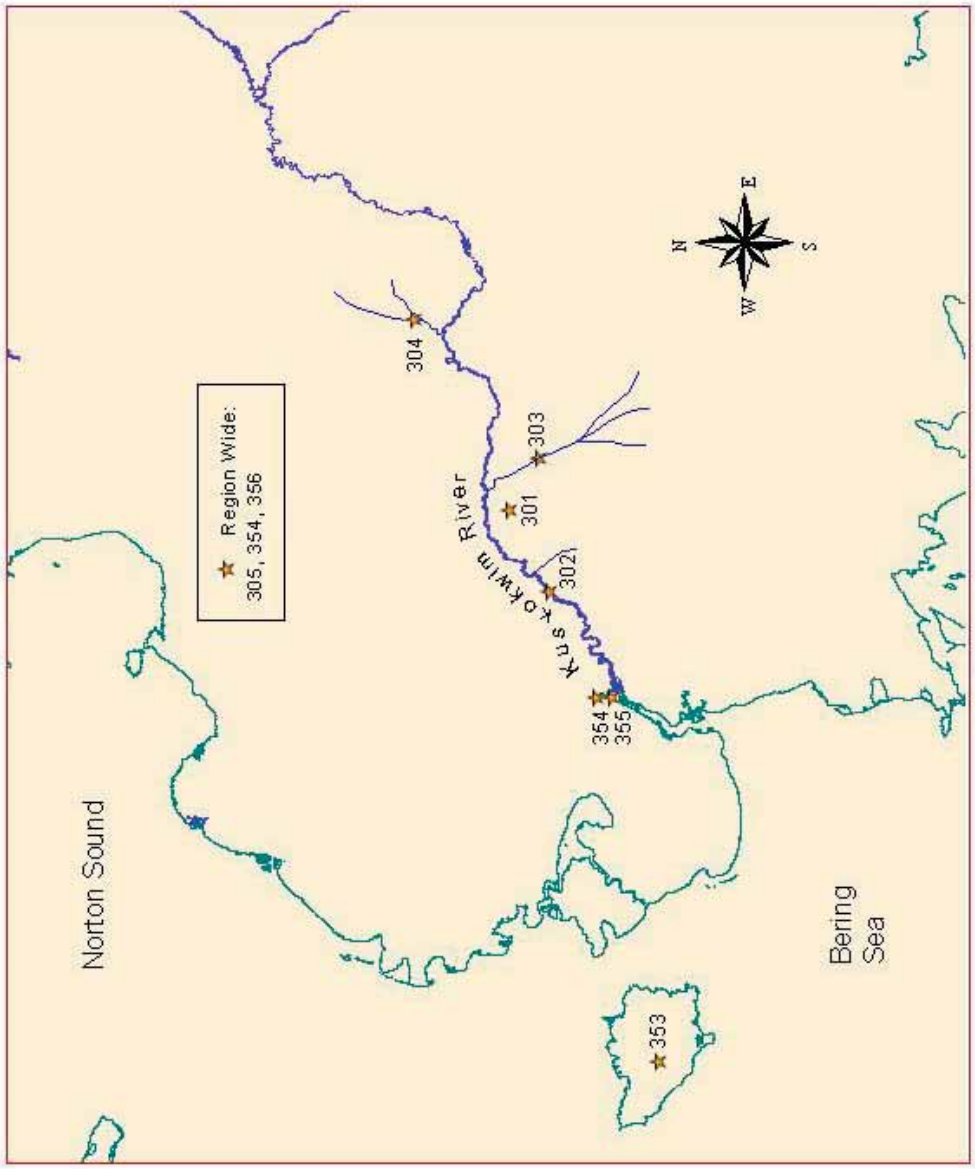
Project Number	Data Type	Project Title	Investigators	Budget ($000s) 2000	2001	2002	2003	2004	2005	2006
		Kuskokwim River Salmon Projects								
00-007	SST	Tatlawiksuk River weir	ADF&G, KNA	$30.0	$22.9	$30.0	$87.1			
00-019	SST	Kwethluk River weir	USFWS, OVK	$204.9	$113.0	$117.2	$116.6			
00-029	SST	Documentation/communication on floating weirs	AVCP	$5.2						
00-030	SST	Kuskokwim salmon project site surveys	ADF&G, USFWS	$12.9						
01-053	SST	Tuluksak River weir	USFWS, TNC		$200.2	$130.8	$138.3			
01-070	SST	Genetic diversity of Kuskokwim River Chinook	ADF&G, USFWS		$125.1	$164.3	$10.0			
01-086	SST	Kuskokwim River escapement project technician	ONC		$10.7	$12.9	$14.3			
01-088	SST	Natural Resource Internship Program	KNA		$78.9					
01-116	SST	Kuskokwim River Salmon Work Group support	ADF&G		$20.9	$104.4				
01-117	SST	Kuskokwim salmon ASL assessment	ADF&G		$56.6	$98.3	$37.1			
01-141	SST	Holitna River Chinook, chum & coho telmentry	ADF&G		$678.3					
02-046	SST	Kuskokwim River Chinook inriver abundance	ADF&G			$177.2	$70.8	$92.2		
03-030	SST	Kuskokwim River chum, sockeye, & coho M-R	ADF&G, KNA				$50.1			
03-041	SST	Kuskokwim coho genetics	ADF&G, USFWS				$38.3			
03-931	SST	Kuskokwim Science Plan	BSFA				$65.0			
04-301	SST	Kwethluk River Weir	USFWS, OVK					$131.3	$131.3	$131.3
04-302	SST	Tuluksak River Weir	USFWS, TNC					$119.6	$119.6	$119.6
04-306	SST	Holitna River Chinook and chum telemetry	ADF&G					$231.4	$240.0	$0.0
04-307	SST	Kuskokwim ASL sampling program	ADF&G					$85.3	$87.8	$87.8
04-308	SST	Kalskag Mark Recapture Study	ADF&G					$141.2	$144.8	$144.8
04-309	SST	KNA Intership Program	KNA					$23.4	$23.4	$23.4
04-310	SST	Tatlawiksuk River Weir	ADF&G, KNA					$120.0	$42.2	$122.0
04-311	SST	Kuskokwim Coho Genetic Mixed Stock Assessment	USFWS					$66.2		
00-008	HM-TEK	Bethel in-season subsistence harvest data	ONC	$17.7						
00-009	HM-TEK	Bethel post-season harvest monitoring	ADF&G, ONC	$32.2						
01-019	HM-TEK	Planning meetings in AVCP Region	AVCP, KNA		$34.4					
01-023	HM-TEK	Upper Kuskokwim River in-season data	ADF&G, MNVC		$16.0	$30.7	$12.1			
01-024	HM-TEK	Bethel area post-season fishery household surveys	ADF&G, ONC		$32.3	$32.3	$32.3			
01-132	HM-TEK	Bethel Area in-season subsistence salmon harvest data	ONC, ADF&G		$46.1	$55.4	$38.5			
01-147	HM-TEK	Survey of sport fisheries, Aniak River	ADF&G, KNA		$100.8					
01-225	HM-TEK	Middle Kuskokwim River in-season salmon harvest	KNA, ADF&G, USFWS		$47.4	$45.7	$24.0			
01-226	HM-TEK	Subsistence fisheries research capacity building	ADF&G		$31.8	$15.9				
02-036	HM-TEK	Aniak area post-season subsistence fishery surveys	ADF&G, KNA			$10.2				
04-353	HM-TEK	Bethel area in-season subsistence Salmon Data Collection	ADF&G, ONC					$62.4		
04-355	HM-TEK	Middle Kuskokwim in-season subsistence salmon surveys	ADF&G, KNA					$22.6		
04-359	HM-TEK	Kuskokwim postseason subsistence salmon harvest surveys	ADF&G, KNA, ONC					$127.0		
			Subtotal	$302.9	$1,615.4	$1,025.3	$734.5	$1,302.5	$820.4	$629.1

- continued -

Table 1. Kuskokwim River continued.

		Kuskokwim Bay Salmon Projects								
00-027	SST	Extend Goodnews River weir operations	ADF&G	$25.0	$25.0	$25.0	$27.4			
04-312	SST	Goodnews River Weir Coho Extension	ADF&G					$27.5	$28.2	$28.2
00-028	SST	Extend Kanektok River weir operations	USFWS	$3.0	$1.5					
01-118	SST	Kanektok River salmon weir	ADF&G, BSFA		$130.0	$131.5	$130.0			
04-305	SST	Kanektok River Weir	ADF&G, BSFA					$128.7	$130.7	$130.7
04-351	HM-TEK	Kuskokwim Bay TEK and Oral History	USFWS					$48.5		
			Subtotal	$28.0	$156.5	$156.5	$157.4	$204.7	$158.9	$158.9
		Resident Species Projects								
01-052	SST	Humpback & broad whitefish in Whitefish Lake	USFWS, KNA		$146.9	$119.9	$127.8			
01-112	HM-TEK	Aniak River subsistence fisheries study	ADF&G, KNA		$66.2	$51.8				
01-235	HM-TEK	Lake Minchumina, Telida, Nikolai & Cantwell	ADF&G		$9.0	$20.0				
04-304	SST	Whitefish Lake telemetry of whitefish	USFWS					$109.8	$109.8	
			Subtotal	$0.0	$222.1	$191.7	$127.8	$109.8	$109.8	$0.0
		Total Kuskokwim River Monitoring Program		$330.9	$1,986.5	$1,343.6	$1,049.5	$1,643.2	$1,075.2	$788.0

Map 1. 2005 Kuskokwim River Investigation Plans
Stock Status Trends
Harvest Monitoring/ Traditional Ecological Knowledge



STOCK STATUS & TRENDS
301 Whitefish PIT Tags
302 Inriver Abundance of Chinook Salmon
303 Aniak River Sonar Upgrade
304 George and Takotna River Weirs
305 Genetic Stock ID of Chinook Salmon on the Kuskokwim

HARVEST MONITORING/ TRADITIONAL ECOLOGICAL KNOWLEDGE
353 Nunivak Island Subsistence Fisheries
354 Kuskokwim inseason Subsistence Salmon Harvest Data Collection
355 Nunapitchuk Freshwater Fish Studies
356 Kuskokwim Area Post-Season Subsistence Harvest Data Collection

Table 2. Kuskokwim River project costs, by organization (Alaska Native, State, Federal, other), for investigation plans submitted to the Fisheries Resource Monitoring Program for funding consideration in 2005.

		Project Costs ($000s)			
Project Number	Title	Alaska Native	State	Federal	Other
	Stock Status and Trends Projects				
05-301	Whitefish PIT Tags			$40.0	
05-302	Inriver Abundance of Chinook Salmon		$117.6		
05-303	Aniak River Sonar Upgrade		$98.7		
05-304	George and Takotna River Weirs		$72.0		
05-305	Genetic Stock ID of Chinook Salmon on the Kuskokwim		$106.0		
05-306	Kuskokwim In-season Subsistence Salmon Harvest Data Collection		$45.0		
	Harvest Monitoring and Traditional Ecological Knowledge Projects				
05-353	Nunivak Island Subsistence Fisheries	$37.5			$23.6
05-355	Nunapitchuk Freshwater Fish Studies	$7.7	$43.1		
05-356	Kuskokwim Area Post-Season Subsistence Harvest Survey	$32.4	$41.8		

Table 3. Kuskokwim River local hire and matching funds for investigation plans submitted to the Fisheries Resource Monitoring Program for funding consideration in 2005. Abbreviations include: ADF&G=Alaska Department of Fish and Game, UAF=University of Alaska-Fairbanks, USFWS=U.S. Fish and Wildlife Service

			Funding ($000s)	
Project Number	Lead Organization	Title	Local Hire	Matching
		Stock Status and Trends Projects		
05-301	USFWS	Whitefish PIT Tags		
05-302	ADF&G	Inriver Abundance of Chinook Salmon	$14.9	
05-303	ADF&G	Aniak River Sonar Upgrade		$61.7
05-304	ADF&G	George and Takotna River Weirs		$79.4
05-305	ADF&G	Genetic Stock ID of Chinook Salmon on the Kuskokwim		$41.5
05-306	ADF&G	Kuskokwim In-season Subsistence Salmon Harvest Data Collection	$10.0	$20.9
		Harvest Monitoring and Traditional Ecological Knowledge Projects		
05-353	UAF	Nunivak Island Subsistence Fisheries	$25.2	$10.5
05-355	ADF&G	Nunapitchuk Freshwater Fish Studies		
05-356	ADF&G	Kuskokwim Area Post-Season Subsistence Harvest Survey	$12.6	$80.3

Recommendations for Funding – Stock Status and Trends Projects

The goals of the Monitoring Program are to provide information necessary for effective management of subsistence fisheries on Federal conservation system unit lands and to meet conservation system unit management objectives. In order to address these goals, two key research themes are recommended as the focus of 2005 Monitoring Program stock status and trends projects:

1. Monitoring of Salmon Abundance, Distribution and Biology

2. Assessment of Whitefish Species Stock Distribution

Given the importance of Chinook and chum salmon stocks to subsistence fisheries and recent stock declines, the Kuskokwim River Monitoring Program has primarily focused on these species. Although not as important for subsistence historically, coho and sockeye salmon harvests have been increasing in recent years, possibly due to the lower availability of chum and Chinook salmon. Harvests of sockeye salmon can exceed chum salmon in some years. Lowered abundance of some salmon species may also be affecting harvests of important nonsalmon species, such as whitefish. Federal and State managers as well as Alaska Native organization staff have requested that whenever possible salmon assessment and escapement projects should provide coverage of all salmon as well as non-salmon species.

Proposed funding options for 2005 expand coverage of a diversity of species important for subsistence while continuing efforts to enhance monitoring of salmon stocks. Available funds can support five of the six projects considered by the Technical Review Committee (**Table 4**). Projects in order of general priority are listed below. Those above the line are recommended for funding in 2005:

05-302	Kuskokwim River Chinook Telemetry	$117,600
05-304	Takotna & George River Weirs	$ 72,000
05-305	Continuing Kusko Chinook Genetic Baseline	$106,000
05-306	Kuskokwim In-season Salmon Harvest and ASL Sampling Monitoring	$ 73,100 ($45,000)[3]
05-301	Kuskokwim River Whitefish PIT Tagging	$ 95,000 ($40,000)[3]
05-303	DIDSON Sonar Upgrade for Aniak River	$ 98,700

[3] The TRC recommended funding projects 05-301 and 05-306 with modifications to the scope of work and reduced budgets. Recommended funding for these projects (as shown in the bracketed amounts) would require allocating available surplus funds from the Statewide FRMP budget.

Table 4. Kuskokwim River stock status and trends investigation plans submitted to the Fisheries Resource Monitoring Program for funding consideration and Technical Review Committee funding recommendations in 2005.

Project Number	Title	Recommendation TRC		Requested Budget ($000s) 2005	2006	2007
05-301	Whitefish PIT Tags	Yes with mod	[a]	$40.0		
05-302	Inriver Abundance of Chinook Salmon	Yes	[b]	$117.6	$346.2	
05-303	Aniak River Sonar Upgrade	No		$98.7		
05-304	George and Takotna River Weirs	Yes		$72.0	$79.0	$89.3
05-305	Genetic Stock ID of Chinook Salmon on the Kuskokwim	Yes		$106.0	$73.2	$18.7
05-306	Kuskokwim In-season Subsistence Salmon Harvest Data Collection	Yes with mod	[c]	$45.0	$45.0	$45.0
	Total			$479.3	$543.3	$153.0
	Funding Guideline			$277.0		
	TRC Recommendation			$380.6	$543.3	$153.0

[a] Project reduced in scope from $95K request.
[b] 2005 costs decrease from $346.2K to $117.6K due to redirection of funds from 04-306 Holitna River Escapement Monitoring.
[c] TRC recommends funding for ASL sampling only, reducing cost from $73.1K request.

Monitoring of Salmon Abundance, Distribution and Biology

The 2004 Monitoring Program provided a two to three year funding commitment for ten stock status and trends projects for the Kuskokwim River Region (**Table 1**.) This suite of projects, continuing in 2005 at a cost of $1.1 million, provides the core for salmon resource monitoring for the region. Complementary to these projects, the Technical Review Committee recommends continuation of funding for a Chinook salmon mark recapture project (05-302) employing radio telemetry to estimate abundance; and a first time contribution of Monitoring Program funding for continuation of the Takotna and George River weirs (05-304) to monitor escapement.

Managers are considering development or revision of Biological Escapement Goals (BEG's) for salmon stocks in the Kuskokwim River Region and must determine if weir counts provide a reliable index of escapement. Additional data points comparing escapement proportions of radio tagged salmon observed above the existing Kogrukluk River weir were needed to determine how well weir counts index Holitna River escapements. The weir data represents the longest continuous record of salmon spawning escapement for a Kuskokwim River spawning stock. Based on the available data from these projects, it appears that the weir provides a reliable index of Holitna River Chinook salmon escapement trends, but not chum salmon (Stroka and Brase, 2004[4]).

As a cost saving measure, the Technical Review Committee recommends implementation of a proposed change in Project 04-306, Holitna River Salmon Telemetry which was approved in

[4] Stroka, S.M. and Brase, A.L.J. 2004. Assessment of Chinook, Chum and Coho Salmon Escapements in the Holitna River Drainage Using Radio telemetry, 2001-2003. Fishery Data Series No. 04- . Division of Sport Fisheries, Alaska Department of Fish and Game. Fairbanks, Alaska.

2004. The KFRC recommended that project 04-306 be combined with a proposal to continue Kuskokwim River Chinook salmon telemetry (05-302.). Merging of the two proposals would allow the objectives for project 04-306 to be achieved for Chinook salmon while discontinuing chum salmon telemetry on the Holitna River in 2005 for a net savings of over $100,000. This savings is being applied to funding other Kuskokwim Region projects proposed for 2005.

The development of genetic stock identification markers for salmon which could be applied in mixed stock fisheries sampling has been a priority of the Monitoring Program. The availability of reliable stock markers offers significant potential to improve management and increase understanding in both the freshwater and marine phases of salmon life history. The Monitoring Program has funded development of genetic stock markers for both Chinook and coho salmon in the Kuskokwim Region. Proposal 05-305 is recommended for continuation of Chinook salmon genetic stock baseline development and a pilot study to field test stock markers. The investigator adequately addressed review comments regarding the proposed work. In addition, OSM received two favorable peer reviews of this project by outside genetics experts.

Project 05-306, Kuskokwim River in-season subsistence salmon harvest and subsistence salmon ASL data collection was given a high priority by both Federal and State management biologists. While the TRC recognized the hard work of Tribal organizations responsible for collecting in-season harvest data and ASL samples and the potential utility of this data, the TRC raised concerns about the long term use of the in-season harvest information to Federal subsistence management and poor past reporting performance. The TRC concern was specifically directed at the agency partner that had not addressed TRC questions about long term application of in-season subsistence harvest surveys to management. The TRC wanted these issues addressed before the in-season monitoring proposal was resubmitted for funding consideration in 2006. Consequently, the TRC recommended funding the ASL component of the investigation plan and reducing the budget from $73,100 to $45,000.

Project 05-303, Aniak River Sonar Project DIDSON Upgrade, is not recommended for funding. Although the investigator addressed concerns raised by the TRC in their review of the proposal, funding limitations and strategic priority preclude funding in 2005.

Assessment of Whitefish Species Distribution

Because of concerns over harvest levels, gear restrictions have been implemented for broad and humpback whitefish in Whitefish Lake near the village of Aniak. Monitoring Program funding (01-052) has supported the installation of weirs in the outlet stream connecting Whitefish Lake near Aniak with the Kuskokwim River. This study confirmed local knowledge and has raised questions about the distribution and abundance of whitefish stocks that concentrate in this lake during the summer. Seasonal migrations into and out of the lake were monitored. Low numbers of broad whitefish were observed.

An important component of the TRC's efforts to fund basic whitefish research and monitoring has been addressed by project 05-301 which proposes a pilot study to test the feasibility of using passive integrated transponder (PIT) tags to track and record information about whitefish life history, distribution and behavior. PIT tags have been used successfully to study other fish species and offer some significant advantages over other methods of tagging. As whitefish life

spans can be over 10 to 20 years and can include both freshwater and salt water residence, the PIT tag technology which can remain viable for decades and operates well in both fresh and salt water, is well suited for this work. Although funding is not available to fund the proposed project within the overall allocation provided for this data type, it is recommended that a reduced scope of work with a reduced budget of $ 40,000 be funded with any surplus funding available within the Statewide FRMP budget.

Recommendations for Funding – Harvest Monitoring/Traditional Ecological Knowledge Projects

The TRC forwarded three HM/TEK projects for Investigation Plan development in the Kuskokwim River Region (**Table 5**). Funding requested for these three projects totaled $186,078 in FY 2005.

Table 5. Kuskokwim River harvest monitoring and traditional ecological knowledge investigation plans submitted to the Fisheries Resource Monitoring Program for funding consideration and Technical Review Committee funding recommendations in 2005.

Project Number	Title	Recommendation TRC	Requested Budget ($000s) 2005	2006	2007
05-353	Nunivak Island Subsistence Fisheries	Yes	$ 61.0	$ 45.0	
05-355	Nunapitchuk Freshwater Fish Studies	No	$ 50.9	$ 50.1	
05-356	Kuskokwim Area Post-Season Subsistence Harvest Survey	Yes w/ modification	$ 74.2	$ 74.2	$ 74.3
	Total		$186.1	$169.3	$ 74.3
	Funding Guideline		$138.5		
	TRC Recommendation		$135.2	$119.2	$ 74.3

The TRC recommends funding two of the three projects. Those above the line are recommended for funding in 2005:

05-356	Kuskokwim Post Season Surveys	$ 74,200
05-353	Nunivak Island Subsistence Fisheries	$ 61,000
05-355	Nunapitchuk Fresh Water Fish Studies	$ 50,900

The total amount of funding needed to cover the proposed cost of the two recommended studies in 2005 is $135,206. This is slightly less than the amount of funding available under Federal Subsistence Board guidelines ($138,500). The TRC recommends that funds in excess of recommended projects be applied to stock status and trends projects within the region.

Project 05-356 is the highest priority project, as annual subsistence fish harvest estimates for communities in the Kuskokwim Fisheries Management Area are essential for management of Federal and state subsistence fisheries. This project will provide for the continued collection and analysis of subsistence salmon harvest information for communities in the Kuskokwim Fisheries Management Area, one of the largest subsistence salmon fisheries in the state. This project includes a strong partnership between the State, Kuskokwim Native Association (KNA), and Orutsararmiut Native Council (ONC). The project has some technical issues that need to be addressed in a revised IP prior to being funded.

Project 05-353, which proposes to gather information on the customary and traditional use of three target species (Pacific cod, red salmon, and Arctic grayling) by the residents of the Nunivak Island community of Mekoryuk, is also recommended for funding. The project addresses several key issues identified by the Councils, specifically gathering baseline information on important fisheries, documenting long term trends and sources of variation of important subsistence species, and documenting sources of variation that have occurred through time through the collection and analysis of TEK. The project provides an excellent model for capacity building and consultation, in an area entirely under Federal jurisdiction.

The TRC does not recommend project 05-355 for funding**.** While this project addresses issues of high strategic importance and includes a good capacity building component, most reviewers on the TRC found significant questions regarding methodology and therefore rated technical merit as low for this project. At issue are study design, protocol for community interviews, delegation of responsibilities, and analysis and disposition of TEK materials. In total, the majority of reviewers on the TRC concluded that a significantly revised IP would be required to address these concerns, and that this would best be accomplished in a subsequent submission during the next funding cycle.

However, this conclusion of low technical merit was not shared by all reviewers on the TRC. These reviewers emphasized the high strategic value of the study, and found compelling the urgency of addressing user conflicts and conservation shortfalls. These reviewers found that the IP provided sufficient detail on the methods and procedures to rate technical merit as at least medium. In total, a minority of reviewers on the TRC concluded that any revisions to the IP for project 05-355 could be accomplished during this (2005) funding cycle. Nonetheless, when put to a vote, the majority of the TRC made the recommendation to not fund this project.

The entire TRC recommends that the issue of harvest assessment and TEK collection and analysis regarding freshwater fish in the lower Kuskokwim River Region be identified as a high priority information need in the 2006 Call for Proposals.

Recommendations for Funding – Summary and Data Type Analysis

It is the responsibility of the TRC to develop the strongest possible regional monitoring plan for each region and across the entire state. To enable comparisons across regions, the TRC recommends a 2005 Monitoring Plan for the Kuskokwim Region in the following order of priority:

05-356	Kuskokwim Post Season Surveys	$ 74,200
05-302	Kuskokwim River Chinook Telemetry	$ 117,600
05-304	Takotna & George River Weirs	$ 72,000
05-305	Continuing Kusko Chinook Genetic Baseline	$ 106,000
05-306	Kuskokwim In-season Salmon Harvest Monitoring and ASL Sampling	$ 73,100 ($45,000)
05-353	Nunivak Island Subsistence Fisheries	$ 61,000
05-301	Kuskokwim River Whitefish PIT Tagging	$ 95,000 ($40,000)
05-303	DIDSON Sonar Upgrade for Aniak River	$ 98,700
05-355	Nunapitchuk Fresh Water fish Studies	$ 50,900

Projects recommended for funding total $515,800; $100,200 above the funding guidelines for this region. However, because projects recommended for funding in some regions did not meet the target for their region, there was sufficient funding available to fund Project 05-353 *Nunivak Island Cod, Red Salmon and Grayling Fisheries* and Project 05-301 *Kuskokwim River Whitefish PIT Tagging* as part of the 2005 Kuskokwim River Monitoring Plan. Together, these projects provide a compelling package that addresses important informational needs and there are sufficient monies elsewhere in the Monitoring Program to fund this package as recommended by the TRC.

05-301
Using PIT Tags to Monitor Movements of Kuskokwim River Whitefish.

Geographic Area: Kuskokwim River

Information Type: Stock Status and Trends

Principal Investigators: Ken Harper, U.S. Fish and Wildlife Service
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Co-Investigators: David Cannon, Kuskokwim Native Association
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Phone: (907) 675-4384

Cost:	**2005**	**2006**	**2007**
	$ 95,000	$ 0	$ 0

Issue

This proposed project evaluates using PIT (Passive Interrogator Transponder) tag technology to gather information on the distribution, movement, abundance and life history of whitefish in the Kuskokwim River drainage. Whitefish are an important subsistence resource in the Kuskokwim River drainage, yet little is known about the status and life history of the stocks. Information on movement patterns from brackish water rearing areas to upstream subsistence harvest areas such as Whitefish Lake and other large tundra lakes is unknown. This proposed project will develop techniques to use this technology to gather information needed to fill the existing data gap. PIT tag interrogation technology has been found to be more appropriate than radio telemetry as a monitoring tool for some fish populations and life history stages. PIT tags are less invasive to implant, less expensive and last longer (indefinitely) than radio tags allowing long term monitoring of individual fish. The use of this technology will improve our knowledge of whitefish movements in the Kuskokwim River. These data will be used by fishery managers and subsistence users to formulate actions required to maintain or rebuild these populations.

Objectives

1) Evaluate capture techniques including mobile Merwin nets, tangle nets, and gill nets to capture live whitefish in multiple habitats.

2) Evaluate PIT tag use in whitefish.

3) Develop and evaluate pit tag interrogator systems for use at the outlet of Whitefish Lake and on the Middle Kuskokwim River salmon mark and recapture fish wheels near Kalskag.

Methods

The Kenai FWFO and Kuskokwim Native Association propose to evaluate the use of PIT tags to monitor movements of Whitefish in the Kuskokwim River drainage. The first year of the project will consist of evaluating capture methods for obtaining large samples of whitefish from multiple habitats including Whitefish Lake, other lakes and riverine systems. Efficient methods and means to implant PIT tags in whitefish will be evaluated, coupled with tag retention and fish survival. PIT tag reader antennas will be constructed and tested in Kenai and shipped to Whitefish Lake. Antennas and antenna placements will be tested for detection efficiency at the outlet of Whitefish Lake. In addition we will use an existing sampling platform, the Middle Kuskokwim River fish wheels operated by ADF&G located near Kalskag to test detection efficiencies.

Products

A performance report and an annual report of the results would be written for the 2005 field season.

Experience of Investigators

Ken Harper, a fishery biologist with the Kenai Fish and Wildlife Field Office will be the project manager. Kenai Fish and Wildlife Field Office staff has operated the Whitefish Lake project since 2001; the Kwethluk River weir in 1992 and from 2000 to 2003; the Tuluksak River weir from 1991 to 1994 and from 2001 to 2003; the East Fork Andreafsky River weir from 1994 to 2003. Office staff has extensive experience in population investigations in Western, South Central, and Kodiak Alaska.

Partnerships/Collaboration

The U.S. Fish and Wildlife Service and the Kuskokwim Native Association (KNA) have been cooperatively conducting the Whitefish Lake study for the past three years. KNA has shown a keen interest in learning more about whitefish since local fishers have been concerned about the loss of broad whitefish from their traditional Whitefish Lake harvest area. Consultations have been ongoing with ADF&G about installing the PIT tag readers on the Kalskag and Birch Tree fish wheels.

Recommendation: *Fund with modification* to reduce scope of work and costs to not exceed $ 40,000 if Statewide FRMP funding surplus is available. Development of a Revised Investigation plan will be required.

Justification

The goal of this proposed project is to evaluate a method of gathering life history, population structure and long-term distribution information for broad whitefish, humpback whitefish and least cisco in the Kuskokwim River drainage. Field evaluations of PIT tag technology and

whitefish capture techniques will be conducted to gain a thorough understanding of limitations prior to application to a larger scale whitefish monitoring study. Methods and technology developed and tested potentially will provide needed tools for the study and management of whitefish and cisco populations in the Kuskokwim River as well as other fisheries in Alaska that support important subsistence uses.

Recommended for Funding

05-302
Inriver Abundance of Chinook Salmon in the Kuskokwim River, 2005-2006

Geographic Area: Kuskokwim River

Information Type: Stock Status and Trends

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Co-Investigators: Audra Brase, Salmon Research Supervisor
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Cost:	**2005**	**2006**
	$349,000[a,b]	$346,211[b]

Issue

The amount of information provided from current Kuskokwim River escapement monitoring and run assessment projects provide limited information to manage the Chinook salmon runs for sustained yield. An estimate of total inriver Chinook salmon abundance is needed to evaluate harvest strategies and effectively manage the Kuskokwim River fisheries to ensure subsistence needs are met.

Objectives

1. Estimate the abundance of Chinook salmon in the Kuskokwim River for all waters upstream of Kalskag; and,

2. Estimate age, sex, and length compositions of Chinook salmon in the Kuskokwim River upstream of Kalskag.

[a] Budget for 2005 does not include $231.4 from the Holitna River study (FIS 04-306) that could be redirected to this project (see cover letter). If included, costs for 2005 would be reduced to $117.6 K.

[b] Costs for 2005 and 2006 include funds for personnel from this project to independently operate fish wheels near Kalskag. These costs may be reduced if the current mark-recapture study performed by Commercial Fisheries Division continues through 2006 (see cover letter).

3. Estimate the abundance of Chinook salmon escaping into the Holitna River drainage by proportional expansion of the Kogrukluk River weir count.

4. Document Chinook salmon spawning locations within the Kuskokwim River drainage.

Methods

This study will estimate the inriver abundance of Chinook salmon on the Kuskokwim River upstream of Kalskag using mark-recapture techniques. In this type of mark-recapture experiment there are two events: 1) the marking event, when fish are captured and tagged; and 2) the recapture event, when fish are sampled again to identify the ratio of tagged to untagged fish. During the marking event of this study, Chinook salmon will be captured using large-mesh drift gillnets and fish wheels at sites near Kalskag. Approximately 500 Chinook salmon will be radio-tagged (marked) with electronic transmitters. Radio-tagged fish will be secondarily marked with an external plastic "spaghetti" tag to facilitate identification of the radio-tagged fish. The tagged Chinook salmon will be tracked by a series of stationary radio-tracking stations positioned on various tributaries and along the mainstem river. Radio-tagged fish will also be located through aerial-tracking surveys of the drainage. The recapture portion of this study will be made up of Chinook salmon passing through the weirs on the George, Kogrukluk, Tatlawiksuk, and Takotna rivers. All migrating Chinook salmon (marked and unmarked) will be counted through the weirs by ADF&G and Kuskokwim Native Association (KNA) staff. Radio-tagged fish migrating through the weirs will be identified from tracking stations positioned at each weir. A sample of the Chinook salmon passing through each weir will be sampled for age, sex, and length data to aid in performing statistical analyses. After all data is collected, it will be edited for accuracy and statistical tests will be performed to accomplish project objectives.

Products

Annual project findings will be reported in an ADF&G FDS (fisheries data series) report distributed to fisheries managers, researchers, local community groups and other interested parties. Additional hard copies will be available from ADF&G. The report will also be available electronically on the ADF&G web site.

Experience of Investigators

The ADF&G-Sport Fish Division (SFD) has a well developed process of fisheries research planning, execution, and reporting. Confidence in the ability to complete the project objectives and tasks is high. Lisa Stuby will be the primary investigator for this study. Lisa is a salmon research biologist for ADF&G-SFD-Region III and she has her M.S. in Oceanography from UAF. Lisa has been the project leader for this study since 2002. Audra Brase is the salmon research supervisor for ADF&G-SFD-Region III and she has her M.S. in Fisheries from UAF. Audra has over seven years of experience working with rural Alaska fisheries management and research issues.

Partnerships/Collaboration

The proposed study will be performed in cooperation with the KNA and ADF&G Commercial Fisheries Division. This project directly promotes interaction between KNA and ADF&G and supports a positive working relationship between a major user group and the primary management agency on the Kuskokwim River. To expose more rural residents to the career field of fisheries biology; a local resident will be hired as a fisheries technician and the project will host local high school and college interns throughout the season.

Recommendation: *Fund*

Justification

Development of reliable Kuskokwim River salmon abundance estimates is viewed as a high priority data need. These estimates are being made through a coordinated effort by Alaska Native, State and Federal organizations. This project continues the development of estimates of annual Chinook salmon abundance for the Kuskokwim River. This study was initiated in 2002 and had a three-year funding commitment through 2004. Proposed IP 05-302 requests two years of continued funding.

05-303
Aniak River Sonar Project DIDSON Upgrade

Geographic Area: Kuskokwim

Information Type: Stock Status and Trends

Principal Investigators: Carl T. Pfisterer
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Cost: **2004**
$ 98,745

Issue

This project addresses Stock Status and Trends concerns by improving the quality of the data produced by the Aniak River sonar project (one of the largest producers of chum salmon in the Kuskokwim River drainage), which is used to manage the Kuskokwim River subsistence and commercial chum salmon fisheries. In a larger context, improving the quality of the escapement estimate will enhance comprehensive research efforts examining this mixed stock fishery and relative contributions from various tributaries of the Kuskokwim River.

Objectives

Improve the accuracy of fish passage estimates generated by the Aniak River sonar project though the use of DIDSON sonar technology. The two primary objectives of this project are to:

1. Purchase a DIDSON to complement the one purchased testing at the project in 2003.

2. Provide daily abundance estimates and confidence intervals of fish passage at the Aniak River sonar project.

Methods

Sonar data will be collected four hours on, four off, 7 days a week for the duration of the study. This will provide a total of 12 hours of data per bank. The counts will be expanded for the fraction of the day sampled to estimate daily passage.

Products

Results of this study will be presented in a Department of Fish and Game Regional Information Report that will be widely available. Project results from the transition will be presented to other

agencies at Kuskokwim area agency meetings. Daily passage estimates will be provided to the Kuskokwim River Working Group meetings and used for management decisions.

Experience of Investigators

Carl Pfisterer has been a fishery biologist working on sonar projects with the Alaska Department of Fish and Game for five years. Mr. Pfisterer's graduate studies focused on sonar with courses in digital signal processing, wave theory, and fisheries acoustics. As the AYK Regional Sonar Supervisor, Mr. Pfisterer provides project oversight for four sonar projects on the Yukon and Kuskokwim rivers.

Partnerships/Collaboration

The Aniak Sonar project operates in coordination with several other projects and groups.

- AVCP provides a technician and funds to assist with the project.
- KNA provides logistical assistance and has provided an intern to assist the project at various times.
- ADF&G, Sport Fish Division uses tag recovery data collected at this site and has expressed a considerable interest in species discrimination that DIDSON may provide.
- ADF&G, Commercial Fisheries Division uses tag recovery data collected at this site and also has interest in species discrimination.

In addition, local community members often visit the site to learn about our operations and to share traditional knowledge.

Recommendation: *Do not fund.*

Justification

The Aniak River is an important chum salmon monitoring project. Reliable and accurate escapement estimates are critical to evaluate the impact of management actions on this stock. Upgrading the Biosonics sonar system to DIDSON technology would likely improve the accuracy of the estimate. However, the limited availability of FRMP funds to support other important fisheries monitoring projects in the Kuskokwim Region will not allow funding at this time. It appears that inventories of side scan sonar equipment potentially available to the investigator are adequate to meet the immediate needs for monitoring and assessment of Aniak River salmon stocks. Application of DIDSON technology for species apportionment although promising is still being developed and tested.

05-304
George and Takotna River Weirs

Geographic Area: Kuskokwim River

Information Type: Stock Status and Trends

Principal Investigators: Douglas B. Molyneaux, Alaska Department of Fish and Game
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Co-Investigators: Sara Gilk and Rob Stewart, Alaska Department of Fish and Game
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Cost:

2005	2006	2007
$ 71,979	$ 78,973	$ 89,257

Issue

Salmon populations of the George and Takotna Rivers contribute to subsistence fisheries within the Yukon Delta National Wildlife Refuge. Weak runs in recent years have resulted in the classification of Kuskokwim River Chinook and chum salmon as Stocks of Concern by the Alaska Board of Fisheries. George and Takotna River weirs are part of an array of projects developed in recent years to monitor the distribution, abundance, and quality of salmon escapements in the Kuskokwim River drainage. Information collected at these weirs is used for in-season management of Kuskokwim River subsistence, commercial, and sport fisheries. Development of Donlin Creek mine is expected to intensify subsistence and recreational use of George River salmon populations. Takotna River weir is the only weir project in the upper Kuskokwim River area used for assessing escapement of these genetically distinct salmon stocks.

Objectives

1. Determine daily and total annual escapements of Chinook, chum, and coho salmon to the Takotna River upstream of the community of Takotna during the target operational period of 24 June to 20 September.

2. Determine daily and total annual escapements of Chinook, chum, and coho salmon to the George River during the target operational period of 15 June to 20 September.

3. Estimate age-sex-length (ASL) composition of total Chinook and chum salmon escapements to Takotna and George Rivers from a minimum of three pulse samples collected from each third of the run, such that simultaneous 95% confidence intervals of age composition in each pulse are no wider than 0.20 ($\alpha = 0.05$ and $d = 0.10$);

4. Estimate age-sex-length (ASL) composition of total coho salmon escapements to Takotna and George Rivers from a minimum of three pulse samples collected from each third of the run, such that simultaneous 95% confidence intervals of age composition in the total annual escapements are no wider than 0.20 ($\alpha = 0.05$ and $d = 0.10$);

5. Serve as platform to collect data for related fisheries projects

Methods

Resistance-board fish weirs will be operated on the George and Takotna Rivers to monitor salmon escapement into spawning grounds upstream. A live trap, incorporated into each weir will allow crews to collect age, sex, and length samples from migrating salmon, and recover tag data in support of *Kuskokwim River Salmon Mark/Recapture Project*. Provisions will also be made to allow for boat passage over the weir and for safe downstream passage of fish. Local technicians hired by Kuskokwim Native Association (KNA) and Takotna Tribal Council (TTC) will operate the weirs along with ADF&G/CF biologists and technicians funded under this proposal.

Products

1. Project Performance Reports 31 May 2006, 2007, and 2008

2. Annual Project Reports 31 May 2006 and 2007

3. Final Report 31 May 2008

Investigator Experience

Doug Molyneaux is the Kuskokwim Area Research biologist for ADF&G/CF and has a Master of Science degree in Fisheries Science; completed numerous annual performance and project reports associated with cooperative salmon stock assessment projects and OSM/FIS grants.

Sara Gilk is the Assistant Kuskokwim Area Research biologist for ADF&G/CF and has a Master of Science degree in Fisheries Science.

Rob Stewart is a Fish and Wildlife Technician IV for ADF&G/CF and the weir specialist for the Kuskokwim Area, and AYK Region.

Partnership/Collaboration

Both the George and the Takotna River weirs are established cooperative projects involving ADF&G/CF, KNA and TTC.

Recommendation: *Fund*

Justification

The George and Takotna River weirs provide important information to in-season subsistence fishery managers. Continuation of the weirs is important for monitoring escapement of Chinook, chum and coho salmon in the middle and upper Kuskokwim River.

Recommended for Funding

05-305
Genetic Stock Identification of Kuskokwim River Chinook Salmon

Geographic Area: Kuskokwim

Information Type: Stock Status and Trends

Principal Investigators: William Templin, Christian Smith, Doug Molyneaux and Lisa Seeb
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Cost:	**2005**	**2006**	**2007**
	$105,952	$ 73,151	$ 18,663

Issue

Kuskokwim River Chinook salmon have been identified as a "stock of concern" due to the chronic inability to maintain expected harvest above escapement needs despite the use of specific management and conservation measures. However the efficacy of these measures is uncertain without knowing the harvest of Kuskokwim River stocks in subsistence and commercial fisheries in the entire Kuskokwim Management Area (KMA). Previous investigation of the genetic population structure of Chinook salmon within the KMA, using three different types of genetic markers found patterns of population divergence and identified at least four groups: 1) Goodnews/Kanektok, 2) Lower Kuskokwim (from the Eek River upstream to the Hoholitna River), 3) Middle Kuskokwim (the Stony, Cheeneetnuk and Tatlawiksuk rivers), and 4) Upper Kuskokwim (the Takotna River and Pitka Fork). Genetic stock identification methods can provide information concerning the origins of fish harvested in the KMA; critically important information for an effective, sustainable management program. The existing baseline of genetic markers provides adequate coverage of the spawning aggregates within the Kuskokwim River, but only moderate coverage of the populations outside of the river. We propose to refine our analyses by increasing sample sizes and geographic coverage of the genetic baseline and to begin mixed stock identification applications in KMA fisheries.

Objectives

1. To increase sample sizes and expand collections of Chinook salmon in the KMA.

2. To expand the set of genetic loci to include additional microsatellite and SNP (single nucleotide polymorphism) markers.

3. To analyze the genetic population structure and refine mixed stock analysis.

4. To conduct a pilot study of salmon harvested in mixed stock fisheries, specifically the Bethel test fishery, the subsistence fishery in the Bethel area and the W-4 commercial fishery.

Methods

Baseline tissue sampling will partner with existing projects in the KMA to collect samples. Chinook salmon will be sampled at weirs on the Takotna, Tatlawiksuk, Kogrukluk, George, Tuluksak, Kwethluk, Kanektok and Goodnews rivers. Sampling from radio-tagged Chinook salmon will provide additional baseline samples from locations that do not have weirs. In addition, samples will be taken by subsistence fishers on the Little Tonzona, Eek, and Kisaralik rivers, and on Pitka's Fork, by volunteers on the Arolik River, and by sport fishers on the mainstem Goodnews River. Target sample sizes are set to provide baseline sample sizes of 200 individuals when combined with previously collected samples. Approximately 15 of the most information microsatellite loci developed for the Yukon River and the Pacific Salmon Commission coastwide baseline will be surveyed as well as additional SNP loci developed by ADF&G. Population structure will be investigated using standard population genetics techniques, and mixture analyses will be refined through simulation. Mixture samples will be collected from the Bethel Test Fishery, the Bethel subsistence fishery, and the District W-4 commercial fishery to estimate region of origin.

Products

Annual and final reports will be submitted to the funding coordinator. A manuscript of final results will be submitted to a peer-reviewed journal, and results will be presented to the American Fisheries Society and local user groups.

Experience of Investigators

William Templin, ADF&G Fisheries Geneticist, has more than ten years of experience with the application of genetic information to fishery issues and will manage the project, coordinate statistical analyses and evaluate mixture models. Christian Smith, Fisheries Geneticist, will supervise the collection of the DNA data. Douglas Molyneaux, Area Research Biologist for the KMA since 1989, will arrange for sample collection. Lisa Seeb, ADF&G Principal Geneticist since 1990, will assist with project management and report preparation. The ADF&G Gene Conservation Laboratory has extensive experience developing methods of genetic stock identification for salmon and has developed several applications of identifying the origin of catches in complex fisheries.

Partnerships/Collaborations

Samples will be taken at weirs in the KMA in cooperation with the following government and local organizations: ADF&G, Kuskokwim Native Association, Native Village of Kwinhagak, Organized Village of Kwethluk, Orutsaramuit Native Council, Takotna Tribal Council, Tuluksak Tribal Council, and USFWS. Chinook salmon will be sampled from subsistence harvest on the

Little Tonzona, Eek, and Kisaralik rivers and the Pitka Fork of the Salmon River. The Arolik River will be sampled by Willard Church (Native Village of Kwinhagak) and the mainstem of the Goodnews River will be sampled by area sportfish guides. Chinook salmon will be sampled as part of the radio telemetry tagging projects and fisheries technicians from ADF&G and ONC will sample the Bethel test fishery. The college intern/technician position in the ADF&G Gene Conservation Laboratory will continue in coordination with KNA.

Recommendation: *Fund*

Justification

This proposed investigation plan builds on early work to improve and expand genetic stock markers for Kuskokwim Chinook salmon. In addition, the study would initiate the testing of these markers within mixed stock fisheries and run assessment projects. Potential applications of stock markers to fishery management of Chinook salmon stocks include: 1) determination and monitoring of stock and stock group specific exploitation rates in mixed stock fisheries, 2) improved run forecasting and escapement goal development, and 3) providing the basis for evaluating genetic processes operating in the population (i.e. effective population size, isolation rates etc).

05-306
Kuskokwim River In-season Subsistence Salmon Harvest Data Collection Continuation

Geographic Area: Kuskokwim River

Information Type: Stock Status and Trends

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Cost:

2005	2006	2007
$ 73,079	$ 79,177	$ 88,017

Issue

The *Kuskokwim River In-season Subsistence Salmon Harvest Data Collection* project has two components:

1. In-season interviews with subsistence salmon fishers to assess their progress towards achieving harvest needs; and

2. Collection of biological information from subsistence caught Chinook salmon to characterize the unique age, sex and length (ASL) composition of the subsistence harvest, which is a specific subset of the total Chinook salmon run to the Kuskokwim River.

Fishery managers will use the in-season subsistence salmon harvest data when assessing stock status and making in-season management decisions concerning the commercial and subsistence fisheries. The age sex and length (ASL) composition of the subsistence Chinook harvest is a unique subset of the ASL composition of the Chinook salmon run, which differs from the ASL compositions of the escapement due to the selectivity of the harvest methods.

Objectives

1. Conduct weekly interviews with Bethel Area subsistence salmon fishers in June, July and early August to determine the adequacy and quality of the harvest.

2. Characterize the annual ASL composition of Chinook salmon in the Kuskokwim River subsistence harvest.

3. Characterize and compare the annual ASL composition of Chinook salmon in the Kuskokwim River subsistence harvest by geographic area (lower, middle and upper Kuskokwim River).

4. Characterize the annual ASL composition of Chinook salmon in the Kuskokwim River subsistence harvest by gear type (e.g., gillnets with mesh of 6 inches or smaller, gillnets with mesh between 6 and 8 inches, gillnets with mesh of 8 inches or larger, rod and reel, fishwheel).

5. Characterize and compare the annual ASL composition of Chinook salmon in the lower Kuskokwim River subsistence harvest by temporal strata (i.e., fish harvested for the early, middle and late portions of the run).

Methods

Orutsararmuit Native Council (ONC) will hire two fisheries technicians in consultation with Alaska Department of Fish and Game (ADF&G) staff to conduct weekly in-season interviews with subsistence fishers in the Bethel Area. The information will be used along with other information to guide in-season management decisions.

In addition, the ONC technicians and ADF&G staff will recruit subsistence fishers from throughout the Kuskokwim River drainage to collect ASL data from their subsistence harvest of

Chinook salmon. The data will be used to estimate the ASL composition of the Chinook salmon harvest of the Kuskokwim River subsistence fishery.

Products

1. Weekly written summaries of interviews with subsistence salmon fishers from the Bethel area will be provided to salmon management entities of the Kuskokwim River Region from approximately the second week of June through late August for use in in-season management.

2. Description of the annual ASL composition of Chinook salmon harvest in the Kuskokwim River subsistence fishery.

Experience of Investigators

Douglas B. Molyneaux is the Kuskokwim Area Research Biologist III for ADF&G/CF. and has Master of Science degree in fisheries science. Mr. Molyneaux has worked with Alaska salmon management and research since 1979, and in the Kuskokwim Area since 1989.

Greg Roczicka has lived in the Kuskokwim Area for over 30 years and has extensive subsistence fishing experience and knowledge of natural resource management issues. Mr. Roczicka became ONC Director of their Natural Resource Department 2001.

Tracie Krauthoefer is a Subsistence Resource Specialist with ADF&G/SD and is working to complete her MA in Anthropology. She has been working in the Kuskokwim Area since September of 2003, but has worked throughout the State of Alaska on various social science projects.

David L. Folletti is a Fisheries Technician IV with ADF&G/CF, and will be responsible for directing field operations and post-season ASL processing.

Partnerships/Collaboration

This project is a collaborative effort between ONC, ADF&G/CF, ADF&G/SD.

Recommendation: *Fund with modification* to reduce scope of work to ASL sampling only and costs to approximately $ 45,000. Development of a Revised Investigation plan will be required.

Justification

Separating the ASL and harvest monitoring componets of the proposal would strengthen and help clarify the long term application of each component.

Additional development of the study design for the subsistence ASL sampling program is requested. The revised IP should explain specifically how this information could be used to address subsistence management issues i.e. effect of gear size on sex ratios and age classes. Plans for adding genetic stock biology samples should also be addressed in coordination with project 05-305.

A number of questions remain about the in-season harvest monitoring component of this invesigation plan i.e. how could this program be used to estimate subsistence harvest levels by gear type and date so that harvest rates on various segments of the Chinook salmon run can be evaluated. Prior to submitting future requests for funding in-season harvest monitoring surveys, more work is needed on methods development which will require collaboration between fisheries managers who have specific questions and social scientists who have expertise in developing survey instrutments and interpreting the data. Attention should be given to the findings and recommendations of the *Statewide Subsistence Fisheries Harvest Monitoring Strategy Final Report.*

Recommended for Funding

05-353
Nunivak Island Subsistence Cod, Red Salmon and Grayling Fisheries – Past and Present

Geographic Area: Kuskokwim

Information Type: Harvest Monitoring and Traditional Ecological Knowledge

Principal Investigators: Robert M. Drozda, Consultant
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Co-Investigators: Howard T. Amos, Executive Director
Nuniwarmiut Piciryarata Tamaryalkuti, Inc.
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Cost:	**2005**	**2006**	**2007**
	$ 61,000	$ 45,000	$ 0

Issue

Information on the traditional and customary use of Pacific cod, red salmon and Arctic grayling by Nunivak Islanders as well as availability and locations of these subsistence resources is poorly documented. The Yukon-Kuskokwim Regional Advisory Council has identified long term trends and sources of variation of important subsistence species as an information need. This project addresses these concerns and will provide baseline data for comparative future studies.

Objectives

1. Accurately record and map 11 traditional cod fishing areas.
2. Survey fish campers regarding codfish catch at various locations.
3. Survey commercial halibut fishers who use the Mekoryuk fish plant regarding cod by-catch.
4. Conduct literature/internet search relevant to Nunivak Pacific cod, red salmon and grayling.
5. Review Nunivak oral history records, develop context for cod, grayling and red salmon.

6. Identify archives and museums with holdings relevant to Nunivak Island.

7. Conduct interviews and/or surveys with key informants on the historic and contemporary use of the Pacific cod, red salmon and grayling subsistence economy of Nunivak Island.

8. Write a narrative report including a comprehensive bibliography.

9. Publish results and report project design and progress on NPT, Inc website (www.nunivak.org).

10. Prepare draft text for local school natural/cultural resource curriculum.

Methods

Conduct background research using standard library, archival and internet search procedures. Develop survey questionnaire in consultation with subsistence specialists and fisheries biologists. Survey fishers at fish camps and Mekoryuk processing plant. Travel by boat to fishing locations and document sites with GPS and depthfinder. We will partner with the UAF Kuskokwim Campus, NIMA Corporation and USFWS Yukon Delta Refuge at the Ellikarrmiut (Nash Harbor) Science camp in developing research that is useful to students and scientists is successive years.

Products

-Oral history tapes and/or survey results and research findings for deposit in the University of Alaska, Fairbanks Archives and local NPT repository.

-Narrative report that summarizes methods and study findings with an interpretation of the results.

-Draft text for Nuniwarmiut School natural resource curriculum.

-Web based progress reports and results at www.nunivak.org.

-Maps of Nunivak Island showing cod, red salmon, and graying fishing areas and major fish camps.

Experience of Investigators

Robert Drozda has 18 years of experience working with the residents of Nunivak Island on matters of historic preservation, cultural heritage and Native language continuance. He has conducted research into historical places and cemetery sites, assisted in the documentation of geographic place names, and developed and maintains the Nunivak.org website.

Howard Amos is a Native Nunivak Islander (Cup'ig Eskimo). He is an advocate and practitioner of the traditional knowledge, skills, and values of his elders, as well as a subsistence user and commercial fisher in the Bering Sea. Currently the Director of NPT Inc., the village cultural heritage programs office, Amos serves on several boards in the community and region including the Nuniwarmiut School Board, IRA Council and Coastal Villages Region Fund Board of Directors.

Partnerships/Collaboration

This project will proceed with the endorsement of the Native Village Mekoryuk IRA Council. Interviews and/or surveys will be conducted by local residents and shared with community members. Results of the study will be distributed to the University of Alaska Rasmuson Library for public access and via the world wide web. Work will be conducted in conjunction with ongoing village based cultural, natural history and Native language preservation projects and will partner with University of Alaska Kuskokwim Campus, Lower Kuskokwim School District, NIMA Village Corporation, and commercial fishery corporations operating in the Bering Sea.

Recommendation: *Fund*

Justification

This project has tremendous support from numerous entities, and investigators have a proven track record of working together on successful projects. The project is technically sound, methods are appropriate for the project, and most of the ten objectives are clear and measurable. The project focuses on three important subsistence species, is supported by the Federal fisheries manager, and could provide important baseline information in an area about which little is known. Investigators need to address the applicability of project findings to Federal subsistence fisheries management in their project implementation and final report. Given the abilities of the investigators, the scientific and technical merit of the proposal, and the strong capacity building of this Investigation Plan, it is likely that this project will strengthen the social science component of the Monitoring Program.

Not Recommended for Funding

05-355
Nunapitchuk Freshwater Fish Studies

Geographic Area: Lower Kuskokwim River, Johnson River in Yukon-Delta NWR

Information Type: Harvest Monitoring and Traditional Ecological Knowledge

Principal Investigators: Tracie Krauthoefer
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Co-Investigators: Jennifer Hooper
Association of Village Council Presidents
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Phone: (907) 459-7260; Fax: (907) 452-1668
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Cost:	**2005**	**2006**
	$ 50,872	$ 50,077

Issue

Communities in the Johnson River/Nunavakpak Lake area, including Nunapitchuk, are highly dependent on freshwater fish. Previous research indicates freshwater fish comprise the largest portion of the total subsistence fish diet of residents of Nunapitchuk (Andrews 1989). This dependence is likely to increase should current declines in Kuskokwim salmon stocks persist. Nunapitchuk, the primary study village, lies within Yukon-Delta NWR. For several years, residents of the study area have expressed concerns over declining fish populations (especially whitefish). Very little documentation of ecological knowledge exists regarding population dynamics, life histories and critical habitat of fresh water species within this region. The project will collect harvest data for non-salmon species as well as TEK on changing fish populations, fish health, abundance, distribution and availability. The primary species of interest will be broad whitefish, humpback whitefish, least cisco, lamprey, burbot, blackfish, sheefish and pike. Key respondents will also provide information on changes and observed effects caused by beavers.

Objectives

1. Document the subsistence method, timing, and harvest of non-salmon fish species by Nunapitchuk households.

2. Document the local knowledge of 8-10 Nunapitchuk residents regarding freshwater fish populations and subsistence use and patterns.

3. Compile and enter collected survey data into ADF&G's Standard Community Profile Database.

4. Create a written final report and professional quality poster summarizing project for presentation.

5. Increase capacity building in the tundra villages through local hire of household survey technicians and translators. Increase capacity of AVCP to conduct social science research through their direct participation in project.

Methods

The harvest assessment will consist of a household survey of all households in Nunapitchuk. The survey will be conducted twice in two years. Key Respondent interviews will be conducted the first year using a semi-directed interview guide. Results of both methods will be included in the final report and entered into the Division's Community Profile Database.

Products

The final report containing results from both the household survey and the key respondent interviews will be published in the Division of Subsistence technical paper series. Additionally, a professional-quality poster for display at meetings and educational outreach events will be produced.

Experience of Investigators

Tracie Krauthoefer is a Subsistence Resource Specialist with the Alaska Department of Fish and Game Division of Subsistence. Although new to the Division, she has worked in the State of Alaska on a variety of anthropological projects since 1997, including linguistic research involving Athabascan subsistence practices and wildlife management. Jennifer Hooper is Natural Resources Deputy Director for the Association of Village Council Presidents, a not for profit tribal organization encompassing 56 federally recognized tribes throughout the Yukon Kuskokwim Delta region. Ms. Hooper has been involved in numerous fisheries investigation projects in the Kuskokwim region.

Partnerships/Collaboration

This project will employ locally hired village-based technicians to conduct the household surveys and assist as translators. Additionally, Nunapitchuk IRA Council will be involved in identifying subject experts for key respondent interviews and in hiring local technicians.

Recommendation: *Do not fund*

Justification

This project addresses issues of high strategic importance, and includes a good capacity building component. However, most reviewers on the TRC found significant questions regarding methodology and therefore rated technical merit as low for this project. At issue are study design,

protocol for community interviews, delegation of responsibilities, and analysis and disposition of TEK materials. In total, the majority of reviewers on the TRC concluded that a significantly revised Investigation Plan would be required to address these concerns, and that this would best be accomplished in a subsequent submission during the next funding cycle.

However, this conclusion of low technical merit was not shared by all reviewers on the TRC. These reviewers emphasized the high strategic value of the study, and found compelling the urgency of addressing user conflicts and conservation shortfalls. These reviewers found that the IP provided sufficient detail on the methods and procedures to rate technical merit as at least medium. In total, a minority of reviewers on the TRC concluded that any revisions to the IP for project 05-355 could be accomplished during this (2005) funding cycle.

When put to a vote, the majority of the TRC made the recommendation to not fund this project. The entire TRC recommends that the issue of harvest assessment and TEK collection and analysis regarding freshwater fish in the lower Kuskokwim Region be identified as a high priority information need in the 2006 Call for Proposals.

Recommended for Funding with Modification

05-356
Kuskokwim Area Post-Season Subsistence Salmon Harvest Surveys, 2005-2007

Geographic Area: Kuskokwim River Drainage, Yukon-Delta NWR

Information Type: Harvest Monitoring and Traditional Ecological Knowledge

Principal Investigators: Tracie Krauthoefer
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Co-Investigator: Greg Roczicka
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Co-Investigator: Dwayne Hoffman
Kuskokwim Native Association, Aniak
Phone: (907) 675-4384

Cost:	**2005**	**2006**	**2007**
	$ 74,206	$ 74,206	$ 74,316

Issue

This project will continue the annual subsistence salmon harvest surveys in the Kuskokwim Fisheries Management Area for the year 2005, 2006, and 2007.

Objectives

1. Determine the total number of households in the Kuskokwim Fisheries Management Area and identify the number of households that harvested salmon as well as the number of households that did not harvest salmon for subsistence use. Update the community household lists and mail households salmon harvest calendars the following season.

2. Estimate the total number of Chinook, sockeye, chum, and sockeye salmon harvested for subsistence use by residents in communities throughout the Kuskokwim Area and also non-salmon species harvested by residents of Aniak and Bethel

3. Identify the types of fishing gear used by residents and collect qualitative information that will be helpful in identifying how fishers characterize subsistence fishing success for the 2004 season.

Methods

Methods used for carrying out this work will follow procedures established by the ADFG/SD to conduct subsistence fish harvest surveys in the Kuskokwim Area during 2002 and 2003. Currently ADF&G is working to revise methods, to move from a census to a stratified sample design. A new operational plan will be written and submitted to FIS when the revision is complete.

Products

The results of the surveys will be presented in a final summary report. The report will be available to the public, the advisory Committees, the federal Regional Advisory Councils, the US Fish and Wildlife Service and other agencies and public that desires it. Subsistence salmon harvest calendars and an annual summary letter will be distributed to subsistence fishing households in the spring of 2006, 2007, and 2008.

Experience of Investigators

Tracie Krauthoefer is a Subsistence Resource Specialist with the Alaska Department of Fish and Game Division of Subsistence. Although new to the Division, she has worked in the State of Alaska on a variety of anthropological projects since 1997, including linguistic research involving Athabascan subsistence practices and wildlife management. Greg Roczicka, Natural Resources Director for ONC has been conducting the Bethel portion of the survey for 4 years now, and is involved in a number of Kuskokwim fisheries resource projects. Dwayne Hoffman, also new to his position, has worked on a number of weir projects and assisted in conducting the 2003 surveys in Aniak.

Partnerships/Collaboration

The ADFG/SD, KNA and ONC have cooperated to successfully complete this project during 2002 and 2003 and are accustomed to working together to collect subsistence fisheries information using the methods described in this investigation plan. This project continues the joint efforts to collaborate to collect critical subsistence fisheries information and encourages ongoing involvement by local tribal entities.

Recommendation: *Fund with modification*

Justification

This project addresses an issue of high strategic priority, in an area with considerable federal jurisdiction. However, the Investigation Plan (IP) has some technical issues that need to be addressed in a revised IP. In addition, investigators' roles and responsibilities need to be clearly articulated, and some of the investigators need to affirm their ability to participate in the project. Investigators should work with OSM staff on the methodological issues, and submit a revised IP for OSM approval.

2005 DRAFT FISHERIES RESOURCE MONITORING PLAN SOUTHWEST REGION OVERVIEW

ISSUES AND INFORMATION NEEDS

Original guidance for the Fisheries Resource Monitoring Program (Monitoring Program) was provided by the Federal Subsistence Board and outlined in the *Operational Strategy for Information Management*[1]. Since that time, Regional Advisory Councils (Councils), including the Bristol Bay-Chignik and Kodiak-Aleutians Councils, have identified important issues and information needs for their regions, with review and update on an annual basis. A list of the issues and information needs for each region was included in the 2004 document prepared for solicitation of 2005 project proposals[2]. For the Southwest region, Councils have identified that salmon fisheries are most important, although fisheries for other species are also important in terms of information needed for Federal subsistence fisheries management. A total of 50 issues and information needs has been identified for the Southwest region, 26 for the Bristol Bay-Chignik and 24 for the Kodiak-Aleutians areas. Those issues that best address the five investigation plans under consideration for funding in 2005 are:

- Assessment and monitoring of Lake Clark stocks;
- Distribution and abundance of sockeye salmon spawners in Chignik area, with emphasis on late-run Clark River stocks and West Fork spawners;
- Assessment and monitoring of coho salmon runs to Perryville area streams between Stepovak Bay and Chignik;
- Development of improved salmon spawning escapement assessment methods, particularly within Togiak River drainage;
- Monitor status of Lake Clark whitefish stocks;
- Documenting subsistence fishing activities within Federal Conservation Units, including improving harvest monitoring for Dolly Varden and freshwater resident fishes;
- Effects of sport fishing activities and harvests on subsistence fishing activities and harvests within Togiak area drainages;
- Effects of commercial fishing activities and harvests on subsistence fishing activities and harvests;

[1] Krueger, C., Brelsford, T., Casipit, C., Harper, K., Hildebrand, I., Rost, P., Thompson, K., and Jones, L. 1999. *Federal Subsistence Fisheries Management: Operational Strategy for Information Management. Report to the Federal Subsistence Staff Committee by the Sub-Committee for the Development of a Blueprint for Interagency Functions, Roles, and Responsibilities.* 122 p.

[2] Office of Subsistence Management. 2004. *Issues and Information Needs, Federal Subsistence Fisheries, 2005 Fisheries Resource Monitoring Program.* 14 p.

- Documenting traditional knowledge of subsistence practices, including harvest methods, and uses.

To ensure that the Monitoring Program addresses the highest priority information needs for Federal subsistence fisheries management, the Office of Subsistence Management began a strategic planning process this year to build on the work done by the Councils. Facilitated workshops for the Southcentral (Copper River and Prince William Sound) and Southwest (Bristol Bay-Chignik) regions were held in April and May with representatives of Federal and State agencies, academia, Alaska Native and rural organizations, and affected Councils. Participants at each workshop identified fisheries units for their region; developed goals, objectives, and information needs for each fishery unit; and began the prioritization process for fishery units and goals, objectives and information needs. A draft workshop report[3] is under review at this Council meeting. This fall, follow up workshops will be held for each of the two regions to complete the prioritization process and identify knowledge gaps for each information need. Based on workshop results, prioritized information needs lists will be developed and used to focus the Call for Proposals for the Monitoring Program. Strategic planning workshops will be held for each of the seven geographic regions, and the entire Planning process is anticipated to take at least four years.

During the Bristol Bay-Chignik area May workshop, participants identified three subsistence fishery units and ranked their relative importance for Federal subsistence management as follows:

1. Bristol Bay Salmon
2. Chignik Salmon
3. Bristol Bay-Chignik Freshwater Species

Within each of these fishery units, workshop participants evaluated important species or species groups by drainage or geographic location, and classified them as being of either high or moderate importance[4].

Workshop participants further identified unique information needs for each of the three fishery units. Bristol Bay Salmon information needs were also prioritized, although time constraints precluded prioritizing information needs for Chignik Salmon and Bristol Bay-Chignik

[3] *Strategic Plan for the Subsistence Fisheries Resource Monitoring Program, Bristol Bay-Chignik Area, 2004*. Draft report in review.

[4] Highly important Bristol Bay Salmon included Lake Clark sockeye and Togiak Chinook, sockeye and coho salmon. Highly important Chignik Salmon included Perryville coho and Clark River late-run sockeye salmon. Highly important Bristol Bay-Chignik Freshwater Species included Bristol Bay rainbow trout, Togiak Dolly Varden, Lake Clark whitefish, and Togiak Smelt.

Moderately important Bristol Bay Salmon included Alagnak River sockeye, Igushik sockeye, Kulukak salmon, Egegik sockeye and Eastside Bristol Bay coho salmon. Moderately important Chignik Salmon included Clark River coho salmon. Moderately important Bristol Bay-Chignik Freshwater Species included Bristol Bay northern pike, Chignik smelt, and Bristol Bay Arctic grayling.

Freshwater Species. At total of 27 information needs were identified for Bristol Bay Salmon, 34 for Chignik Salmon, and 17 for Bristol Bay-Chignik Freshwater Species.

Projects Currently Funded Under the Fisheries Resource Monitoring Program

A total of 32 projects has been funded within the Southwest region since 2000, and nine of these approved as part of the 2003 and 2004 Monitoring Plans are currently funded in 2005 (**Table 1**). Two of these ongoing projects address Bristol Bay Salmon (04-411 and 04-454), one addresses Chignik Salmon (03-403), four address Kodiak-Aleutians Salmon (04-402, 04-403, 04-412, and 04-414), and two address Kodiak-Aleutians freshwater species as well as salmon (04-456, and 04-457). Specifically, these nine projects are providing information on:

- Lake Clark sockeye salmon run timing based on results of mixed stock genetic analysis (project 04-411);
- Sharing, bartering, and trading of fish resources within the Bristol Bay area (project 04-454);
- Minimum numbers and distribution of coho salmon spawning in streams near Perryville and late-run sockeye salmon spawning in Clark River using helicopter-based surveys (project 03-403, which ends this fall unless funds to continue these activities for three more years are obtained through project 05-405);
- Numbers of sockeye and coho salmon entering Mortensens Creek through a weir (project 04-402);
- Numbers of sockeye salmon entering McLees Lake through a weir (project 04-403);
- Sockeye salmon smolt production from Afognak Lake using mark-recapture methods along with limnological and spawning habitat information (project 04-412);
- Numbers of sockeye salmon entering Buskin River through a weir (project 04-414);
- Subsistence fisheries harvest assessment and traditional ecological knowledge in the Aleutian Islands and Alaska Peninsula areas (project 04-456);
- Subsistence fisheries harvest assessment and traditional ecological knowledge in the Kodiak area (project 04-457).

Additionally, a fisheries technician training program for residents of this region will be operated in 2005 through a no cost extension of project 03-404, which received funding from another source to conduct training in the Bristol Bay area in 2003.

Projects Forwarded for Investigation Plan Development

The Technical Review Committee forwarded five Bristol Bay-Chignik projects for development of investigation plans. These projects are located in three geographic areas: Togiak, Lake Clark, and Perryville-Chignik (**Map 1**). Four of these projects are stock status and trends, while the

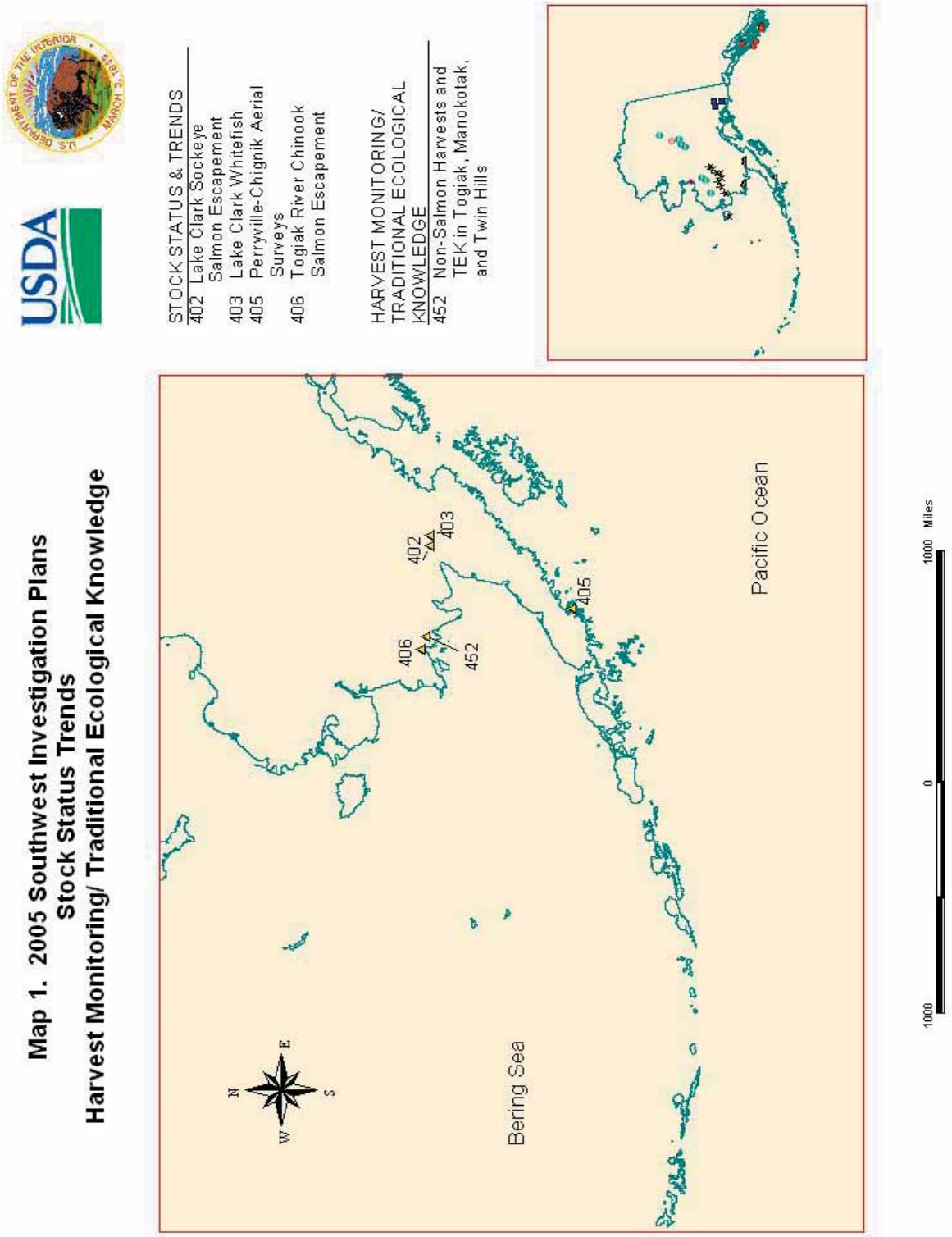
Table 1. Summary of projects funded under the Subsistence Fisheries Resource Monitoring Program in the Southwest region, 2000-2004. Abbreviations used for data types were: SST=stock status and trends, and HM-TEK=harvest monitoring and traditional ecological knowledge. Abbreviations used for investigators were: ADF&G=Alaska Department of Fish and Game, APIA= Aleutian-Pribilof Islands Assoication, BBNA=Bristol Bay Native Association, ISU= Idaho State University, NTC= Nondalton Tribal Council, NPS=National Park Service, USFWS=U.S. Fish and Wildlife Service, USGS=U.S. Geological Survey, UW=University of Washington.

Project Number	Data Type	Project Title	Investigators	Budget ($000s) 2000	2001	2002	2003	2004	2005	2006
		Bristol Bay Salmon								
00-010	SST	Togiak River Salmon Weir	USFWS	$16.0	$50.0	$50.0				
00-031	SST	Sockeye Salmon Escapement Estimation in the Alagnak River Drainage	ADF&G, NPS, BBNA	$43.7	$115.5	$108.5				
00-033	HM-TEK	Angler Effort Index for the Alagnak River	ADF&G	$40.2						
00-042	SST	Lake Clark Sockeye Salmon Assessment	USGS	$78.0	$129.0					
01-047	HM-TEK	Togiak River Subsistence Harvest Monitoring	BBNA, ADF&G, USFWS		$55.5	$46.6	$30.3			
01-075	HM-TEK	Collection of Traditional Ecological Knowledge on Sockeye Salmon Harvest Patterns in Nondalton, Alaska	NPS, NTC		$22.2					
01-095	SST	Escapement Estimates and Population Monitoring Lake Clark Sockeye Salmon	USGS, UW		$116.9	$112.3	$88.4			
01-109	HM-TEK	Traditions, Knowledge and Customs of Alaska Peninsula/Becharof National Wildlife Refuge Complex and Naknek River Subsistence Fisheries	ADF&G, BBNA		$40.1	$63.5				
01-173	HM-TEK	Harvest Assessment of the Recreational Fishery for Salmon in the Alagnak River	ADF&G		$133.3					
01-204	SST	Estimation of Coho Salmon Escapement in the Ugashik Lakes System, Alaska Peninsula Refuge	USFWS, ADF&G, BBNA		$87.7	$94.2	$85.6			
03-046	SST	Fisheries Biotechnician Training Program	NPS				$22.0			
04-411	SST	Lake Clark Sockeye Salmon Run Timing	ADF&G					$136.9	$9.5	$76.8
04-454	HM-TEK	Sharing, Bartering, and Trading in Subsistence Resources in Bristol Bay	ADF&G, BBNA					$74.3	$99.7	$27.6
			Subtotal	$177.9	$750.2	$475.1	$226.3	$211.2	$109.2	$104.4
		Chignik Salmon								
02-098	SST	Estimate Coho Salmon Escapement an Carrying Capacity in the Kametalook River	USFWS, BBNA			$20.1	$26.4	$14.6		
02-099	HM-TEK	Estimation of Late Run Sockeye and Coho Salmon Escapement in Clark River, a Tributary to Chignik River	USFWS, BBNA			$37.9	$13.9	$1.4		
03-043	SST	Estimation of Coho Salmon Escapement in Streams Adjacent to Perryville, Alaska Peninsula National Wildlife Refuge	USFWS					$11.4	$11.4	
			Subtotal	$0.0	$0.0	$58.0	$40.3	$27.4	$11.4	$0.0
		Bristol Bay-Chignik Freshwater Species								
00-011	SST	Genetic Baseline Development for Dolly Varden in Togiak River	USFWS	$26.8	$7.8					
00-012	HM-TEK	Traditional Knowledge of Fish in the Bristol Bay Area	ADF&G	$39.6						
02-034	HM-TEK	Subsistence Fisheries Assessment: Kvichak River Watershed Resident Species	ADF&G, BBNA			$31.0	$29.1			
04-401	SST	Ungalikthlik and Negukthlik Rivers Rainbow Trout Assessment	USFWS					$38.9		
04-415	SST	Tazimina Rainbow Trout Assessment	ADF&G					$111.0		
			Subtotal	$66.4	$7.8	$31.0	$29.1	$149.9	$0.0	$0.0
			Total Bristol Bay-Chignik Monitoring Program	$244.3	$758.0	$564.1	$295.7	$388.5	$120.6	$104.4

- continued -

Table 1. Southwest region continued.

Project Number	Data Type	Project Title	Investigators	Budget ($000s) 2000	2001	2002	2003	2004	2005	2006
		Kodiak-Aleutians								
00-032	SST	Stock Assessment of Sockeye Salmon from the Buskin River, Kodiak	ADF&G	$18.5	$49.5	$80.0	$57.6			
01-059	SST	Estimation of Sockeye Salmon Escapement into McLees Lake, Unalaska Island	USFWS		$88.6	$77.4	$80.5			
01-206	SST	Estimation of Sockeye and Coho Salmon Escapement in Mortenson Creek, Izembek National Wildlife Refuge	USFWS		$121.3	$85.9	$83.6			
02-032	HM-TEK	Subsistence Fisheries Harvest Assessment and Traditional Ecological Knowledge, Lower Alaska Peninsula and Aleutians	ADF&G, APIA, ISU			$91.8	$46.0			
03-047	SST	Afognak Lake Sockeye Salmon - Smolt Enumeration Feasibility	ADF&G				$38.2			
04-402	SST	Estimation of Sockeye and Coho Salmon Escapement in Mortenson Creek, Izembek National Wildlife Refuge	USFWS					$94.7	$92.8	$95.9
04-403	SST	Estimation of Sockeye Salmon Escapement into McLees Lake, Unalaska Island	USFWS					$79.0	$76.5	$79.0
04-412	SST	Stock Assessment of Afognak Lake Sockeye Salmon	ADF&G					$152.2	$0.0	$68.7
04-414	SST	Stock Assessment of Sockeye Salmon from the Buskin River, Kodiak	ADF&G					$129.3	$0.0	$67.0
04-456	HM-TEK	Subsistence Fisheries Harvest Assessment and Traditional Knowledge, Aleutians and Alaska Peninsula	ADF&G, APIA, ISU, QTU					$42.8	$20.9	$0.0
04-457	HM-TEK	Subsistence Fisheries Harvest Assessment and raditional Knowledge, Kodiak	ADF&G, KANA					$60.9	$54.0	$19.2
		Total Kodiak-Aleutians Monitoring Program		$18.5	$259.4	$335.1	$305.9	$558.9	$244.2	$329.8
		Total Southwest Region Monitoring Program		$262.8	$1,017.4	$899.2	$601.6	$947.4	$364.8	$434.2


Map 1. 2005 Southwest Investigation Plans
Stock Status Trends
Harvest Monitoring/ Traditional Ecological Knowledge
STOCK STATUS & TRENDS
402 Lake Clark Sockeye Salmon Escapement
403 Lake Clark Whitefish
405 Perryville-Chignik Aerial Surveys
406 Togiak River Chinook Salmon Escapement
HARVEST MONITORING/ TRADITIONAL ECOLOGICAL KNOWLEDGE
452 Non-Salmon Harvests and TEK in Togiak, Manokotak, and Twin Hills
402
403
405
406
452
Bering Sea
Pacific Ocean
N
E
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0
1000 Miles

remaining project falls into the harvest monitoring and traditional ecological knowledge data type.

Investigators responded to Technical Review Committee proposal review comments, and sometimes worked with Office of Subsistence Management staff, to develop their investigation plans. Detailed budgets submitted with each investigation plan provided information on requested funding that would be provided to Alaska Native, State, Federal, and other organizations (**Table 2**). The budgets also identified funds that would be used to hire local residents, as well as the amount of matching funds that would be contributed by investigating agencies and organizations (**Table 3**).

Table 2. Southwest region project costs, by organization (Alaska Native, State, Federal, other) for investigation plans submitted to the Fisheries Resource Monitoring Program for funding consideration in 2005.

		Project Costs ($000s)			
Project Number	Title	Alaska Native	State	Federal	Other
	Stock Status and Trends Projects				
05-402	Lake Clark Sockeye Salmon Escapement			$ 44.0	
05-403	Lake Clark Whitefish Assessment	$ 4.2			$ 66.8
05-405	Perryville-Chignik Coho and Late-Run Sockeye Salmon Aerial Surveys		$ 14.7		
05-406	Togiak River Chinook Salmon Escapement				
	Option A (full funding)	$ 26.1		$142.3	
	Option B (feasibility only)	$ 7.3		$ 27.8	
	Harvest Monitoring and Traditional Ecological Knowledge Projects				
05-452	Non-salmon Harvests and TEK in Togiak, Manokotak, and Twin Hills	$ 19.7	$ 57.5		

Table 3. Southwest region local hire and matching funds for investigation plans submitted to the Fisheries Resource Monitoring Program for funding consideration in 2005. Abbreviations used for investigators were: NPS=National Park Service, USGS=U.S. Geological Survey, USFWS=U.S. Fish and Wildlife Service, and ADF&G=Alaska Department of Fish and Game.

			Funding ($000s)	
Project Number	Lead Organization	Title	Local Hire	Matching
		Stock Status and Trends Projects		
05-402	NPS	Lake Clark Sockeye Salmon Escapement	$13.1	$102.9
05-403	USGS	Lake Clark Whitefish Assessment	$7.2	$45.2
05-405	USFWS	Perryville-Chignik Coho and Late-Run Sockeye Salmon Aerial Surveys		$12.0
05-406	USFWS	Togiak River Chinook Salmon Escapement:		
		Option A (full funding)	$21.3	$35.5
		Option B (feasibility only)		$12.0
		Harvest Monitoring and Traditional Ecological Knowledge Projects		
05-452	ADF&G	Non-salmon Harvests and TEK in Togiak, Manokotak, and Twin Hills	$7.2	

Investigation plans were reviewed according to four fundamental evaluation criteria:

- Strategic importance;
- Technical and scientific merit;
- Past performance and administrative expertise;
- Partnership and capacity building.

Evaluation of strategic importance and the need for information was based on issues and needs identified by Councils.

Available Funds

Federal Subsistence Board guidelines direct initial distribution of funds among regions and data types. For 2005, $215,000 is available for funding new projects in the Southwest region, which includes Kodiak-Aleutians as well as Bristol Bay-Chignik. Two thirds of this ($143,300) is available for stock status and trends projects, and one-third ($71,700) is available for harvest monitoring and traditional ecological knowledge projects.

Recommendations for Funding – Stock Status and Trends Projects

The Technical Review Committee forwarded four Bristol Bay-Chignik stock status and trends projects for development of investigation plans (**Table 4**). The Technical Review Committee prioritized funding recommendations for stock status and trends projects as follows:

05-402	Lake Clark Sockeye Salmon Escapement	$ 44,000
05-403	Lake Clark Whitefish Assessment	$ 71,000
05-405	Perryville-Chignik Coho and Late-Run Sockeye Salmon Aerial Surveys	$ 14,700
05-406	Togiak River Chinook Salmon Escapement (Option B)	$ 35,100
05-406	Togiak River Chinook Salmon Escapement (Option A)	$168,400

The available target amount of $143,300 would provide funding for the three highest priority projects listed above the line: 05-402, 05-403, and 05-405. The following brief project descriptions provide some information on the basis for these rankings (also see Executive Summaries).

05-402 Lake Clark Sockeye Salmon Escapement

This project would provide information on daily and annual Lake Clark escapements, age structure, and size composition. These data, particularly when available as long time series, form the foundation of salmon stock assessment and are used as the basis for management decisions and to evaluate management actions. In conjunction with Lake Clark sockeye salmon

Table 4. Southwest region stock status and trends investigation plans submitted to the Fisheries Resource Monitoring Program for funding consideration and Technical Review Committee (TRC) funding recommendations, 2005.

Project Number		Recommendation	Requested Budget ($000s)		
Number	Title	TRC	2005	2006	2007
05-402	Lake Clark Sockeye Salmon Escapement	Yes	$ 44.0	$ 44.5	$ 45.0
05-403	Lake Clark Whitefish Assessment	Yes	$ 71.0	$101.0	$ 62.1
05-405	Perryville-Chignik Coho and Late-Run Sockeye Salmon Aerial Surveys	Yes	$ 14.7	$ 29.4	$ 29.4
05-406	Togiak River Chinook Salmon Escapement:				
	Option A (full funding)	No	$168.4	$124.3	$128.9
	Option B (feasibility only)	No	$ 35.1		
	Total[1]		$298.1	$299.2	$265.4
	Funding Guideline		$143.3		
	TRC Recommendation		$129.7	$174.9	$136.5

[1]Total funding does not include 05-406 Option B

entry pattern information from project 04-411, escapement information may allow management agencies to develop strategies that reduce commercial exploitation levels on Lake Clark stocks, which have declined in abundance. This project would continue work successfully conducted under project 01-095, and is of considerable strategic importance.

05-403 Lake Clark Whitefish Assessment

This project would provide information on age structure and size composition of humpback whitefish harvests, and, by tracking individuals fitted with radio transmitters, allow investigators to identify spawning, feeding, and wintering areas. Additionally, chemical analysis of otoliths would indicate whether humpback whitefish harvested in Lake Clark had spent time in salt water. While information needs for freshwater fishes are generally regarded to be of lesser importance than those for salmon, there are some indications that humpback whitefish harvests over the last few years may not be sustainable, which increases the strategic importance of this work. Methods and findings should be transferable to other humpback whitefish populations in Bristol Bay, and the investigators are qualified to conduct this work.

05-405 Perryville-Chignik Coho and Late-Run Sockeye Salmon Aerial Surveys

This project would provide visual counts, obtained during helicopter surveys, of coho salmon escapement into several streams near Perryville as well as late-run sockeye salmon escapement into Clark River. These counts represent minimum numbers of coho salmon which may not index actual abundance, particularly since weather and water conditions during the fall make surveying very difficult. Declining runs of coho salmon, and possibly late-run sockeye, within this area are of great concern, and project 03-043 is providing aerial counts for 2003 and 2004. Although these surveys only provide minimum counts of spawners as well as information on spawning

distribution, continuing this work for three additional years would allow investigators to examine trends and determine whether an index program could be developed.

05-406 Togiak River Chinook Salmon Escapement (Options A and B)

This project would use mark-recapture methods to improve the accuracy of Chinook salmon spawning abundance estimates, which are currently based on aerial surveys. Due to uncertainties involved in successfully obtaining mark-recapture abundance estimates of the desired accuracy and precision, a one year pilot project was also considered for funding (Option B) prior to conducting a full-scale, three-year mark-recapture project (Option A). Option B would allow investigators to determine whether sufficient numbers of Chinook salmon could be captured for tagging and whether snorkel surveys could be used to "recover" sufficient numbers of marked individuals. This project is considered to be of low strategic importance since the Chinook population is large in comparison to subsistence harvests, no harvesting problems have been reported, and the cost of obtaining full-scale mark-recapture estimates would be great.

Recommendations for Funding – Harvest Monitoring and Traditional Ecological Knowledge Projects

The Technical Review Committee recommended one harvest monitoring and traditional ecological knowledge project for development of an investigation plan (**Table 5**; also see Executive Summary). The Technical Review Committee recommends funding this project in 2005.

05-452	Non-salmon Harvests and Traditional Ecological Knowledge in Togiak, Manokotak, and Twin Hills	$ 77,200

This two year collaborative project would collect traditional ecological knowledge and conduct harvest assessment of subsistence fisheries in the communities of Togiak, Manokotak, and Twin Hills. Subsistence harvests of non-salmon species in these three Togiak National Wildlife Refuge communities are not monitored annually, although comprehensive surveys were conducted in Manokotak and Togiak in 1994-1995, and a comprehensive study was conducted

Table 5. Southwest region harvest monitoring and traditional ecological knowledge investigation plan submitted to the Fisheries Resource Monitoring Program for funding consideration and Technical Review Committee (TRC) funding recommendations, 2005.

Project		Recommendation	Requested Budget ($000s)		
Number	Title	TRC	2005	2006	2007
05-452	Non-salmon Harvests and TEK in Togiak, Manokotak, and Twin Hills	Yes	$77.2	$29.1	
	Total		$77.2	$29.1	
	Funding Guideline		$71.7		
	TRC Recommendation		$77.2	$29.1	

in all three communities in 2000. The objectives of this project are to update harvest and use information, including documenting harvest quantities, species used, gear types, and location of harvests; identify economic, cultural, and environmental factors influencing the characteristics of subsistence harvest and uses; and conduct systematic household surveys documenting non-salmon harvests. While this project has some technical issues that need to be addressed in a revised investigation plan, it addresses an issue that is strategically important, and investigators are qualified to conduct the work.

Recommendations for Funding – Summary and Data Type Analysis

It is the responsibility of the Technical Review Committee to develop the strongest possible 2005 monitoring plan for each region and across the entire state. While Monitoring Program funds are initially allocated by region and information type each year, actual distribution of funds may differ from guideline amounts depending upon the number and quality of projects submitted as well as changing management needs. While regional and information need funding guidelines were met for Southwest region, no 2005 proposals for the Kodiak-Aleutians area were forwarded for investigation plan development. However, six Kodiak-Aleutians projects initially funded in 2004 are continuing in 2005 and will receive $375,200. Three Bristol Bay-Chignik projects initially funded in 2004 are also continuing in 2005 and will receive $183,200.

To ensure that the highest priority information needs within the Southwest region were being addressed, the Technical Review Committee evaluated both stock status and trends projects not recommended for funding (05-406 Options A and B) in relation to the harvest monitoring and traditional ecological project that was recommended (05-452). The Technical Review Committee reaffirmed their original recommendations, determining that project 04-452 would address more important informational needs than project 05-406 Option A or B. The Technical Review Committee then prioritized 2005 Monitoring Plan projects within the Southwest region as follows, to facilitate project comparisons across regions:

05-402	Lake Clark Sockeye Salmon Escapement	$ 44,000
05-403	Lake Clark Whitefish Assessment	$ 71,000
05-452	Non-salmon Harvests and TEK in Togiak, Manokotak, and Twin Hills	$ 77,200
05-405	Perryville-Chignik Coho and Late-Run Sockeye Salmon Aerial Surveys	$ 14,700
05-406	Togiak River Chinook Salmon Escapement (Option B)	$ 35,100
05-406	Togiak River Chinook Salmon Escapement (Option A)	$168,400

The two project options below the line (05-406 Options A and B) are not recommended for funding in 2005. The Southwest region funding recommendation for the 2005 Monitoring Program totals $206,900, which is $8,100 less than the total target of $215,000 (**Tables 4** and **5**).

Recommended for Funding

05-402
Lake Clark Sockeye Salmon Escapement and Population Monitoring

Geographic Area: Southwest – Bristol Bay area

Information Type: Stock Status and Trends (SST)

Principal Investigators: Dan Young, Lake Clark National Park and Preserve
Port Alsworth, AK 99653
Phone: 907-781-2218
Email: dan_young@nps.gov

Co-Investigators: Mary McBurney, National Park Service
Dr. Carol Ann Woody, U.S. Geological Survey

Cost:	**2005**	**2006**	**2007**
	$ 44,042	$ 44,502	$ 44,968

Issue

Continued decline in the number of sockeye salmon returning to the Kvichak River is a priority concern to subsistence fishers, the National Park Service and the Alaska Department of Fish and Game. Sockeye salmon bound for Lake Clark comprise 7 to 30% of the total Kvichak River escapement and provide the communities of Newhalen, Iliamna, Nondalton, and Port Alsworth with up to 75% of their total subsistence needs. This project will provide information on daily and annual Lake Clark escapements, return time, age structure, and size composition, all of which will aid in construction of brood tables and trend analysis. This information is needed to define the relationship between Kvichak and Lake Clark sockeye salmon stocks as well as for in- and post-season management decisions.

Objectives

1. Estimate sockeye salmon escapement to Lake Clark.

2. Determine age and size structure of the Lake Clark escapement.

Methods

Sockeye salmon will be counted and sampled as they ascend the Newhalen River. Standard Alaska Department of Fish and Game counting tower protocols will be used to enumerate fish. Age and size data will be collected from sockeye salmon in collaboration with the communities of Newhalen-Iliamna and Nondalton. Locally hired technicians, trained through the National Park Service-University of Alaska Fairbanks Biotechnician Training Program, will lead or assist salmon escapement and sampling efforts.

Products

Progress and final reports will be completed based on Fisheries Resource Monitoring Program guidelines. Electronic and paper copies of reports will also be provided to Newhalen-Iliamna and Nondalton Tribal Councils, Bristol Bay Regional Advisory Council, Borough Assembly, and other interested parties.

Experience of Investigators

Dan Young is the Fisheries Biologist at Lake Clark National Park and Preserve. He has over 10 years experience working with fisheries in Alaska and has spent the past five years working in the Lake Clark area as a field crew leader for Dr. Woody's sockeye salmon research projects.

Mary McBurney is the Subsistence Program Manager for Lake Clark and Katmai National Parks and Preserves, Aniakchak National Monument and Preserve and the Alagnak Wild River. She developed and implemented a pilot program in 2002 to train Bristol Bay residents as fisheries biotechnicians.

Dr. Carol Ann Woody has over 20 years experience in fisheries research and has supervised over 30 remote field projects in Alaska. She has served as Project Investigator for sockeye salmon research on Lake Clark sockeye salmon since 1999.

Partnerships/Collaboration

This project has an established history of partnerships and capacity building. U.S. Geological Survey has successfully administered projects 01-095 (Population monitoring of sockeye salmon from Lake Clark and the Tazimina River) and 00-042 (Population Assessment of Lake Clark Sockeye Salmon) in collaboration with the Kijik Corporation, Nondalton Tribal Council and villagers, Iliamna-Newhalen villagers, and the Universities of Alaska, Montana, and Washington. Local youths have been trained as technicians and future project leaders through an intern program initiated in 2000.

Recommendation: *Fund*

Justification

Lake Clark sockeye salmon escapement monitoring has been identified as an issue and information need for the Bristol Bay-Chignik area by the Regional Advisory Council for this area. Lake Clark sockeye salmon runs have declined in abundance over the last several years, and rural residents have reported difficulty harvesting this resource. This project would provide basic information needed to monitor and manage Lake Clark sockeye salmon runs, and would continue monitoring efforts previously funded through project 01-095, Escapement estimates for Lake Clark sockeye salmon. Program costs would be less than that provided for past work due to efficiencies in operations, increased provision of agency matching funds, and discontinuance of the Tazimina counting tower component. There continues to be strong community support for continuing this project, and past efforts by investigators have been successful in hiring, training, and mentoring local high school students.

Recommended for Funding

05-403
Distribution, Seasonal Movement, and Life History of Humpback Whitefish in the Lake Clark Watershed

Geographic Area: Southwest – Bristol Bay area

Information Type: Stock Status and Trends (SST)

Principal Investigators: Julie Meka, Carol Ann Woody
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Co-Investigators: Dan Young, National Park Service
John Chythlook, Bristol Bay Native Association

Cost:	2005	2006	2007
	$ 71,006	$100,969	$ 62,100

Issue

Study of Lake Clark whitefish populations was listed as an important issue for the 2005 Fisheries Resource Monitoring Program. Both subsistence fishers and resource managers are concerned about whitefish population health. Local residents reported a decline in whitefish harvests during fall subsistence gill-net fisheries in the Lake Clark-Lake Iliamna region, and voiced concerns to the Bristol Bay Native Association and Regional Advisory Council. Humpback whitefish *Coregonus pidschian* are the primary harvest target and are typically captured using gill nets in spring and fall. Continued declines in sockeye salmon abundance in the region may have affected whitefish populations by reducing nutrient inputs from salmon carcasses, and increasing subsistence harvest pressure. Lack of basic biological information on whitefish populations in Lake Clark National Park prevents development of sustainable harvest guidelines.

Objectives

1. Determine basic life history characteristics of Lake Clark National Park humpback whitefish populations including age and size, age at maturity, fecundity, and anadromy.
2. Determine seasonal migration patterns and habitat use of Lake Clark National Park humpback whitefish populations.

Methods

Whitefish will be captured during the summers of 2005 and 2006 using seines, and during fall subsistence fisheries using gill-nets. Age, sex, size, and fecundity data will be collected from samples of whitefish captured at various locations. Otoliths will be collected from subsistence-

caught whitefish for aging and microchemistry analysis to detect anadromy. About 80 whitefish captured during the summer of 2006 will be fitted with a radio tag and tracked, using shore-based stationary as well as boat- and aerial-based mobile receivers, through late fall of 2007. Tracking data will be used to identify spawning, feeding, and overwintering habitats. Methods and findings should be transferable to whitefish populations in other Bristol Bay systems.

Products

Progress, annual, and final reports will be completed based on Fisheries Resource Monitoring Program guidelines. At least one manuscript will be published in a peer-reviewed fisheries journal.

Experience of Investigators

Julie Meka's has 7 years of experience working with freshwater salmonids in the Bristol Bay region, and has conducted radio telemetry research in Alaska and Arizona since 1992, including a 3-year telemetry study on Alagnak River rainbow trout.

Dr. Carol Ann Woody has over 20 years of experience in fisheries research, has supervised over 30 remote field projects in Alaska, and has served as Project Investigator for research on Lake Clark National Park sockeye salmon since 1999.

Dan Young has worked on a variety of fisheries projects in Alaska since 1993, is currently completing a MS degree in fisheries science from University of Alaska Fairbanks, and has used radio telemetry to determine spawning distribution and migration of sockeye salmon in Lake Clark National Park.

Partnerships/Collaboration

This project addresses subsistence fisheries monitoring stock status and trends issues in the Bristol Bay region. It will provide local economic benefits through education and regional employment opportunities (2 jobs) as part of the research project.

Recommendation: *Fund*

Justification

Lake Clark whitefish has been identified as an issue and information need by the Regional Advisory Council for this area. Most fisheries work in this region has focused on Pacific salmon since they are of great importance to subsistence users, as well as the targets of large commercial and recreation fisheries. While whitefish is an important subsistence resource, it has been overlooked by management agencies since this resource has low commercial and recreational value. Local residents have reported a decline in the number and size of humpback white harvested in Lake Clark, which could be the result of increasing harvest pressure due to declining sockeye salmon abundance. Information is not available on humpback whitefish movement patterns or on the age, size, and sex composition of subsistence harvests. This information is needed to assess stock status and evaluate the sustainability of current harvest levels. Local communities support the proposed project and the opportunities it would provide for capacity building activities involving local youths. The investigators are well qualified to conduct this work and would provide a good match of funds to support the project.

Recommended for Funding

05-405
Estimation of Coho Salmon Escapement in Streams Adjacent to Perryville and Sockeye Salmon Escapement in Chignik Lake Tributaries, Alaska Peninsula National Wildlife Refuge

Geographic Area: Northwest Alaska – Chignik area

Information Type: Stock Status and Trends

Principal Investigators: Jim Larson, U.S. Fish and Wildlife Service
King Salmon Fish and Wildlife Field Office
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E-mail: jim_larson@fws.gov

Cost:	**2005**	**2006**	**2007**
	$ 14,700	$ 29,400	$ 29,400

Issue

Coho salmon *Oncorhynchus kisutch* runs to the Kametolook, Three Star, and Long Beach rivers near Perryville have declined and residents can no longer meet their subsistence needs in those rivers. These residents now harvest coho salmon from streams outside the immediate vicinity of Perryville. With fishing effort spread out to other streams, we need to ensure escapements are maintained to meet Perryville residents' subsistence needs and to sustain these small stocks.

Subsistence fishers in the Chignik area have had difficulty harvesting sockeye salmon *Oncorhynchus nerka* in the Chignik watershed, and are concerned that runs have declined and may be over-exploited by the commercial fishery. We need to monitor late-run sockeye and coho salmon escapement in the Chignik watershed to ensure these runs are sustained and subsistence needs are met.

Objectives

1. Obtain information on spawning distributions and minimum numbers of coho salmon in streams near the village of Perryville.

2. Obtain information on spawning distributions and minimum numbers of spawning late-run sockeye salmon in the Clark River.

Methods

The investigator would use low-level aerial surveys, conducted from a helicopter, to estimate coho and sockeye salmon escapements into streams near Perryville and in the Clark River. Two

aerial surveys would be conducted annually, one in late September and one in mid October. Flights would be coordinated to minimize sampling error by avoiding periods of turbid flow and inclement weather. Survey reaches are considered to be index areas, and counts are considered minimum estimates of coho and sockeye salmon abundance. Periodic aerial counts would provide a minimum index of coho and sockeye salmon escapement. Due to the inclement weather and "flashy" nature of the streams in this region during late fall, getting more precise estimates of salmon escapement is neither logistically feasible nor cost effective.

Products

Progress and final reports would be completed based on Fisheries Resource Monitoring Program guidelines. Annual and final reports would be published as U.S. Fish and the Wildlife Service's Alaska Fisheries Data Series reports, and the information would be available for presentation to interested parties. Data would be archived per King Salmon Fish and Wildlife Field Office standards.

Experience of Investigators

King Salmon Fish and Wildlife Field Office staff has extensive experience in conducting fisheries studies in southwest Alaska. Staff has successfully completed the first year of project 03-403, which this proposal seeks to extend through 2007. The project leader, James Larson, has an MS from Humboldt State University, and has served in his present capacity for more than 10 years.

Partnerships/Collaboration

The project would develop partnerships between King Salmon Fish and Wildlife Field Office and the villages of Perryville, Chignik Lake, Chignik Lagoon, and Chignik Bay through annual meetings that would share project results and solicit additional input from village residents. Perryville residents have knowledge of where fishing pressure has shifted since closure of local rivers, and where monitoring is necessary to ensure escapement needs are met. In-season communication with local village residents would also be necessary to determine if coho and sockeye salmon escapements were sufficient for subsistence uses in each survey stream.

Recommendation: *Fund*

Justification

Assessment and monitoring of Chignik area coho salmon, and distribution and abundance of late-run Clark River sockeye salmon have been identified as important information needs by the Regional Advisory Council for this area. The coho salmon run to Kametolook River has drastically declined and is closed to subsistence fishing, while Chignik village residents have experienced difficulty harvesting late-run Clark River sockeye salmon. This project would continue aerial survey work previously conducted through projects 03-043 and 02-098 to provide counts of salmon spawning in Chignik area streams for three additional years. Future refinements could include more frequent surveys of fewer streams to better define the time period within which peak counts are most likely to be obtained.

Not Recommended for Funding

05-406
Estimation of Chinook Salmon Escapement in the Togiak River Drainage, Togiak National Wildlife Refuge

Geographic Area: Bristol Bay / Kodiak Aleutians

Information Type: Stock Status and Trends

Principal Investigators: Jim Larson, U.S. Fish and Wildlife Service
King Salmon Fish and Wildlife Field Office
King Salmon, AK 99613
Phone: (907) 246-3442
E-mail: jim_larson@fws.gov

Co-Investigators: Tim Sands and Jason Dye, Alaska Department of Fish and Game
Mark Lisac, U.S. Fish and Wildlife Service
John Chythlook, Bristol Bay Native Association

Cost:	2004	2005	2006
Option A	$168,426	$124,317	$128,895
Option B	$ 35,051	$ 0	$ 0

Issue

Stock assessment information for Chinook salmon *Oncorhynchus tshawytscha* in the Togiak River is inadequate. Efforts focus primarily on sockeye salmon *O. nerka* and Chinook salmon escapement is estimated from aerial counts based on incomplete surveys of spawning areas. Togiak River is within Togiak National Wildlife Refuge, and rural residents have a subsistence harvest priority under Title XIII of ANILCA. Improved Togiak River Chinook salmon assessment is viewed as a Federal subsistence fishery management need and recognized as an important issue by the Bristol Bay Regional Advisory Council.

Objectives

Option A:

1. Estimate Chinook salmon spawner abundance in the Togiak River drainage with 90% probability of being within 25% of the true abundance.

2. Describe the proportions of Chinook salmon by age and sex captured during the first sampling event of each mark-recapture estimate.

3. Track 200 Chinook salmon fitted with radio tags to determine if spawning location is correlated to river entry timing, and if tagging affects migration behavior.

Option B:

Determine the feasibility of capturing, marking, and recapturing sufficient numbers of Chinook salmon to obtain a mark-recapture abundance estimate.

Methods

Option A

To estimate Chinook salmon abundance, investigators would perform a single census mark-recapture estimate each year of the study. For the marking event, Chinook salmon would be captured using drift gill nets and angling. For the recapture event, Chinook salmon would be visually observed during snorkeling surveys.

Option B

The feasibility of capturing Chinook salmon in the Togiak River would be assessed using drift gill nets and angling. All Chinook salmon captured would be measured for length, have their sex determined, and be aged from scale samples. Use of snorkel surveys would be assessed as a recapture method on the main-stem Togiak and Gechiak rivers.

Products

Progress, annual, and final reports would be completed based on Fisheries Resource Monitoring Program guidelines. Annual and final reports would be published as U.S. Fish and Wildlife Service Alaska Fisheries Data Series reports. Data would be archived per King Salmon Fish and Wildlife Field Office standards. Annual presentations would be made to the Bristol Bay Regional Advisory Council and Togiak Village Council.

Experience of Investigators

King Salmon Fish and Wildlife Field Office staff has extensive experience in conducting fisheries studies in southwest Alaska and has conducted many escapement projects for Pacific salmon. All biologists have masters' degrees and more than 40 years of combined professional experience, including more than 25 years in Bristol Bay. The project leader, James Larson, has a MS degree from Humbolt State and has served in his present capacity for more than 10 years.

Partnerships/Collaboration

Consultations regarding salmon escapement monitoring in the Togiak River have occurred over several years with Alaska Department of Fish and Game, Bristol Bay Native Association, Village of Togiak, Togiak National Wildlife Refuge, and King Salmon Fish and Wildlife Field Office. All parties agree that current efforts are inadequate and a combination of methods is needed. This project would strengthen existing partnerships between management agencies and stakeholders. Capacity building would occur by employing local student interns or technicians supervised by a Partners for Fisheries Monitoring Program biologist within Bristol Bay Native Association.

Recommendation: *Do not Fund*

Justification

Improved information on Togiak River Chinook salmon spawning escapements is an information need identified by the Regional Advisory Council for this area. Improving the accuracy and precision of spawning abundance estimates, currently based on aerial surveys and harvest information, would increase the chances of correctly determining and meeting spawning escapement needs and making correct management decisions. However, this project is felt to be of low strategic importance since the Chinook salmon subsistence harvest is only a small portion of existing minimum abundance estimates; no subsistence harvesting problems have been reported; and few residents harvest Chinook salmon within refuge waters. The cost to the Monitoring Program of conducting a full scale mark-recapture program was considered to be too high in relation to the need for this information to manage this Federal subsistence fishery.

Recommended for Funding

05-452
Non-salmon Fish Harvests and Traditional Knowledge in Togiak, Manokotak, and Twin Hills

Geographic Area: Bristol Bay, Southwest Alaska, Togiak National Wildlife Refuge (TNWR)

Information Type: Harvest Monitoring and Traditional Ecological Knowledge

Principal Investigators: Ted Krieg and Molly Chythlook
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molly_chythlook@fishgame.state.ak.us

Co-Investigators: Laura Jurgensen, Natural Resources Department
Bristol Bay Native Association
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Phone: 907-842-5257
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Cost:	**2005**	**2006**	**2007**
	$ 77,225	$ 29,113	$ 0

Issue

Subsistence harvests of non-salmon fish in the TNWR communities of Togiak, Twin Hills, and Manokotak are not monitored annually. Since the last studies in 1995 and 2000, several factors have likely influenced the subsistence fisheries in these communities, including the decline of the commercial salmon fishery and developing recreational fisheries. This study will update harvest and use information and will document any changes in harvest quantities, species used, gear types, and location of harvests. Interviews with key respondents will identify economic, cultural, and environmental factors influencing the characteristics of subsistence harvests and uses.

Objectives

1. Approximately 10 to 15 key respondent interviews about subsistence harvests and uses of non-salmon fish, such as methods and means; changes in the fishery; environmental and other habitat changes; and potential impacts of the sport and commercial fisheries of the Togiak District on subsistence harvests and uses.

2. Estimates of harvests of nonsalmon fish for the calendar year 2005.

3. Maps of locations of harvests nonsalmon fish in 2005 by cultural/biological unit, as mapped in previous research in these study communities.

4. An update of the traditional knowledge database *From Neqa to Tepa.*

Methods

This project involves key respondent interviews and subsistence harvest surveys for nonsalmon fish in three communities within the TNWR: Togiak, Twin Hills, and Manokotak. The first project phase will consist of approximately 10 to 15 key respondent interviews concerning non-salmon TEK. These interviews will be recorded on audiotape and will be conducted in English and Yup'ik depending upon the respondents' preferences and abilities. These interviews will focus on economic, cultural, and environmental factors that are influencing subsistence harvests of nonsalmon fish, and provide guidance for potential questions for the subsequent household survey. The second phase will consist of systematic household surveys in January 2006 documenting the non-salmon fish harvests of 2005. The survey will collect data to estimate subsistence harvests by species and area and gear type, the total number of households that subsistence fished in the study year, and local residents' observations and concerns. The third phase will consist of data analysis and preparation of a final report and an update to the TEK database "From Neqa to Tepa," using the AskSam software program

Deliverables/Products

1. A performance report, due December 1, 2005.

2. An annual report, due May 1, 2006.

3. A final report summarizing the methods and the findings, including key respondent interviews, household surveys and traditional use areas, due September 30, 2006.

4. An abbreviated summary (four to eight pages) of the results for distribution to all study communities' households and local and regional governments and other organizations.

5. An updated CD-ROM of *"From Neqa to Tepa: A Database with Traditional Knowledge about the Fish of Bristol Bay, Version 2.0"*.

Experience of Investigators

Staff of the ADF&G Subsistence Division have broad experience in conducting this type of study. Ted Krieg worked on a similar study while at BBNA in 1995/1996. Molly Chythlook has conducted TEK and harvest assessment interviews in the study communities and is fluent and literate in the Central Yup'ik language. Laura Jurgensen is BBNA's social scientist, hired under the Partners for Fisheries Monitoring program. She has a MA in anthropology and experience in ecological anthropology.

Partnerships/Collaboration

This project will be a collaboration between the Division of Subsistence of ADF&G and BBNA. Letters of support will be solicited from the tribal council presidents of each of the proposed study communities by BBNA staff, and surveys will include the employment of individuals from each of the communities to assist with interviewing.

Recommendation: *Fund*

Justification

This two year collaborative project proposes study to collect traditional ecological knowledge and conduct harvest assessment of subsistence fisheries in the communities of Togiak, Manakotak, and Twin Hills. The project addresses several key issues identified by the Regional Advisory Council, and is technically sound.

2005 DRAFT FISHERIES RESOURCE MONITORING PLAN SOUTHCENTRAL REGION OVERVIEW

ISSUES AND INFORMATION NEEDS

Identification of strategic priorities for informational needs is currently being updated for the Southcentral Region. In April, OSM hosted a workshop of regional professionals, including representation from the Southcentral Council; tasked with development of a strategic plan for informational critical to Federal subsistence management. The report from this effort is in draft form[1] and currently under review at this Council meeting. However, the results from this workshop parallel issues and information needs already developed by the Council[2] in many respects, and add important direction for prioritizing information needs.

Subsistence fisheries in the Copper River basin and Prince William Sound were evaluated and compared as to their relative importance for information needed for Federal subsistence management. In order of priority for information are:

1. Copper River Salmon
2. Copper River Freshwater Species
3. Copper River Steelhead
4. Copper River Eulachon
5. Prince William Sound-Delta Salmon
6. Prince William Sound-Delta Freshwater Species

Within the Copper River salmon fishery, information needs by species in order of importance are:

1. Sockeye salmon
2. Chinook salmon
3. Coho salmon

A total of 28 unique information needs were identified and prioritized for Copper River salmon. The information needs that best address the two Copper River salmon investigation plans under consideration are (rank priority in parentheses):

[1] *Strategic Plan for the Subsistence Fisheries Resource Monitoring Program, Southcentral Region, 2004* draft report in review.

[2] *Issues and Information Needs, Federal Subsistence Fisheries Monitoring Program*, November 2002.

(2) Determine timing and migratory patterns attributable to wild stock sex and age

(6) Estimate distribution of spawning populations

(11) Identify and evaluate environmental, demographic, regulatory, and socioeconomic factors affecting subsistence uses

A total of 15 unique information needs were identified for Copper River steelhead. Although not explicitly prioritized, the information need that best addresses the one Copper River steelhead investigation plan under consideration would likely be ranked as first or second:

- Determine timing and migratory patterns attributable to wild stock sex and age

Monitoring Program projects for Cook Inlet continue to be systematically excluded from consideration pending resolution of subsistence fishery regulations for this region. Results from the one Monitoring Program project for this area (03-045 Cook Inlet Customary and Traditional Subsistence Fisheries Assessment) have only recently been available.

Projects already funded under the Monitoring Program

A total of 6 projects are already funded in the Southcentral Region for 2005 (**Table 1**), all were approved as part of the 2004 Monitoring Plan, and all address Copper River salmon. Of these, two projects (04-501 and 04-502) provide assessment of select sockeye salmon spawning escapements. The largest project (04-503) continues previously funded work to provide estimates of inriver abundance and timing of Chinook salmon. Additional work to assess stock structure of Copper River Chinook (05-507) was also funded. One project continues previously funded work to provide an in-season index of salmon abundance past the commercial fishery (04-506). One project (04-553) will develop an environmental history of the Cooper River basin, with a specific emphasis on salmon fisheries, through combining traditional ecological knowledge (TEK) with natural and social science data.

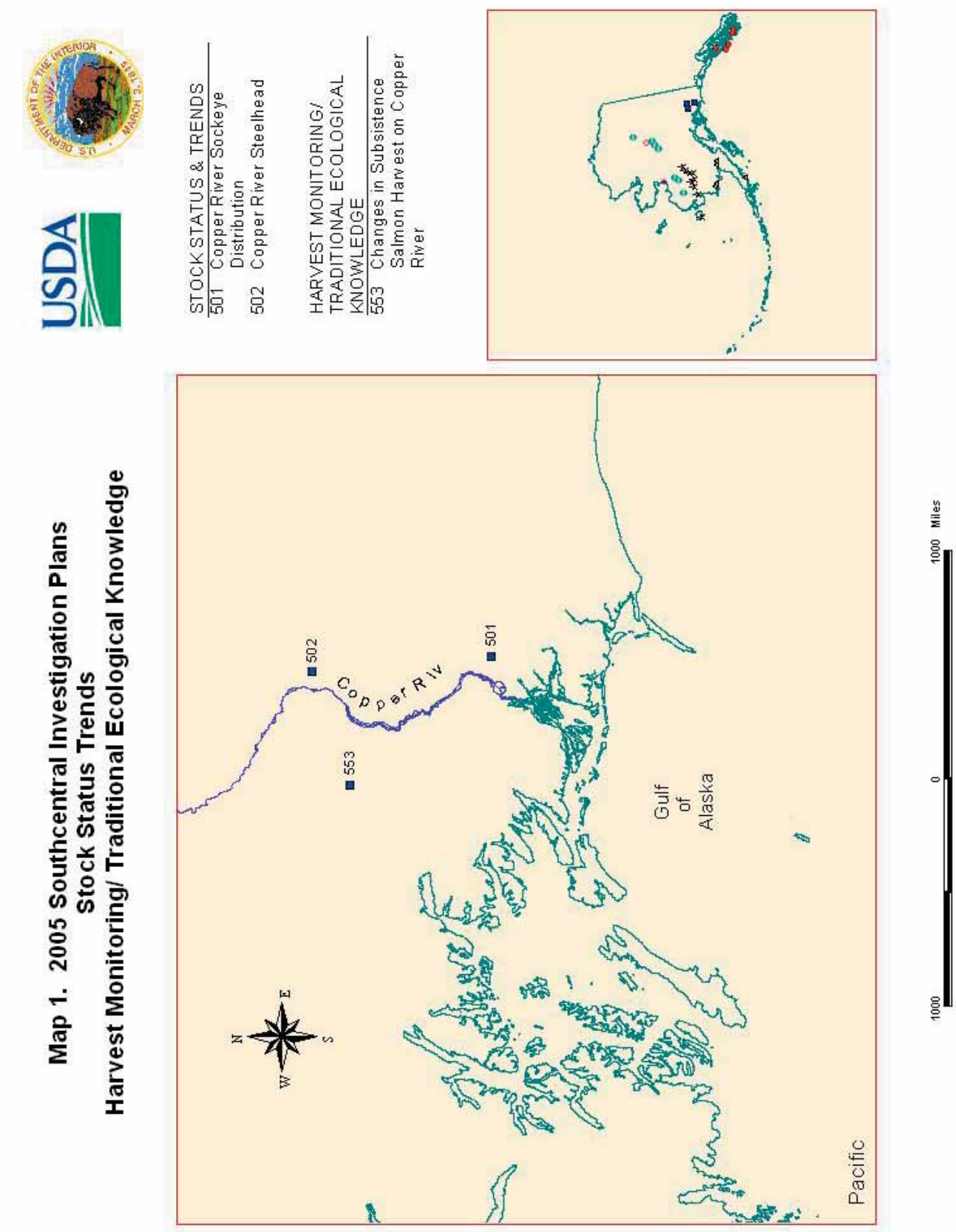
Projects Forwarded for Investigation Plans

The Technical Review Committee forwarded a total of 3 projects for development of investigation plans. These projects are all located in the Copper River basin (**Map 1**). Two are stock status and trends projects, and one addresses collection and analysis of Traditional Ecological Knowledge.

Investigators used Technical Review Committee proposal review comments, and sometimes worked with OSM staff, to develop investigation plans. Detailed budgets submitted with each investigation plan allowed funding requests to be summarized according to Alaska Native, State,

Table 1. Summary of projects funded under the Fisheries Resource Monitoring Program in the Southcentral region by subsistence fishery, 2000 - 2006. Abbreviations for investigators were: ADF&G=Alaska Department of Fish and Game, CHVC=Cheesh'Na Village Council, CVC=Chitina Village Council, CRNA=Copper River Native Association, CRRC=Chugach Regional Resources Commission, CRWP=Copper River Watershed Project, FS=USDA Forest Service, LGL=LGL Ltd, MTC=Mentasta Tribal Council, NPS=National Park Service, NVE=Native Village of Eyak

Project				Budget ($000s)						
Number	Data Type	Project Title	Investigators	2000	2001	2002	2003	2004	2005	2006
		Copper River Salmon								
00-013	SST	Tanada Creek Salmon Escapement	NPS	$46.5	$44.4	$43.5	$60.3			
00-034	SST	Miles Lake Sonar Improvement	FS, ADF&G	$89.9						
01-020	SST	Feasibility of Copper River Chinook Abundance Estimate	NVE, LGL		$237.6	$299.5	$241.2			
01-021	SST	In-season Abundance Estimate in Lower Copper R	NVE, LGL, ADF&G		$157.9	$180.3	$171.8			
02-015	SST	Copper River Chinook Radio Telemetry	ADF&G, NVE			$229.3	$185.3	$185.3		
04-501	SST	Long Lake Sockeye Escapement	NPS,CRWP					$17.8	$17.8	$17.8
04-502	SST	Tanada Creek Salmon Escapement	NPS					$62.5	$62.5	$62.5
04-503	SST	Copper River Chinook Abundance Estimate	NVE, LGL					$296.9	$333.6	$333.6
04-506	SST	In-season Abundance Estimate in Lower Copper R	NVE, LGL, ADF&G					$67.7	$59.2	$66.1
04-507	SST	Copper River Chinook Genetics	ADF&G, NVE, NPS					$114.9	$114.7	$51.0
00-040	HM-TEK	Copper R Subsistence Salmon Fishery Evaluation	ADF&G, CRNA	$133.0						
01-217	HM-TEK	Workshop to Build Capacity among Copper R Groups	CRNA, LGL			$35.9				
03-010	HM-TEK	GIS Atlas of C&T Subsistence Fish Harvests in Upper Copper River	CRNA, LGL				$54.6			
04-553	HM-TEK	Traditional Knowledge of Long Term Changes in Copper R Salmon Runs	ADF&G, NVE					$89.9	$118.3	$0.0
		Subtotal		$269.4	$529.8	$788.5	$713.2	$835.0	$705.8	$531.0
		Copper River Steelhead								
01-148	SST	Stock Status of Copper R Steelhead	ADF&G, CRNA,USFWS		$168.2	$129.2	$0.0			
01-035	HM-TEK	Copper River Steelhead Harvest Monitoring	NPS, CRNA		$9.1	$9.1	$9.1			
03-001	SST	Cooper River steelhead population biology	ADF&G				$60.8			
		Subtotal		$0.0	$177.3	$138.3	$9.1	$0.0	$0.0	$0.0
		Copper River Freshwater Species								
01-110	HM-TEK	Harvest and Use of Non-Salmon Species in Copper R	CRNA, ADF&G, CHVC, CVC, Kari, MTC		$120.5	$46.9	$39.3			
02-077	HM-TEK	Increasing GIS Capabilities in the Upper Copper R	CRNA			$14.6				
		Subtotal		$0.0	$120.5	$61.5	$39.3	$0.0	$0.0	$0.0
		Copper River Eulachon								
02-075	HM-TEK	Eulachon Subsistence Harvest Opportunities	NVE, FS, ADF&G			$24.6	$24.6			
		Subtotal		$0.0	$0.0	$24.6	$24.6	$0.0	$0.0	$0.0
		Prince William Sound Salmon								
00-035	SST	Coghill Coho Weir	ADF&G, FS	$25.0	$26.0	$27.0				
02-028	HM-TEK	Chugach Region TEK Mapping	CRRC			$57.8	$28.6	$28.6		
03-033	SST	Stock Assessment of Salmon in Billy's Hole, PWS	ADF&G, CRRC, FS				$163.2	$79.7		
		Subtoal		$25.0	$26.0	$84.8	$191.8	$108.3	$0.0	$0.0
		Cook Inlet								
00-038	SST	Cooper Creek Dolly Varden Assessment	ADF&G	$38.5						
00-041	HM-TEK	Eulachon Subsistence Use & Assessment in Turnagain Arm	FS	$49.8	$62.4	$33.8				
03-045	HM-TEK	Cook Inlet Subsistence Fisheries Harvest Assessment	ADF&G				$107.8			
		Subtotal		$88.3	$62.4	$33.8	$107.8	$0.0	$0.0	$0.0
		Total Southcentral Monitoring Program		$382.7	$916.0	$1,131.5	$1,085.8	$943.3	$705.8	$531.0


Map 1. 2005 Southcentral Investigation Plans
Stock Status Trends
Harvest Monitoring/ Traditional Ecological Knowledge
USDA
STOCK STATUS & TRENDS
501 Copper River Sockeye Distribution
502 Copper River Steelhead
HARVEST MONITORING/ TRADITIONAL ECOLOGICAL KNOWLEDGE
553 Changes in Subsistence Salmon Harvest on Copper River
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Federal, and other organizations (**Table 2**). Submitted budgets also identified the portion of funds that would be used to hire local residents, as well as the amount of matching funds to be contributed by investigators (**Table 3**).

Each investigation plan was reviewed as previously described. Evaluation criteria are:

- Strategic importance
- Technical and scientific merit
- Past performance and administrative expertise
- Partnership and capacity building

Table 2. Southcentral region project costs, by organization (Alaska Native, State, Federal, other), for investigation plans submitted to the Fisheries Resource Monitoring Program for funding consideration in 2005.

		Project Costs ($000s)			
Project Number	Title	Alaska Native	State	Federal	Other
	Stock Status and Trends Projects				
05-501	Spawning Distribution and Run Timing of Copper River Sockeye Salmon	$210.0	$ 15.1		
05-502	Abundance, Timing, and Distribution of Copper River Steelhead	$ 25.0	$ 11.5		
	Harvest Monitoring and Traditional Ecological Knowledge Project				
05-553	Changes in Subsistence Salmon Harvests on Copper River	$ 42.7	$ 42.1		

Table 3. Southcentral region local hire and matching funds for investigation plans submitted to the Fisheries Resource Monitoring Program for funding consideration in 2005. Abbreviations used for investigators were: ADF&G= Alaska Department of Fish and Game, NVE=Native Village of Eyak

			Funding ($000s)	
Project Number	Lead Organization	Title	Local Hire	Matching
		Stock Status and Trends Projects		
05-501	NVE	Spawning Distribution and Run Timing of Copper River Sockeye Salmlon	$ 15.2	$ 4.7
05-502	ADF&G	Abundance, Timing, and Distribution of Copper River Steelhead	$ 19.4	$117.0
		Harvest Monitoring and Traditional Ecological Knowledge Projects		
05-553	ADF&G	Changes in Subsistence Salmon Harvests on Copper River	$ 0.0	$ 0.0

Available Funds

Federal Subsistence Board guidelines direct initial distribution of funds among regions and data types. For 2005, $286,500 is available for funding new projects in the Southcentral region. Two thirds of this ($191,000) is available for stock status and trends projects, and one-third ($95,500) is available for harvest monitoring and traditional ecological knowledge projects.

Recommendations for Funding – Stock Status and Trends Projects

A total of two stock status and trends projects were forwarded for development of investigation plans (**Table 4**).

Table 4. Southcentral Stock Status and Trends investigation plans submitted to the Fisheries Resource Monitoring Program for funding consideration and Technical Review Committee funding recommendations in 2005.

Project		Recommendation	Requested Budget ($000s)		
Number	Title	TRC	2004	2005	2006
05-501	Spawning Distribution and Run Timing of Copper River Sockeye Salmon	Yes	$225.1	$225.1	$225.1
05-502	Abundance, Timing, and Distribution of Copper River Steelhead	Yes	$ 36.5	$ 36.8	
	Total		$261.6	$261.9	$225.1
	2005 Guideline, by Data Type		$191.0		
	TRC Recommendation		$261.6	$261.9	$225.1

Assessment of Sockeye Salmon:

Sockeye salmon are the primary target species for subsistence fishers in the Copper River, and abundance in the Copper River mainstem is largely addressed at the Miles Lake sonar, funded and operated by ADF&G Division of Commercial Fisheries. The key, unfulfilled information need is assessment of timing and distribution by spawning stock. This information is fundamental to evaluating the usefulness of management actions such as the 2004 Special Action to close subsistence fishing in late May in an effort to lessen exploitation on upriver stocks. Further, this information would provide important context for evaluating tributary escapements, such as currently being funded at Tanada Creek and Long Lake. The proposal 05-501 *Spawning Distribution and Run Timing of Copper River Sockeye Salmon* directly addresses this information need. This principal investigator for this project is Native Village of Eyak. In partnership with LGL Ltd. and ADF&G Sport Fish Division, these investigators have already demonstrated the feasibility of conducting this work for Chinook salmon (02-015, completed after 2004), and propose to effectively add value to the substantial investment by the Monitoring Program in 04-503. This project provides the opportunity for very strong capacity building. In summary, this project is of the highest strategic importance for Federal subsistence management, technically sound, cost effective, and administratively competent. Although the budget is in excess of the

guideline for this region/data type, the TRC strongly recommends that funds be made available for this project.

Assessment of Steelhead:

Steelhead are harvested incidentally to subsistence effort for sockeye and Chinook salmon on the Copper River. Given the differential magnitude of harvest and management intensity, informational needs for steelhead are of lesser importance than for salmon. At issue is maintaining sustainability of an undoubtedly small resource on the northern edge of its range. The Monitoring Program has previously invested in some assessment of steelhead harvest during the late May subsistence fishery (01-035), and of steelhead spawning abundance in the two known spawning stocks (01-148, Dickey Hanagita lakes). Subsistence harvest during late May is small, as is spawning abundance of these two stocks (hundreds of fish). At question is the relative importance of these two spawning stocks. The proposal 05-502 *Relative Abundance, Migratory Timing, and Over Wintering and Spawning Distributions of Steelhead in the Copper River Drainage* directly addresses this question. This proposal is technically sound, administratively competent, adds to capacity building opportunities, and makes further use of the prior Monitoring Program funding commitments, as well as the recommendation to fund 05-501. Further, the investigators provide substantial matching funds, including a 2004 pilot study to investigate capture techniques. The TRC recommends funding for this project.

Technical Review Committee Recommendation for Stock Status And Trends Projects:

In total, the Technical Review Committee recommends funding for stock status and trends projects in the following order of priority:

05-501	Spawning Distribution and Run Timing of Copper R Sockeye	$225,100
05-502	Abundance, Timing, and Distribution of Copper R Steelhead	$ 36,500

Recommendations for Funding – Harvest Monitoring and Traditional Ecological Knowledge Projects

The Technical Review Committee recommended one harvest monitoring and traditional ecological knowledge project for development of an investigation plan (**Table 5**). Project 05-553 *Factors Contributing to Changes in Salmon Harvests in the Copper River Basin* addresses the information need for Copper River salmon to identify and evaluate environmental, demographic, regulatory, and socioeconomic factors affecting subsistence uses. Obtaining contextual information to understand harvest patterns over time for Federally qualified subsistence users provides information for consideration of further regulatory development. The TRC raised several questions and concerns with the proposed methodology, and these were addressed in a revised IP. The TRC recommends funding this project:

05-553	Changes in Salmon Harvests in the Copper R. Basin	$ 84,819

Table 5. Southcentral Harvest Monitoring and Traditional Ecological Knowledge investigation plans submitted to the Fisheries Resource Monitoring Program for funding consideration and Technical Review Committee funding recommendations in 2005.

Project Number	Title	Recommendation TRC	Requested Budget ($000s) 2004	2005	2006
05-553	Changes in Subsistence Salmon Harvests on Copper River	Yes	$84.8		
	Total		$84.8		
	2005 Guideline, by Data Type		$95.5		
	TRC Recommendation		$84.8		

Recommendations for Funding – Summary and Data Type Analysis

It is the responsibility of the TRC to develop the strongest possible 2005 monitoring plan: for each region and across the entire state. To enable comparisons across regions, the TRC recommends a 2005 Monitoring Plan for the Southcentral Region in the following order of priority:

05-501	Spawning Distribution and Run Timing of Copper R Sockeye	$225,100
05-553	Changes in Salmon Harvests in the Copper R. Basin	$ 84,819
05-502	Abundance, Timing, and Distribution of Copper R Steelhead	$ 36,500

Projects recommended for funding total $346,419; in excess of the funding guideline ($286,500) for this region. However, these projects provide a compelling package that addresses important informational needs. The investigators will need to address technical issues in a revised IP for 05-553 prior to funding. There are sufficient monies elsewhere in the Monitoring Program to fund this package as recommended by the TRC.

Recommended for Funding

05-501
Spawning Distribution and Run Timing of Copper River Sockeye Salmon

Geographic Area: Copper River

Information Type: Stock Status and Trends

Principal Investigator: Keith Van Den Broek, Native Village of Eyak
P.O. Box 1388
509 First Street
Cordova, AK 99574
Phone: (907) 424-7738
keith@nveyak.org

Co-Investigator: Jason Smith, LGL Alaska Research Associates, Inc.
James Savereide, Alaska Dept of Fish and Game, Div of Sport Fish

Cost:	2005	2006	2007
	$225,126	$225,126	$225,166

Issue

The purpose of this project is to estimate the run timing and spawning distribution of sockeye salmon stocks returning to the Copper River. Currently, there is limited information on the stock-specific migration rates of sockeye salmon traveling from the Copper River District (and Miles Lake sonar site) through the inriver fisheries, particularly as related to environmental factors such as stage height. Information from this project can be used by fishery managers to better manage the subsistence fishery for individual stocks, which ultimately could lead to increased subsistence harvest opportunities on healthy stocks. This project addresses subsistence fisheries-monitoring issues for Copper River sockeye salmon as outlined by the Federal Subsistence Regional Advisory Council.

Objectives

1. Estimate the proportions of sockeye salmon returning to the major spawning tributaries of the Copper River (Chitina, Tonsina, Klutina, Tazlina, Gulkana and Upper Copper rivers).

2. Describe the stock-specific, migratory timing profile of sockeye salmon.

Methods

This study will estimate the proportion of spawning sockeye salmon in each of six major spawning tributaries of the Copper River and describe the migratory timing profiles for

each stock. To achieve this objective, 500 sockeye salmon will be radio tagged each year at two fishwheels located in Baird Canyon (rkm 66) and tracked throughout the basin using a combination of fixed-station receivers and aerial surveys.

Products

An annual report will be written after each field season and the Native Village of Eyak will host a public workshop in Cordova each year.

Experience of Investigators

Keith Van Den Broek, M.Sc., tribal biologist with the Native Village of Eyak, will be the project manager. Jason Smith, M.R.M., a fishery biologist with LGL Alaska Research Associates, Inc., has 7 years of experience in fisheries research and has worked on several fish wheel, mark-recapture and radio-telemetry studies in Alaska, Washington and British Columbia. James Savereide, M.Sc., Alaska Department of Fish and Game, Sport Fish Division, has extensive fisheries experience in Alaska and has conducted adult Chinook salmon radio-telemetry projects on the Copper River since 1999.

Partnerships/Collaborations

This project will promote the interaction between a major subsistence group (NVE) and various management agencies (USDA Forest Service, U.S. Fish and Wildlife Service, Alaska Department of Fish and Game). The study design will engage tribal organizations from different regions of the Copper River drainage in discussions on the project and promote interactions amongst subsistence users. The Native Village of Eyak will continue to work with their Tribal Council, staff, consultants and government agencies to identify key personnel to help carry on a long-term fisheries-monitoring program.

Recommendation: *Fund.*

Justification

This project is of the highest strategic importance for Federal subsistence management, and directly addresses data needs for both long-standing and current questions of in-season management. Further, this project rates very high in all other evaluation criteria. Cost is appropriate for this work, although greater than the guideline for this data type. Never-the-less, this is an outstanding proposal that addresses a very high priority issue, and funding should be provided for this project.

Recommended for Funding

05-502
Relative Abundance, Migratory Timing, and Overwintering and Spawning Distribution of Steelhead in the Copper River Drainage

Geographic Area: Southcentral

Information Type: Stock Status and Trends

Principal Investigator: Klaus Wuttig, Alaska Dept of Fish and Game (ADF&G)
Sport Fish Division
1300 College Rd.
Fairbanks, AK 99701
Phone: (907) 459-7344, Fax: (907) 456-2259
klaus_wuttig@fishgame.state.ak.us

Co-Investigator: Bruce Cain, Native Village of Eyak
Eric Veach, National Park Service Wrangell/St. Elias
Elijah Waters, Bureau of Land Management

Cost:	**2005**	**2006**
	$ 36,500	$ 36,769

Issue

This study will gather information to address stock status and trends issue #1 from the 2005 Issues and Information Needs of the Southcentral Copper River Region. The objectives are designed to estimate and describe the distribution (spawning and overwintering), relative abundance, and migratory timing of steelhead *Oncorhynchus mykiss* in the Copper River drainage using radiotelemetry. Attaining a measure of total run size is needed to assess the vulnerability of these stocks to overexploitation and the need for greater conservation measures such as more restrictive fishing seasons or methods (e.g. no subsistence fishing during the out-migration period of adult steelhead in late May, the inclusion of live boxes on fishwheels, or the closure of sport fisheries). Documentation of significant spawning and overwintering locations throughout the drainage is necessary to adequately manage and protect these critical habitats.

Objectives:

1. Estimate the proportion of Copper River steelhead that migrate to both the Dickey Lake and Hanagita Lake spawning areas such that all estimates are within 10 percentage points of the true values 95% of the time.

2. Describe the migratory timing profile (upriver and downriver) of the steelhead return in the Copper River at the point of capture and investigate potential stock-specific differences in run timing.

A secondary task will be to document significant steelhead aggregations in the Copper River drainage during spawning and overwintering periods.

Methods

This study will use radiotelemetry to determine the relative size of the total return of steelhead to the Copper River drainage. This will be accomplished by estimating the relative contribution of the Dickey and Hanagita lake stocks, for which abundance information has been attained, to the drainage-wide steelhead spawning escapement. Steelhead will be captured using a fish wheel and dip nets located on the east and west banks of the Copper River near Chitina from approximately 20 August to 10 October in 2005 and 2006. Each year, 130 radio tags will be distributed in proportion to fish passage. Run-timing information and documentation of significant spawning and overwintering locations will be attained using a network of 9 ground-based tracking stations positioned strategically throughout the drainage and aerial surveys conducted at biologically meaningful periods (e.g. spawning and overwintering).

Products

Project findings will be reported to the Office of Subsistence Management in the form of three performance reports due December 1, 2005-2007, two annual reports due May 1, 2006 and 2007, and a final report that will be completed by July 1, 2008.

Experience of Investigators

ADF&G, Sport Fish Division has a well-developed process of fisheries research planning, execution, and reporting. The primary investigators, Klaus Wuttig and James Savereide, each have over six years of experience in planning radiotelemetry research projects in remote areas of Alaska. Confidence in the ability to complete the project objectives is high. The proposed project is similar to the ongoing Copper River Chinook salmon radiotelemetry project that has been successfully conducted since 1999 where James Saveriede is serving as the principle investigator. The Native Village of Eyak's ability to capture salmon using fish wheels in the Copper River has been well demonstrated; therefore our confidence in their fish-wheel crews to capture sufficient numbers of steelhead is high.

Partnerships/Collaboration

Financial consultations have been ongoing with Eric Veach of the NPS and Elijah Waters of the BLM, Glennallen office. Both organizations have agreed to provide financial and in-kind support to help in the project's success. The Native Village of Eyak (NVE) supports this study and their level of involvement depends on the proposed Copper River sockeye salmon study (FIS 05-502). If this proposal is funded and if the Copper River sockeye salmon proposal is funded, funding will be provided to NVE for extending their upriver fishwheel operations for 4-6 weeks to capture and radio-tag steelhead. NVE, NPS, and BLM will be involved in the data collection, analysis, and reporting of results.

Recommendation: *Fund.*

Justification

This project addresses the highest informational need for steelhead assessment; however, information for steelhead ranks third in order of priority for this region, and well behind Copper River salmon. This project rates extremely high for technical merit and past performance. Timing to conduct this work is critical, as it builds upon 05-501, which is recommended for funding. The investigators provide significant matching funds including pilot work in 2004.

05-553
Factors Contributing to Changes in Subsistence Salmon Harvests in the Copper River Basin

Geographic Area: Southcentral

Information Type: Harvest Monitoring and Traditional Ecological Knowledge

Principal Investigator: Dr. William E. Simeone, Alaska Dept of Fish and Game (ADF&G)
Division of Subsistence
Phone: (907) 267-2309

Erica McCall, Partners for Fisheries Monitoring Program
Native Village of Eyak
Phone: (907) 424-3847

Co-Investigator: Katherine Martin, Mentasta Tribal Council
Julie Bator, Tazlina Tribal Council
JoeNeal Hicks, Cheesh'na Tribal Council
Bry Claw, Gulkana Tribal Council

Cost:	2004	2005	2006
	$ 84,819	$0	$0

Issue

In their final report, the Subsistence Fisheries Harvest Assessment Working Group recommended collecting "contextual information that would assist managers in evaluating and interpreting subsistence harvest data" (Fall and Shanks 2000). The justification for collecting this type of data was that there is "little contextual information available for managers and users to understand changes in harvests from year to year" (Fall and Shanks 2000). In addition, leaders from most of the Ahtna communities have expressed concern that quantitative harvest data does not represent the complete story of how local people's lives have changed and what influences sometimes influence traditional subsistence harvest pursuits. The goal of this project is to provide a context for Copper River subsistence harvest data, and is therefore, a direct response to recommendations of the Harvest Assessment Working Group, as well as issues and information needs identified by OSM-FIS, and Copper River Basin Ahtna leaders. This project will provide information useful in evaluating current subsistence fishery regulations, regulatory proposals, and fisheries management actions, as well as, a tool for understanding trends in the subsistence salmon harvest.

Objectives

1. To determine, using all available quantitative harvest data, if there has been a change, over the last 125 years, in the subsistence harvest of salmon by federally qualified users in the communities of Mentasta, Chistochina, Gulkana, and Tazlina.
2. To hypothesize possible factors that explain observed changes in the subsistence harvests and to test those explanations against quantitative measures, when possible, and against interview data collected from residents of the study communities.
3. To develop comprehensive explanations for changes in the subsistence salmon harvest and to predict likely outcomes of current and potential regulations (completed by October 30, 2006.

Methods:

Methodology includes the collection and assessment of quantitative harvest data, demographic, and economic data, and interviews with local subsistence users about changes in their harvest.

Products

A report of the results will be written and adhere to the standards and deadlines outlined in the intra-agency agreement between Alaska Department of Fish and Game and the U.S. Wildlife Service.

Experience of Investigators

Dr. William Simeone (Subsistence Resource Specialist III) has worked on various fisheries projects in the Copper River Basin over the last eight years. Erica McCall Valentine, MEnviSci, Southcentral Regional Social Scientist, is employed by the Native Village of Eyak under the Partners for Fisheries Monitoring Program.

Partnerships/Collaboration

This project is a collaborative effort between the Division of Subsistence, the Tribal entities of the Copper River Basin, and the Partners for Fisheries Monitoring Program Southcentral Regional Social Scientist. The Tribal entities will share in the work by helping develop interview protocols, conducting key respondent interviews, and assisting in the review the final report. The partnerships and capacity development aspects of this project are numerous.

Recommendation: *Fund.*

Justification

This project addresses an important issue that has been identified by the Southcentral Regional Advisory Council and was also identified as a medium priority at the recently held Southcentral strategic planning workshop. The proposal has some technical and budgetary issues that were addressed in a revised Investigation Plan (IP). Inclusion of the Southcentral social scientist greatly strengthens the proposal.

2005 DRAFT FISHERIES RESOURCE MONITORING PLAN SOUTHEAST REGION OVERVIEW

ISSUES AND INFORMATION NEEDS

Original guidance for the Fisheries Resource Monitoring Program (Monitoring Program) was provided by the Federal Subsistence Board and outlined in the *Operational Strategy for Information Management*[1]. Since that time, the Southeast Regional Advisory Council (Council) has identified issues and information needs for the region[2]. These issues and information needs are annually reviewed and updated at Council meetings. For the Southeast Region, the Council recommends projects that address (in order of priority):

1. Traditional Ecological Knowledge
2. Harvest Monitoring
3. Salmon assessment, particularly sockeye and coho salmon
4. Assessment of fish species (other than salmon) important to subsistence use; particularly Prince of Wales steelhead and Behm Canal eulachon.

To ensure that the Monitoring Program addresses the highest priority information needs for Federal subsistence fisheries management, the Office of Subsistence Management began a strategic planning process this year to build on the work done by the Councils. Facilitated workshops for the Southcentral (Copper River and Prince William Sound) and Southwest (Bristol Bay-Chignik) regions were held in April and May with representatives of Federal and State agencies, academia, Alaska Native and rural organizations, and affected Councils. Participants at each workshop identified fisheries units for their region; developed goals, objectives, and information needs for each fishery unit; and began the prioritization process for fishery units and goals, objectives and information needs. This fall, follow up workshops will be held for each of the two regions to complete the prioritization process and identify knowledge gaps for each information need. Based on workshop results, prioritized information needs lists will be developed and used to focus the Call for Proposals for the Monitoring Program. Strategic planning workshops will be held for each of the seven geographic regions, and the entire planning process is anticipated to take at least four years.

[1] Krueger, C., Brelsford, T., Casipit, C., Harper, K., Hildebrand, I., Rost, P., Thompson, K., and Jones, L. 1999. Federal Subsistence Fisheries Management: Operational Strategy for Information Management. Report to the Federal Subsistence Staff Committee by the Sub-Committee for the Development of a Blueprint for Interagency Functions, Roles, and Responsibilities. 122 p.

[2] Office of Subsistence Management. 2004. Issues and Information Needs, Federal Subsistence Fisheries, 2005 Fisheries Resource Monitoring Program. 14 p.

Projects already funded under the Monitoring Program

A total of 10 projects are already funded in the Southeast Region for 2005 (**Table 1**). Most (8) of these projects were approved as part of the 2004 Monitoring Plan. All of these projects address assessment of salmon stocks or subsistence fisheries for salmon. Most of the Monitoring Program is directed at assessment of sockeye escapements that support subsistence fisheries. The 2004 Monitoring Plan continued assessments for Klawock and Hetta lakes on PWI; Kanalku and Sitkoh lakes near Angoon; Falls, Gut, and Kutlaku lakes near Kake; and Klag and Salmon lakes near Sitka. Assessments for Neva and Pavlof lakes near Hoonah, and Redfish Lake near Sitka; will be completed in 2004. In the 2004 Monitoring Plan, projects were also initiated to conduct subsistence salmon harvest surveys and key informant interviews in Sitka, and also to construct a qualitative fisheries database.

Projects Forwarded for Investigation Plans

The Technical Review Committee forwarded a total of 5 projects for development of investigation plans (**Map 1**). Three are stock status and trends projects, and two are harvest monitoring/traditional ecological knowledge projects.

Investigators used Technical Review Committee proposal review comments, and sometimes worked with OSM staff, to develop investigation plans. Detailed budgets submitted with each investigation plan allowed funding requests to be summarized according to Alaska Native, State, Federal, and other organizations (**Table 2**). Submitted budgets also identified the portion of funds that would be used to hire local residents, as well as the amount of matching funds to be contributed by investigators (**Table 3**).

Each investigation plan was reviewed as previously described. Evaluation criteria are:

- Strategic importance
- Technical and scientific merit
- Past performance and administrative expertise
- Partnership and capacity building

Available Funds

Federal Subsistence Board guidelines direct initial distribution of funds among regions and data types. For 2005, $413,100 is available for funding new projects in the Southeast region. Two thirds of this ($275,400) is available for stock status and trends projects, and one-third ($137,700) is available for harvest monitoring and traditional ecological knowledge projects.

Recommendations for Funding – Stock Status and Trends Projects

A total of three stock status and trends projects were forwarded for development of investigation plans (**Table 4**).

Table 1. Summary of projects funded under the Fisheries Resource Monitoring Program in the Southeast region, 2000 -2006. Abbreviations used by investigators are: ACA=Angoon Community Association, ADF&G=Alaska Department of Fish and Game, CCTHITA=Central Council of Tlingit & Haida Indian Tribes of Alaska, HCA=Hydaburg Cooperative Assnociation, HIA=Hoonah Indian Association, KCA=Klawock Cooperative Association, NPS=National Park Service, OVK=Organized Village of Kake, STA=Sitka Tribe of Alaska, TST=Third Sector Technologies, USDA-FS=USDA Forest Service, WCA=Wrangell Cooperative Association, YTT=Yakutat Tlingit Tribe

Project Number	Data Type	Project Title		Investigators	Budget ($000s) 2000	2001	2002	2003	2004	2005	2006
		Estimation of Sockeye Salmon Escapement									
00-043	SST	Klawock Lake Sockeye Assessment		ADF&G, KCA	$164.1	$197.9	$207.2				
00-044	SST	Falls Lake Sockeye Stock Assessment		ADF&G, OVK	$132.3	$140.3	$145.6				
01-125	SST	Gut, Kook, and Hoktaheen L Sockeye Esc Index		ADF&G, OVK		$160.4	$141.1				
01-125	SST	Falls, Gut, Kutlaku Subsistence Sockeye Stock Assessment	a,b	ADF&G, OVK				$137.1			
01-127	SST	Thoms, Salmon Bay, Luck L Sockeye Esc Index		ADF&G, WCA		$100.5	$115.9	$108.2			
01-128	SST	Klag Bay Sockeye Salmon Stock Assessment		ADF&G, STA, USDA-FS		$198.4	$148.5	$81.5			
01-130	SST	Hetta Lake Sockeye Stock Assessment	b	ADF&G, HCA		$121.3	$101.1	$50.2			
01-175	SST	Salmon Lake Sockeye and Coho Stock Assessment		ADF&G, STA, NSRAA, USDA-FS		$197.5	$68.0	$170.1			
01-179	SST	Virginia Lake Sockeye Assessment		USDA-FS		$103.8	$85.1	$87.2			
02-012	SST	Neva, Pavlof Sockeye Stock Assessment		USDA-FS, HIA			$71.8	$75.8	$80.3		
02-017	SST	Redfish Bay Sockeye Stock Assessment		STA, ADF&G, USDA-FS			$186.5	$175.0	$186.6		
03-007	SST	Eek Lake Sockeye Stock Assessment		HCA, ADF&G				$58.4			
04-604	SST	Klawock Lake Sockeye Assessment	d	ADF&G, KCA					$171.6		
04-605	SST	Kanalku, Sitkoh Lakes Sockeye Stock Assessment		ADF&G, ACA					$85.3	$88.7	$94.6
04-606	SST	Hetta Lake Sockeye Stock Assessment		ADF&G, HCA					$91.7	$94.1	$96.1
04-607	SST	Falls, Gut, Kutlaku Subsistence Sockeye Stock Assessment	d	ADF&G, OVK					$130.0	$135.6	$146.1
04-608	SST	Salmon Lake Sockeye Stock Assessment	e	STA					$91.5	$115.2	$115.2
04-609	SST	Klag Bay Sockeye Salmon Stock Assessment		STA, ADF&G, USDA-FS					$114.4	$117.2	$118.2
		Subtotal			$296.4	$1,220.1	$1,270.8	$943.5	$951.4	$550.8	$570.2
		Documentation of Subsistence Use Patterns									
00-015	HM-TEK	Southeast Alaska Subsistence Fisheries Database Development		ADF&G	$48.1						
00-045	HM-TEK	Traditional Subsistence Territory Mapping of SE Tribes		USDA-FS, OVK, ACA, HIA	$150.0	$150.0	$150.0				
01-103	HM-TEK	Continuing Management and Development of the SE Subsistence Fisheries GIS Database		ADF&G		$29.2					
01-104	HM-TEK	Kake Subsistence Sockeye Salmon Harvest Use Pattern		ADF&G, OVK		$70.6					
01-105	HM-TEK	Klawock R and Sarkar L Sockeye Salmon Harvest Use Patt.		ADF&G, KCA		$72.6					
01-105	HM-TEK	Prince of Wales Island Steelhead/Rainbow Trout Harvest Use Patterns	c	ADF&G				$40.0			
01-091	HM-TEK	East Alsek R Salmon Historical Use and TEK		YTT		$25.0					
02-038	HM-TEK	SE Subsistence Fisheries GIS Database Development		ADF&G, CCTHITA, TST			$40.0	$40.0			
02-049	HM-TEK	Wrangell Subsistence Salmon Harvest Use Pattern		ADF&G, WCA, USDA-FS			$30.8	$33.9			
02-104	HM-TEK	Hoonah and Klawock Salmon Survey		ADF&G, CCTHITA, TST			$80.8	$24.2			
04-651	HM-TEK	TEK and Subsistence Salmon Monitoring in SE Alaska		STA, ADF&G					$79.3	$146.0	$88.6
04-652	HM-TEK	Subsistence TEK Database		ADF&G, STA					$82.8	$88.5	$98.1
		Subtotal			$198.1	$347.4	$301.6	$138.1	$162.1	$234.5	$186.7
		Total Southeast Monitoring Program			$494.5	$1,567.5	$1,572.4	$1,081.6	$1,113.5	$785.3	$756.9

[a] Systems to be monitored changed for 2003.
[b] The Monitoring Program funded 50% of the total cost of these projects in 2003. The remaining money provided by the SSSF.
[c] Supplement to previously funded 01-105.
[d] The Monitoring Program funded operational costs of these projects in 2004-2006. The remaining money for staff salaries provided by the SSSF.
[e] Assessment for coho in 2004-2005 funded by the SSSF.

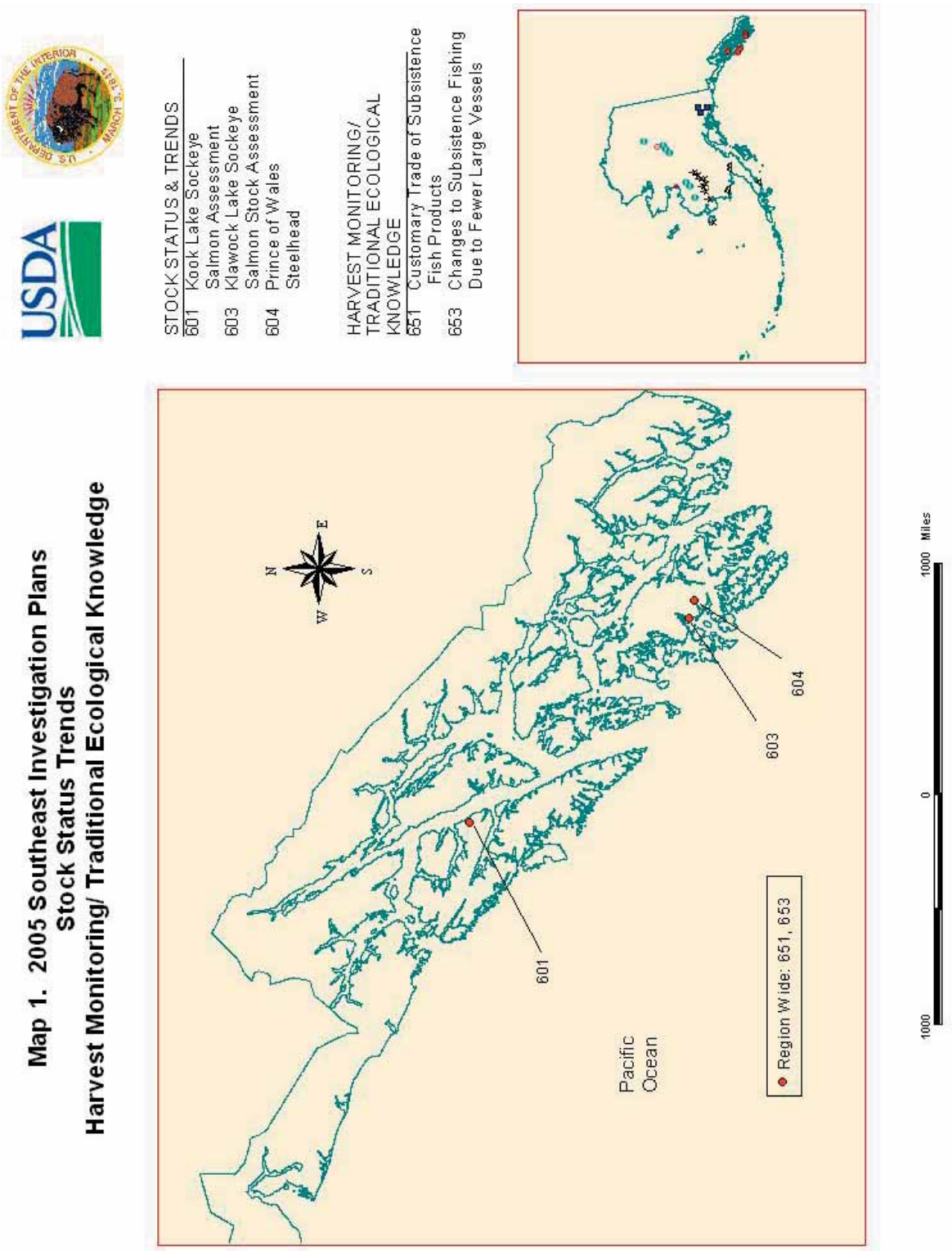

Map 1. 2005 Southeast Investigation Plans
Stock Status Trends
Harvest Monitoring/ Traditional Ecological Knowledge
USDA
STOCK STATUS & TRENDS
601 Kook Lake Sockeye Salmon Assessment
603 Klawock Lake Sockeye Salmon Stock Assessment
604 Prince of Wales Steelhead
HARVEST MONITORING/ TRADITIONAL ECOLOGICAL KNOWLEDGE
651 Customary Trade of Subsistence Fish Products
653 Changes to Subsistence Fishing Due to Fewer Large Vessels
N
E
S
W
601
603
604
Pacific Ocean
Region Wide: 651, 653
1000
0
1000 Miles

Table 2. Southeast region project costs, by organization (Alaska Native, State, Federal, other), for investigation plans submitted to the Fisheries Resource Monitoring Program for funding consideration in 2005.

Project Number	Title	Alaska Native	Project Costs ($000s) State	Federal	Other
	Stock Status and Trends Projects				
05-601	Kook Lake Sockeye Salmon Assessment	$ 49.9	$ 3.6	$ 25.1	
05-603	Klawock Lake Sockeye Salmon Stock Assessment	$ 29.1	$135.1		
05-604	POW Steelhead	$ 82.9	$ 44.8	.	
	Harvest Monitoring and Traditional Ecological Knowledge Projects				
05-651	Customary Trade of Subsistence Fish Products	$ 13.5			$ 66.2
05-653	Changes to Subsistence Fishing Due to Fewer Large Vessels	$ 15.7			$ 66.2

Table 3. Southeast region local hire and matching funds for investigation plans submitted to the Fisheries Resource Monitoring Program for funding consideration in 2005. Abbreviations used for investigators were: ADF&G=Alaska Department of Fish and Game, BIA= Bureau of Indian Affairs, CCTHITA=Central Council of Tlingit and Haida Indian Tribes of Alaska, USDA-FS=USDA Forest Service

Project Number	Lead Organization	Title	Funding ($000s) Local Hire	Matching
		Stock Status and Trends Projects		
05-601	USDA-FS	Kook Lake Sockeye Salmon Assessment	$ 32.0	$ 20.0
05-603	ADF&G	Klawock Lake Sockeye Salmon Stock Assessment	$ 41.7	$ 32.0
05-604	BIA	POW Steelhead	$ 57.5	$231.2
		Harvest Monitoring and Traditional Ecological Knowledge Projects		
05-651	CCTHITA	Customary Trade of Subsistence Fish Products	$ 9.9	
05-653	CCTHITA	Changes to Subsistence Fishing Due to Fewer Large Vessels	$ 6.0	

Table 4. Southeast stock status and trends investigation plans submitted to the Fisheries Resource Monitoring Program for funding consideration and Technical Review Committee funding recommendations in 2005.

Project Number	Title	Recommendation TRC	Requested Budget ($000s) 2005	2006	2007
05-601	Kook Lake Sockeye Salmon Assessment	Yes	$78.6	$79.6	$81.6
05-603	Klawock Lake Sockeye Salmon Stock Assessment	Yes	$164.2	$167.8	
05-604	POW Steelhead	Yes	$127.7	$136.9	$156.9
	Total		$370.5	$384.3	$238.5
	Funding Guideline		$275.4		
	TRC Recommendation		$370.5	$384.3	$238.5

Assessment of Sockeye Salmon:

Sockeye salmon are the primary target species for subsistence fishers in the Southeast region. Both stocks under consideration (Klawock and Kook lakes) have been previously funded by the Monitoring Program, and address subsistence management issues. Both projects have adequate performance histories and have provided useful and timely results. Although government agencies serve as the PI, both projects have significant capacity building components. Each project includes an Alaska Native organization as co-investigator, which is directly funded for seasonal personnel (local hire). In summary, both of these projects are strategically important, technically adequate, administratively competent, and promote capacity building.

Assessment of Klawock Lake sockeye is arguably the highest priority for sockeye salmon stock assessment information in Southeast Alaska. Klawock Lake was one of the first two systems addressed by the Monitoring Program in 2000 (the other was Falls Lake). Klawock Lake was recognized as the top priority for stock assessment in the 2004 Monitoring Plan (ahead of 9 other sockeye stocks and PWI steelhead). However, funding was approved only for 2004 to address TRC concerns with cost and technical questions. The IP currently under consideration for 2005-2006 fully addresses these concerns. Further, co-funding through the SSSF has already been secured for the Klawock project in 2005-2006. In summary, the TRC recommends funding in the following order of priority: (1) Klawock Lake Sockeye Assessment (05-603); and (2) Kook Lake Sockeye Assessment (05-601).

Assessment of Steelhead on Prince of Wales Island:

Management of subsistence fisheries for steelhead on PWI is one of the largest issues before the Federal Subsistence Board. The FSB has deliberated regulatory proposals on this issue each year since 2000, and will do so again during the upcoming fishery regulatory cycle. Fishery assessment through permit data from the first two years of spring fisheries (2003 and 2004) indicate relatively small fisheries targeting (what are believed to be) 'large' stocks with road access. Harvest was estimated at 26 and 25 fish, respectively, during the past two years.

An assessment proposal was not funded as part of the 2004 Monitoring Plan, largely due to technical and cost concerns. However, a 2004 pilot study was recently funded by USDA Forest Service and addressed questions of fish capture raised during the evaluation of the 2004 proposal. In addition to the pilot study, substantial matching funds (in total, approximately double the request to the Monitoring Program) are provided by all of the investigators, including BIA, OVK, ADF&G, and USDA Forest Service. The IP currently under consideration addresses all TRC concerns, and is recommended for funding.

Technical Review Committee Recommendation for Stock Status and Trends Projects:

In total, the Technical Review Committee recommends funding for stock status and trends projects in the following order of priority (**Table 4**):

05-603	Klawock Lake Sockeye Salmon Stock Assessment	$164,200
05-604	Prince of Wales Island Steelhead Assessment	$127,700
05-601	Kook Lake Sockeye Salmon Stock Assessment	$ 78,600

Recommendations for Funding – Harvest Monitoring and Traditional Ecological Knowledge Projects

The Technical Review Committee recommended two harvest monitoring and traditional ecological knowledge projects for development of investigation plans in the Southeast Region (**Table 5**). Funding requested for HM/TEK studies in Southeast totaled $161,500 in 2005. Investigators for both projects are identical.

Table 5. Southeast harvest monitoring and traditional ecological knowledge investigation plans submitted to the Fisheries Resource Monitoring Program for funding consideration and Technical Review Committee funding recommendations in 2005.

Project		Recommendation	Requested Budget ($000s)		
Number	Title	TRC	2005	2006	2007
05-651	Customary Trade of Subsistence Fish Products	No	$79.7	$44.9	
05-653	Changes to Subsistence Fishing Due to Fewer Large Vessels	No	$81.8	$41.6	
	Total		$161.5	$86.5	
	Funding Guideline		$137.7		
	TRC Recommendation		$0.0		

Both HM/TEK projects propose to address an issue of importance to the Southeast Regional Advisory Council, namely documentation of traditional ecological knowledge. Both projects are strategically important; particularly project 05-651 (*Customary Trade of Subsistence Harvested Fish Products in Southeast Alaska)*, which addresses regional patterns of customary trade, an important regulatory issue identified by the Federal Subsistence Board at their Spring 2003 meeting. Both projects are collaborative, include the potential for capacity building, and investigators have a record of successfully completing projects under the Monitoring Program.

However, most reviewers on the TRC found significant questions regarding methodology and therefore rated technical merit as low for both projects. At issue are study design and protocol for community interviews, how social networks will be addressed and incorporated, delegation of responsibilities, and development of a useable model. Further, these reviewers found the role of local research assistants unclear, as well as numerous and significant budget questions. In total, the majority of reviewers on the TRC concluded that a significantly revised IP would be required to address these concerns, and that this would best be accomplished in a subsequent submission during the next funding cycle.

This conclusion of low technical merit was not shared by all reviewers on the TRC. These reviewers felt that Project 05-651 in particular had a high and time sensitive strategic value. These reviewers found the IP sufficiently detailed to rate technical merit of at least medium, requiring only modest clarifications. In light of the clear track record of the co-investigator on a number of relevant Southeast Alaska projects, the TRC minority concluded that this was a viable

project and that any revisions to the IP for project 06-651 could be accomplished during this (2005) funding cycle.

When put to a vote, the majority of the TRC made the recommendation to not fund either project at this time. The entire TRC recommends that the issue of customary trade be identified as a high priority information need in the 2006 Call for Proposals.

Recommendations for Funding – Summary and Data Type Analysis

It is the responsibility of the TRC to develop the strongest possible 2005 monitoring plan: for each region and across the entire state. Given that no HM/TEK projects are recommended for funding, there are sufficient funds for all three SST projects recommended for funding:

05-603	Klawock Lake Sockeye Salmon Stock Assessment	$164,200
05-604	Prince of Wales Island Steelhead Assessment	$127,700
05-601	Kook Lake Sockeye Salmon Stock Assessment	$ 78,600

The recommended 2005 Monitoring Plan for the Southeast Region totals $370,500; within the funding guideline ($413,000) for this region. Additional monies are needed to fund the TRC recommendation for Southcentral Region, and should be used for that purpose.

Recommended for Funding

05-601
Kook Lake Sockeye Stock Assessment

Geographic Area: Southeast

Information Type: Stock Status and Trends

Principal Investigator: Ben Van Alen, Subsistence Fisheries Biologist
USDA Forest Service, Juneau Ranger District
8465 Old Dairy Road, Juneau, Alaska, 99801
Office 790-7426, fax 586-8808, cell 723-2995
bvanalen@fs.fed.us

Co-Investigators: Raynelle Jack, Angoon Community Association

Meg Cartwright, Alaska Dept of Fish and Game, Division of Commercial Fisheries

Jan Conitz, Alaska Dept of Fish and Game, Division of Commercial Fisheries

Cost:	2005	2006	2007
	$ 78,620	$ 79,578	$ 81,644

Issue

The current status of the Kook Lake (Basket Bay) sockeye run is poorly understood and of concern. We do not know if annual sockeye escapements are a few hundred fish or several thousand fish. Escapement survey counts and subsistence harvest estimates show declining trends; however, the usefulness of this information is questioned. Few sockeye salmon were marked and recaptured the past three seasons as part of Fishery Resource Monitoring Program project FIS01-126. Project personnel did not see many sockeye salmon in the system and deep water and logs made it difficult to seine fish in beach spawning areas. A weir project now appears to be the best method to measure escapements into this system.

Objectives

1. Estimate the total escapement of sockeye salmon into Kook Lake with a weir/mark-recapture project such that the estimated coefficient of variation is less than 15%.

2. Estimate the age, length, and sex composition of the Kook Lake sockeye escapement so that the estimated coefficient of variation is less than 10%.

3. Clear debris from the cavern entrances on the outlet stream.

Methods

An Angoon Community Association crew will install and operate an adult salmon weir on the outlet of Kook Lake from late-June through early-September of 2005, 2006, and 2007. Weir counts of sockeye salmon will be validated with a mark-recapture study. The age, sex, and length composition of sockeye salmon will be estimated.

Products

Performance and progress reports will be submitted annually and a final report will be submitted by May 2008.

Experience of Investigators

The USDA-FS and ADF&G investigators have many years of experience with data collection, analysis, and reporting on salmon stock assessment projects in Southeast Alaska. All investigators have proven experience on similar Fishery Resource Monitoring Program projects.

Partnerships/Collaboration

Crewmembers will be hired and employed by ACA. This cooperative ACA/USDA-FS/ ADF&G project will promote public support for our subsistence management program.

Recommendation: *Fund.*

Justification

Assessment of sockeye stocks that support important subsistence fisheries is recognized as the highest priority for SST projects, and this proposal ranks very high in all evaluation criteria. Arguably, assessment of this stock is of somewhat less importance than projects to assess Klawock sockeye and Prince of Wales Island steelhead. Significant co-funding is provided by the USDA Forest Service for the PI's salary.

Recommended for Funding

05-603
Klawock Lake Subsistence Sockeye Salmon Project

Geographic Area: Southeast

Information Type: Stock Status and Trends

Principal Investigators: Meg Cartwright and Jan Conitz, Fisheries Biologists
Alaska Department of Fish and Game (ADF&G)
Division of Commercial Fisheries
P.O. Box 240020, Douglas, Alaska, 99824-0020
Phone: (907) 465-4250; Fax (907) 465-4944
meg_cartwright@fishgame.state.ak.us
jan_conitz@fishgame.state.ak.us

Co-Investigators: Klawock Cooperative Association
Jeff Reeves, US Forest Service

Cost:	**2005**	**2006**
	$164,238	$167,798

Issue

Investigators will collect data on returning sockeye salmon to Klawock Lake and interview the subsistence fishers in the bay to assist fishery managers in ensuring that escapement and subsistence opportunities are adequate.

Objectives

1. Count the number of sockeye salmon returning to Klawock Lake through the weir.

2. Estimate the annual adult and jack sockeye escapement into Klawock Lake with mark-recapture methods, using the weir as a marking platform and the major spawning grounds as the recapture sites, so that the estimated coefficient of variation is less than 10%.

3. Estimate the spawning population in Three-Mile, Half-mile and Inlet streams using mark-recapture methods so that the estimated coefficient of variation is less than 15%.

4. Describe the size, sex and age distribution of sockeye salmon adults and jacks returning to Klawock Lake.

Methods

The primary focus of this research will be to estimate the number of sockeye salmon adults returning to spawn in Klawock Lake. Standard multi-event mark-recapture statistical methods will be used to estimate sockeye escapement. Sockeye adults will be marked at the weir. Seven or eight recapture events at the inlet streams will be conducted during the spawning season.

Products

Semi-annual progress reports will be submitted June and December of each year. An annual report will be submitted by December 31, 2005, 2006, and 2007. A Final report will be submitted by June 2008, synthesizing the work over several years. At least one public meeting will be held in Klawock to discuss the project results during this 3-year funding period.

Experience of Investigators

The Alaska Department of Fish and Game has a well-developed process of fisheries research planning, execution, and reporting. The Principle Investigator (Meg Cartwright), and the Project Leader (Jan Conitz) have experience in all aspects of these fisheries projects including study design, setting statistical thresholds, mark-recapture estimates, data analysis, report writing, supervision of field and project personnel, budget management, and presentations to the public, Board of Fisheries, tribal board of directors and the Southeast Subsistence Regional Advisory Council.

The Klawock Cooperative Association posts job announcements, interviews potential employees, hires two field technicians, and oversees the tribal payroll and budget.

The U. S. Forest Service subsistence fishery biologist in Craig (Jeff Reeves) will assist with these projects. The USDA-FS staff is experienced with collection and analysis of weir and mark-recapture data, age, sex and size data, limnology data, and harvest data.

Partnerships/Collaborations

Personnel from the three cooperating agencies, ADF&G, USDA-FS and Klawock Cooperative Association (KCA) have worked closely to ensure the success of the project through training, assistance in the field, and project and budget planning since 2000. Local residents and tribal governments are consulted on a regular basis. ADF&G staff will hold a community meeting in Klawock to describe the study, present the results of first year and get feedback from the community. The ADF&G project leaders and KCA staff communicate on a regular basis about personnel issues, project and budget planning, field expediting and natural resource issues.

Total Project Costs: (Dollars are shown in thousands)

	State	Federal	Non-Agency (KCA)	Total
2005	135.1	–	29.1	164.2
2006	135.7	–	32.1	167.8

Local Hire Costs (these costs are included in the Total Project Costs, above)

	State	Federal	Non-Agency (KCA)	Total
2005	16.8	–	24.9	41.7
2006	16.8	–	27.3	44.1

The Southeast Sustainable Salmon Fund (SSSF) will contribute $32,000 in Federal FY05 and FY06 towards ADF&G permanent staff that oversee this project.

Recommendation: *Fund.*

Justification

Assessment of sockeye stocks that support important subsistence fisheries is recognized as the highest priority for SST projects, and assessment of this stock is arguably the highest priority in Southeastern Alaska. This proposal ranks very high in all evaluation criteria. The IP addressed all previous comments by the TRC. Significant co-funding continues to be provided by the SSSF.

Recommended for Funding

05-604
Adult Steelhead Population Assessments on Prince of Wales Island

Geographic Area: Southeast

Information Type: Stock Status and Trends

Principal Investigators: Glenn Chen, Fisheries Biologists
Bureau of Indian Affairs, Alaska Region, Subsistence Branch
3601 C Street, Anchorage, Alaska, 99503
Phone: (907) 271-4111; Fax (907) 271-4083

Co-Investigators: Richard Peterson and Cathy Needham, Organized Village of Ka'saan
Roger Harding and Randy Mullen, ADF&G, SE Sportfish Research Division
Steve Hoffman and Steve McCurdy, ADF&G, SE Sportfish Research Division
Sheila Jacobsen and Jeff Reeves, USDA Forest Service, Craig Ranger District
Susan Howell, USDA Forest Service, Thorne Bay Ranger District

Cost:	2005	2006	2007
	$127,708	$136,908	$156,921

Issue

Steelhead (*Oncorhynchus mykiss*) comprise an important subsistence fishery for rural residents of Prince of Wales Island (southeast Alaska region). Contemporary subsistence steelhead harvest by PWI residents estimated across all 12 PWI communities was 770 fish, with most of this harvest being taken by rod and reel, and occurring primarily among residents of Craig, Klawock, and Hydaburg. Analysis of this data suggests that a total annual harvest of about 600 fish occurs on Federal lands on Prince of Wales Island. Proposed regulations that established a limited Federal subsistence fishery for this species were approved by the Federal Subsistence Board in December 2002.

Little historical information is available to document population sizes, age/sex/length characteristics, run timing, and/or spatial distribution of steelhead on the majority of Prince of Wales Island (PWI) streams. There are 74 drainages known to contain steelhead on Prince of Wales Island. At present, each system is being managed according to categories of "small" (<150) or "large" (>150) numbers of adult spawners. Lack of more recent and accurate data has hampered efforts to assess the potential effects of subsistence fishing and/or catch-and-

release sport angling, and prevents the refinement of regulations that would ensure adequate conservation of steelhead, while allowing for expanded harvest opportunities.

In contrast to other Pacific anadromous salmonids, there are unique aspects of steelhead life history and ecology that make this species more difficult to study. Biologists continue to be concerned that low to moderate levels of harvest on PWI streams could potentially create conservation concerns, in a number of these systems. At present, a proposal has been submitted to the Federal program to expand subsistence harvest opportunities for steelhead across the entire Region. Given that quantitative population data for these fish are unavailable for the majority of stocks in southeast Alaska, there is an urgent need to develop and test alternative enumeration methodologies that are cost-effective, efficient, and that can yield data with the precision sufficient for management by State and Federal agencies.

This project will provide much needed quantitative data on adult spawning populations, run timing, and age/sex/length characteristics within a subset of PWI streams that support steelhead harvests by local subsistence users, and provide research/development on alternatives to full duration weir studies. It addresses an important southeast Alaska region Federal subsistence fishery monitoring issue, identified by the SERAC during the fall 2002 meetings, and listed in their current Issues and Information Needs.

Objectives

1. Estimate the abundance of returning adult spring steelhead in a sub-set of seven to nine Prince of Wales Island streams, representing management categories of "large" (N > 150) versus "small" (N < 150) populations of fish.

2. Quantitatively estimate the sex and length compositions, and incidence of repeat spawning, of spring-run adult steelhead in the selected sub-set of PWI streams.

Methods

This project is being proposed as a 3-year study (FY 2005 - 2007) to obtain quantitative information on the abundance of spring adult steelhead stocks in seven (7) freshwater stream systems on Prince of Wales Island (representing 10% of the Island's steelhead systems). If funded, it will also expand upon a pilot effort that has been initiated in by ADF&G and USDA-FS on the Island in spring 2004, in 12-Mile Creek.

STEELHEAD ABUNDANCE

STEELHEAD ABUNDANCE will focus on the collection of population data in an annual subset of PWI stream systems that support spring runs of adult steelhead. Selected streams will be stratified based on **management categories** based on population size and **accessibility**, with selection selected based on their importance to subsistence users. Weirs will be operated in each study stream for a limited, 8-week period corresponding to the main run timing for spring returning adult steelhead. These counts will serve as a "minimum" population estimate for each of the study streams, and are anticipated to provide information of sufficient resolution to address subsistence management issues on Prince of Wales Island. Channel-spanning, aluminum

and steel tripod/bipod weirs with fixed or floating center panel sections will be constructed and operated for 8 weeks (April 1st through May 31st), to enumerate upstream migrating steelhead spawners. These counts will serve as a "minimum" population estimate for each of the streams, and are anticipated to provide information of sufficient resolution to address subsistence management issues on Prince of Wales Island.

Results from the Spring 2004 Pilot Study

USDA Forest Service and Alaska Department of Fish and Game biologists conducted a pilot study during March – May 2004, to evaluate the effectiveness of a mark-recapture study design for assessing steelhead populations on the streams of Prince of Wales Island. This work was conducted on 12 Mile Creek, a system that is typical of many small to moderate-sized streams on PWI. The 2004 pilot study on 12 Mile Creek indicated that mark-recapture using only seines and angling methods was largely unsuccessful, inefficient, and ineffective. When these techniques are combined with visual sightings as a re-capture method, the resulting population estimates had large variances and low precision.

While visual sightings via snorkeling were found to be successful for "re-captures", a weir proved to be necessary for tagging a sufficient number of fish during the initial marking sessions to obtain a reliable population estimate. After the initial investment in supplies and materials is made, however, the costs of operating a weir are equivalent to, or less than, that required for a mark-recapture efforts (in fact, more personnel are needed to operate seines). For adult steelhead, tag loss was high and affected population estimates as well. In addition, the resulting stress associated with increased handling in a mark-re-capture study with angling or seining must also be considered, especially given that steelhead numbers in most PWI systems are small (the loss of a few individuals due to handling mortality may be significant for such populations). Based on these results, the principal investigators do not recommend that mark-re-capture techniques be utilized for addressing this study objective in the proposed research.

SEX, LENGTH, and INCIDENCE OF REPEAT SPAWNING

SEX, LENGTH, and INCIDENCE OF REPEAT SPAWNING will be collected from a subset of adult steelhead captured in the study streams. Steelhead length will be determined by measurements from mideye to forkofcaudalfin to the nearest 5 mm. Sex will be determined by observing external characteristics. The incidence of repeat spawning and saltwater age at initial spawning will be determined from scale pattern analysis. Scale samples will be cleaned and mounted on gum cards to facilitate making triacetate impressions of the scales. Samples will be stored and archived by ADF&G, and scale analysis will be conducted by Department in 2007.

Project Deliverables/Products

Weekly summaries of the daily counts from the weir, and snorkel visual re-capture counts, will be prepared and submitted to Federal and State management agency offices, and PWI Native organizations. Annual progress reports will be submitted by January 31 of each year, and a final project report will be submitted in October 2007. Project data will be maintained in a database, and findings will be presented at technical and public meetings, and in refereed scientific journals.

Potentials for Partnership and Capacity Development, and Consultations

This project will promote and enhance working relationship among the State and Federal agencies, and the local communities on Prince of Wales Island. The Organized Village of Kasaan is a principal investigator and will receive funds and the responsibility for employing of up to 4 fisheries technicians, to assist the State and Federal biologists in conducting the field work associated with this study. Priority will be given to local hire of qualified. The proposed study will help to expand OVK's capacity for fisheries resource monitoring.

PWI Native organizations, represented by the Hydaburg Cooperative Association, Craig Community Association, Klawock Community Association, and OV Kasaan were consulted. Each of these groups have expressed strong support for this project. ADF&G local managers, and line officers/natural resources staff members at the USDA Forest Service offices in Craig, Thorne Bay, and Ketchikan have indicated that they also fully support the proposed study and will be contributing in-kind contributions of salaries, travel, and helicopter transportation costs.

Recommendation: *Fund***.**

Justification

Assessment of PWI steelhead stocks that support recently liberalized subsistence fisheries is a high priority for the Monitoring Program. This proposal ranks very high in all evaluation criteria. The IP addressed all previous comments by the TRC. Significant co-funding (approximately double the request to the Monitoring Program) is provided by all of the investigators.

Not Recommended for Funding

05-651
Customary Trade of Subsistence Harvested Fish Products in Southeast Alaska

Geographic Area: Southeast

Information Type: Harvest Monitoring/Traditional and Ecological Knowledge (HM/TEK)

Principal Investigators: Gordon Jackson, Chief of Business Development
Central Council of Tlingit and Haida Indian Tribes of Alaska
320 W. Willoughby, Juneau, Alaska, 99801
Phone: (907) 463-7121
gjackson@ccthita.org

Co-Investigators: Steve Langdon, University of Alaska Anchorage
Peter Metcalfe, Metcalfe Communications

Cost:	2005	2006	2007
	$ 79,737	$ 44,922	$124,659

Issue

This two-year collaborative study will determine the relative importance of the customary and traditional trade of subsistence caught sockeye salmon. The investigators will identify and document the customary and traditional trade practices, distribution, and the economic and cultural values of sockeye salmon products (federal subsistence resource) acquired through subsistence activities conducted by Tlingit (and others) in four southeast Alaska communities: Angoon, Hoonah, Kake and Hydaburg. Investigators will reconcile possible discrepancies between state and federal data on customary trade.

Objectives:

1. Identify levels of subsistence harvest of sockeye salmon for project communities in the past five years.

2. Characterize the distribution process for subsistence sockeye salmon harvests for use and processing within each community.

3. Identify the sockeye salmon products (fresh, frozen, smoked, kippered, *nayeeti,* dry fish, etc), which enter customary and traditional trade practices and networks.

4. Characterize the utilization, distribution and trade of the various products in terms of practice (i.e., exchange for goods, for services, on ceremonial occasions, for other foods, out of respect) and quantity.

5. Estimate the quantities of sockeye salmon products that are traded from specific communities and the locations to which various products are sent.

6. Estimate the proportion of subsistence production of sockeye salmon that enters the customary trade sector.

7. Estimate the value of the customary and traditional trade in sockeye salmon products based on data acquired from the four communities.

Methods

Locally researchers, hired, trained and supervised by the investigators, will survey subsistence harvesters in the Native villages of Hoonah, Angoon, Kake and Hydaburg. Follow-up research will be conducted by telephone and/or email. The investigators will engage researchers at the Alaska Department of Fish & Game to provide subsistence harvest data pertinent to each community.

Products

Project performance reports, annual reports, and final report will include a literature review on Tlingit salmon customary and traditional Trade; identification of products, quantities and values of subsistence sockeye salmon production; estimate of amount of customary trade as a proportion of total sockeye salmon harvest; ethnographic characterization of contemporary practices associated with subsistence sockeye salmon production preparation and customary trading practices; and product flow model showing movement of product from catch location to final consumption.

Experience of Investigators

The principal investigator, Gordon L. Jackson, is a Tlingit who was born and raised in the village of Kake. A college graduate, Mr. Jackson has over 34 years of experience working at the top levels of local, regional and statewide organizations.

Professor Stephen Langdon of the University of Alaska Anchorage, is a recognized specialist in ecological anthropology, economic anthropology, and ethnohistory of maritime societies in Alaska and the Northwest Coast of North America. He is the author of numerous studies and papers regarding subsistence activities.

Peter Metcalfe is a communications specialist with over 25 years of experience writing and producing video documentaries and publications of and about Alaska Native topics.

Partnerships/Collaboration:

Staff of CCTHITA and Stephen Langdon will collaborate on determining the protocol that will be used to select and hire local researchers — an effort will be made to hire either mature high school students or college students on break, who have an interest in anthropology and/or statistical research. The local researchers will be hired through village tribal organizations. The researchers will be trained and supervised by Professor Langdon, providing an opportunity for young people in the villages who have an interest in post-graduate studies to learn basic interviewing and survey techniques.

Recommendation: *Do not fund*

Justification

This two year project proposes to address an issue of tremendous importance to the Federal Subsistence Board, namely regional patterns of customary trade. One of the co-investigators is uniquely qualified to conduct the work, and the project represents a good, collaborative effort. However, most reviewers on the TRC found significant questions regarding methodology; and therefore rated technical merit as low. At issue are study design and protocol for community interviews, how social networks will be addressed and incorporated, delegation of responsibilities, and development of a useable model. Further, these reviewers found the role of local research assistants unclear, as well as numerous and significant budget questions. In total, the majority of reviewers on the TRC concluded that a significantly revised IP would be required to address these concerns, and that this would best be accomplished in a subsequent submission during the next funding cycle. TRC members agreed that the issue is of key importance to the Federal subsistence management program.

However, this conclusion of low technical merit was not shared by all reviewers on the TRC. These reviewers rated this project as having high and time-sensitive strategic value. These reviewers found this IP sufficiently detailed to rate technical merit of at least medium, requiring only modest clarifications. In light of the clear track record of the co-investigator on a number of relevant Southeast Alaska projects, the TRC minority concluded that this was a viable project and that any revisions to the IP for project 06-651 could be accomplished during this (2005) funding cycle.

When put to a vote, the majority of the TRC made the recommendation to not fund this project. The entire TRC recommends that the issue of customary trade be identified as a high priority information need in the 2006 Call for Proposals.

Not Recommended for Funding

05-653
Changes to Subsistence Fishing Due to Fewer Rural-based Large Vessels

Geographic Area: Southeast

Information Type: Harvest Monitoring/Traditional and Ecological Knowledge (HM/TEK)

Principal Investigators: Gordon Jackson, Chief of Business Development
Central Council of Tlingit and Haida Indian Tribes of Alaska
320 W. Willoughby, Juneau, Alaska, 99801
Phone: (907) 463-7121
gjackson@ccthita.org

Co-Investigators: Steve Langdon, University of Alaska Anchorage
Peter Metcalfe, Metcalfe Communications

Cost:	2005	2006	2007
	$ 81,772	$ 41,636	$123,408

Issue

This two-year collaborative study will investigate the degree to which the decline in rural-based large commercial fishing vessels has affected subsistence harvest activities and patterns in the villages of Angoon, Hoonah, Hydaburg and Kake. The study will examine whether or not the reduction of the large vessel fleets in these villages has contributed to greater harvest impacts to anadromous streams located close to the villages.

Objectives

1. Identify levels of subsistence harvest of sockeye salmon for project communities in the past five years.

2. Quantify the harvest patterns of subsistence sockeye salmon by sockeye stream for each project community over last three decades.

3. Identify by vessel type and size, and quantify the decline of large vessels home-ported in project villages since 1975.

4. Identify by fishery type and quantify the decline of commercial fishing permits residing in project villages since 1975.

5. Estimate the per-capita use of subsistence harvested sockeye salmon in each project village based on ADF&G records and use reported through interviews.

6. Based on interviews with local elders, and using existing data, estimate the quantity of sockeye salmon provided by resident commercial fishermen.
7. Using existing data, compare actual escapement of sockeye salmon by stream compared to recommended escapement for each stream.

Methods

Local researchers, hired, trained and supervised by the investigators, will survey past and present subsistence harvesters and commercial fishermen in the Native villages of Angoon, Hoonah, Hydaburg and Kake. The investigators will engage researchers at the Alaska Department of Fish & Game to provide village-specific subsistence harvest data and the Commercial Fishing Entry Commission to provide data on home-ported commercial vessels and resident commercial fishermen.

Products

Project performance reports, annual reports, and final report will summarize data from ADFG/CFEC sources, tabular summaries of calendar data by community, and summaries of interview information on nature and extent of harvesting by stream, by year, and by decade.

Experience of Investigators

The principal investigator, Gordon L. Jackson, is a Tlingit who was born and raised in the village of Kake. A college graduate, Mr. Jackson has over 34 years of experience working at the top levels of local, regional and statewide organizations.

Professor Stephen Langdon of the University of Alaska Anchorage, is a recognized specialist in ecological anthropology, economic anthropology, and ethnohistory of maritime societies in Alaska and the Northwest Coast of North America. He is the author of numerous studies and papers regarding subsistence activities.

Peter Metcalfe is a communications specialist with over 25 years of experience writing and producing video documentaries and publications of and about Alaska Native topics.

Partnerships/Collaboration

Staff of CCTHITA and Professor Langdon will collaborate on determining the protocol that will be used to select and hire local researchers — an effort will be made to hire local residents who have an interest in anthropology and/or statistical research. The local researchers will be hired through village tribal organizations. The researchers will be trained and supervised by Professor Langdon, providing an opportunity for village residents who have an interest in post-graduate studies to learn basic interviewing and survey techniques.

Recommendation: *Do not fund.*

Justification

While this project addresses a potentially provocative and interesting idea that could assist fishery managers in understanding subsistence harvest data, the Investigation Plan contains significant methodological and technical issues and is not recommended for funding at this time.

2005 DRAFT FISHERIES RESOURCE MONITORING PLAN INTER-REGIONAL OVERVIEW

PROJECTS CURRENTLY FUNDED UNDER THE FISHERIES RESOURCE MONITORING PROGRAM

A total of 11 Inter-Regional projects have been funded since 2000, and three projects approved as part of the 2004 Monitoring Plan are scheduled to receive funding in 2005 (**Table 1**). Two of these ongoing projects address database development (04-701) or updates (04-571), and one addresses eulachon biology (04-703). Specifically, these projects will:

- Continue a multi-year effort to develop a comprehensive data management system for the Northern, Yukon, and Kuskokwim regions that will be accessible over the Internet (project 04-701);
- Determine whether eulachon are able to spawn in estuaries so that current assessment methods, which assume all spawning occurs in freshwater, can be evaluated and, if necessary, modified (project 04-703);

Table 1. Summary of projects funded under the Fisheries Resource Monitoring Program in the Interregional, 2000 - 2006. Abbreviations used for investigators were: ADF&G=Alaska Department of Fish and Game, AITC=Alaska Inter-Tribal Council, EA=Elizabeth Andrews, NPS=National Park Service, USDA-FS=USDA Forest Service.

Project Number	Data Type	Project Title	Investigators	Budget ($000s) 2000	2001	2002	2003	2004	2005	2006
00-016	SST	Information access of AYK fish data	ADF&G	$28.3	$34.8					
01-010	SST	Regulatory history of Alaska salmon regulations	ADF&G, EA		$33.0	$2.5				
01-154	SST	Project information and access system	ADF&G		$107.4					
04-701	SST	Develop shared fishery database	ADF&G					$75.0	$30.7	$30.6
04-703	SST	Hatching success of eulachon eggs	USDA-FS					$35.0	$19.0	
00-017	HM-TEK	Statewide subsistence harvest strategy	ADF&G, AITC	$206.8						
01-106	HM-TEK	Validity and reliability of fisheries harvest	ADF&G, AITC, NPS		$137.5					
01-107	HM-TEK	Implementation of statewide fisheries harvest strategy	ADF&G, AITC		$261.9		$46.4			
02-043	HM-TEK	Alaska subsistence fisheries database GIS integration	ADF&G			$21.7				
02-069	HM-TEK	Shared fishery database	ADF&G			$31.9				
04-751	HM-TEK	Subsistence harvest database update & report prep	ADF&G					$78.0	$77.0	$75.7
		Total Interregional Monitoring Program		$235.1	$574.6	$56.1	$46.4	$188.0	$126.7	$106.4

revised 8-11-04

- Update the Alaska Subsistence Fisheries Database with current and historic information on salmon, non-salmon finfish, and marine invertebrate fisheries (project 04-751).

Projects Forwarded for Investigation Plan Development

The Technical Review Committee forwarded a total of three Inter-Regional project proposals for development of investigation plans. However, investigation plans were not received for both harvest monitoring and traditional ecological knowledge projects: 05-751, Linking Traditional Ecological Knowledge and Biological Fisheries Research for Improved Management of Subsistence Fisheries, and 05-752, Statewide Subsistence Fisheries Traditional Ecological Knowledge Research Strategy. An IP was received for the stock status and trends project: 05-702, Genetic Species Markers and Population Structure in Alaskan Whitefish. The investigators for this project worked with reviewers from the Office of Subsistence Management to develop project objectives and methodology. The detailed budget submitted with their investigation plan allowed the funding requests to be summarized according to Alaska Native, State, Federal, and other organizations (**Table 2**). The submitted budgets also identified the portion of funds that would be used to hire local residents, as well as the amount of matching funds to be contributed by investigators (**Table 3**).

Table 2. Inter-Regional project costs, by organization (Alaska Native, State, Federal, other), for investigation plans submitted to the Fisheries Resource Monitoring Program for funding consideration in 2005.

		Project Costs ($000s)			
Project Number	Title	Alaska Native	State	Federal	Other
	Stock Status and Trends Projects				
05-702	Genetic Species Markers in Whitefish			$30.2	

Table 3. Inter-Regional local hire and matching funds for investigation plans submitted to the Fisheries Resource Monitoring Program for funding consideration in 2005. Abbreviations used for investigators were: USFWS=U.S. Fish and Wildlife Service

			Funding ($000s)	
Project Number	Lead Organization	Title	Local Hire	Matching
		Stock Status and Trends Projects		
05-702	USFWS	Genetic Species Markers in Whitefish		$88.9

Available Funds

Federal Subsistence Board guidelines direct initial distribution of funds among regions and data types. For 2005, $105,000 is available for funding new Inter-Regional projects. Two thirds of this ($69,800) is available for stock status and trends projects, and one-third ($35,200) is available for harvest monitoring and traditional ecological knowledge projects. Since no harvest monitoring

and traditional ecological knowledge projects were submitted for funding consideration in 2005, the $35,200 available for this data type can be used to fund other Monitoring Program projects.

Recommendations for Funding – Stock Status and Trends Projects

The Technical Review Committee recommended that the one stock status and trends project forwarded for investigation plan development be funded in 2005 (**Table 4**; also see Executive Summary):

05-702	Genetic Species Markers and Population Structure in Alaskan Whitefish	$30,188

Table 4. Inter-Regional stock status and trends investigation plans submitted to the Fisheries Resource Monitoring Program for funding consideration and Technical Review Committee funding recommendations in 2005.

Project Number	Title	Recommendation TRC	Requested Budget ($000s) 2005	2006	2007
05-702	Genetic Species Markers in Whitefish	Yes	$30.2	$30.2	
	Total		$30.2	$30.2	
	Funding Guideline		$69.8		
	TRC Recommendation		$30.2	$30.2	

Several Regional Advisory Councils have identified issues and information needs that either apply to more than one region or the entire state. The assessment of non-salmon fish species important to subsistence use, particularly steelhead, eulachon, whitefish and grayling, is one of the current data gaps identified.

Project 05-702 addresses assessment of whitefish in Western Alaska by comparing the large scale population structure of humpback *Coregonus pidschain* to Alaska *Coregonus nelsonii* and lake *Coregonus clupeaformis* whitefish. Investigators would also examine whitefish population structure within the Yukon River, primarily between the Koyukuk, Tanana and upper Yukon River populations, and develop genetic markers to discriminate among seven whitefish species: inconnu *Stenodus leucichthys*, broad whitefish *Coregonus. nasus*, humpback whitefish complex, Bering cisco *C. laurettae*, least cisco *C. sardinella*, round whitefish *P. cylindraceum*, and pygmy whitefish *P. coulteri*.

Recommendations for Funding – Summary

At the direction of the Federal Subsistence Board, Monitoring Program funds are allocated by region and information type each year. The intent of establishing these budget guidelines is to develop a balanced program that addresses the full array of information needed for Federal subsistence fisheries management and regulatory decisions throughout Alaska. Actual distribution of funds each year may differ from guideline amounts depending upon the number and quality of projects submitted as well as changing management needs. For 2005, only one Inter-Regional investigation plan was submitted. The funding request of $30,188 for this stock

status and trends project was under the available target amount of $69,800 for this data type (**Table 4**). Since no project proposals were submitted for the harvest monitoring and traditional ecological knowledge data type, these funds can be used to fund other Monitoring Program projects. This would still leave a balance of $74,812 available to fund other projects. Three Inter-Regional projects initially funded in 2004 are continuing in 2005 and will receive $126,700.

05-702
Genetic Species Markers and Population Structure in Alaskan Whitefish

Geographic Area: Inter-Regional

Information Type: Stock Status and Trends

Principal Investigator: John Wenburg, Eric Kretschmer, and Steve Miller
Conservation Genetics Laboratory (CGL)
U.S. Fish and Wildlife Service (USFWS)
1011 East Tudor Road, Anchorage, AK, 99503
Ph. (907) 786-3598; Fax (907) 786-3978

Co-Investigator: Randy Brown, USFWS, Fairbanks Fish and Wildlife Field Office (FFWFO)
Ken Harper, USFWS, Kenai Fish and Wildlife Field Office (KFWFO)

Cost:	2005	2006
	$ 30,188	$30,188

Issue

There is a large and growing need for information on whitefish (for the purpose of this proposal, the term 'whitefish' includes all Alaskan *Coregonus*, *Presopium* and *Stenodus* species, except where specifically noted) as it relates to management of subsistence fisheries throughout Alaska. Furthermore, across Alaska, residents have expressed concern about the status of whitefish resources. A critical initial step in properly addressing whitefish biology and management in Alaska is to characterize their genetic population structure. Currently, there are little or no population genetic data available for whitefish in Alaska. It is believed that there are relatively few whitefish spawning areas, even in large systems like the Yukon River, and there is little or no information on how populations are structured genetically. In order to properly manage whitefish (e.g., assess abundance, stock structure, distribution, movement patterns, life history and reasons for potential declines) we must be able to determine the geographic scale at which their populations are structured.

Furthermore, current management for whitefish in Alaska is imprecise as it is based on a 'whitefish group' where species are not distinguished. Juvenile whitefish bear little resemblance to the adult forms, since many of their morphometric characteristics are not fully developed or easily recognizable, and hybridization appears to be widespread. Even "pure" adults can be difficult to reliably identify morphologically, depending on the local experience of the biologist. A genetic method to distinguish between species will allow us to 1) verify the species status of individual samples; 2) assess the extent and importance of hybridization between species; and 3) is the first step in developing a reliable field identification key for adults and juveniles.

Objectives

1. Apply a set of 10 microsatellite loci (described below) to assess large scale population structure to 100 humpback whitefish from each of five geographic regions across Alaska.
2. Apply a set of 10 microsatellite loci (described below) to assess small scale population structure within the Yukon River to 38-100 humpback whitefish from each of eight previously determined spawning sites as given in Objective 1.
3. Develop diagnostic genetic markers to discriminate among Alaskan whitefish species: inconnu (*Stenodus leucichthys*), broad whitefish (*Coregonus. nasus*), humpback whitefish complex (*C. pidschian*), Bering cisco (*C. laurettae*), least cisco (*C. sardinella*), round whitefish (*P. cylindraceum*), and pygmy whitefish (*P. coulteri*).

Project Description:

Objectives 1 and 2) Collections to be analyzed in the project were chosen to represent a mix of proximate and distant collections, in order to identify the geographic boundaries of populations and the connectivity between them. Tissues collected between 1998 and 2003 are archived in the CGL (N = 469; Figure 1). We will attempt to collect additional samples from the Coleville, Copper, Selawik and Kuskokwim Rivers during the summer of 2004 (target N = 200-400; Figure 1).

Objective 3) Tissue samples from 2-10 adults of seven whitefish species reliably identified by experienced field biologists were collected from 1998 to 2004 and archived at CGL. The geographic range of the samples extended from Alaska to Montana, and included some putative hybrids. In collaboration with the University of Montana, we will use PINE (paired interspersed nuclear elements) nuclear molecular markers (Spruell et al. 2001) in an attempt to describe diagnostic species markers.

Consultations Completed/Potential for Capacity Development:

This project involves significant collaboration with faculty and graduate students at the University of Laval and the University of Montana. Furthermore, we have discussed this project with the Council Athabascan Tribal Governments Natural Resources Department (CATGNR) management team. The CATGNR represents a consortium of ten Gwich'in and Koyukon Athabascan tribes located throughout the Yukon Flats. The CATGNR agrees to the merit and need for this study and further development. This project will, to the extent possible, hire local residents of the Yukon Flats to assist with netting to capture whitefish at various locations.

Deliverables/Products:

Performance reports will be submitted in December of 2005 and 2006, along with a final report in June of 2007. The genetic data will be available on the CGL website; tissue samples and DNA will be archived at the CGL; a manuscript will be submitted to a peer-reviewed journal.

Performance Ability:

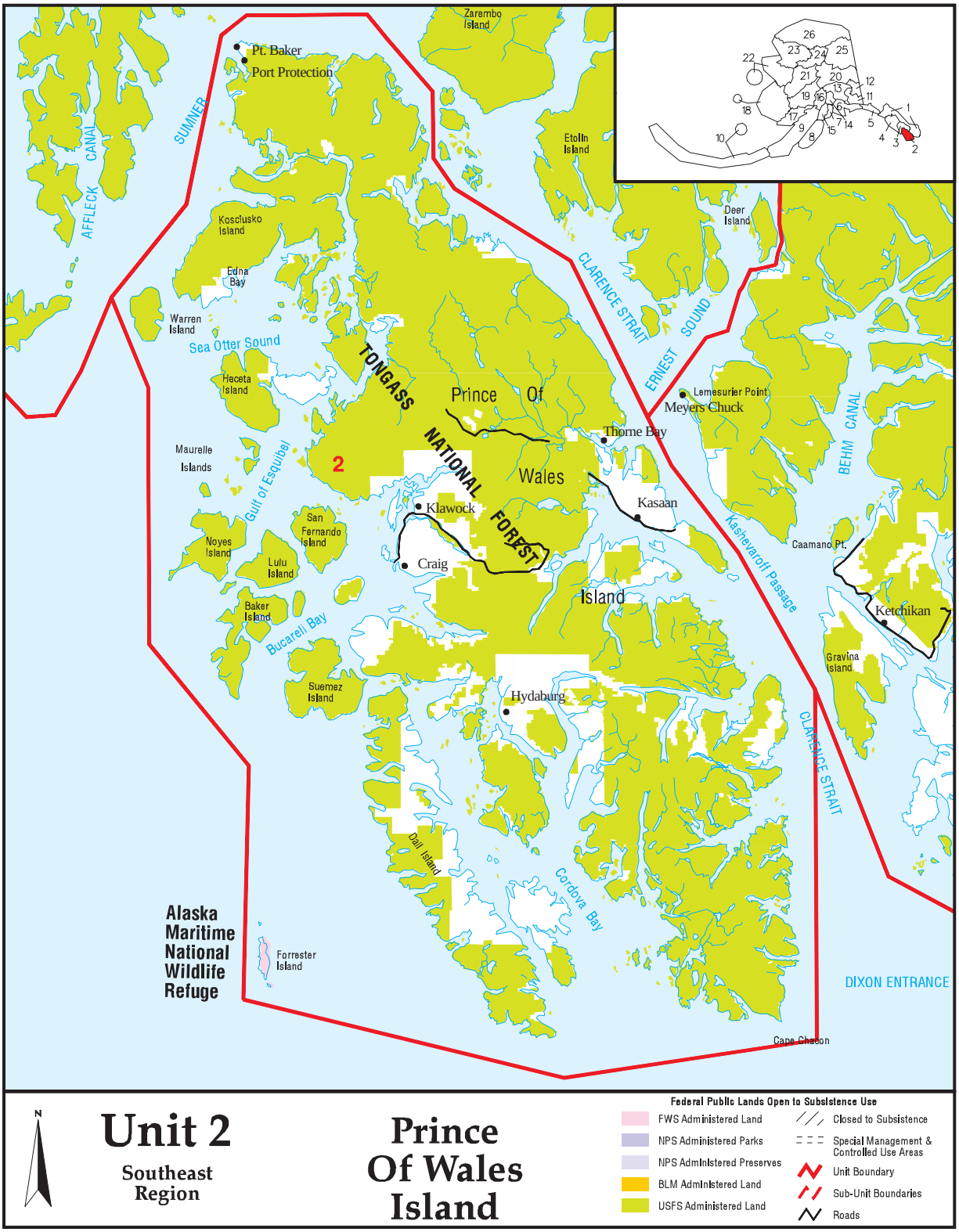
The CGL staff works in collaboration with biologists, researchers and managers to design and conduct genetic research and provides expertise addressing conservation and management issues regionally, nationally and internationally. Since 1987 the CGL has maintained a large team of geneticists, biologists and technicians, with over 100 publications to their name (extensive information and citation list available at: http://region7.fws.gov/internet/fisheries/genetics/index.htm), applying advanced techniques in conservation genetics to a variety of fish and wildlife issues.

Recommendation: *Fund with modification*

Justification:

The proposal addresses assessment of whitefish in Western Alaska by comparing large scale population structure of humpback *Coregonus pidschain* to Alaska *Coregonus nelsonii* and lake *Coregonus clupeaformis* whitefish. Investigators would also asses the population structure within the Yukon River, primarily between the Koyukuk, Tanana and upper Yukon River populations, and develop genetic markers to discriminate among seven whitefish species: inconnu *Stenodus leucichthys*, broad whitefish *Coregonus. nasus*, humpback whitefish complex, Bering cisco *C. laurettae*, least cisco *C. sardinella*, round whitefish *P. cylindraceum*, and pygmy whitefish *P. coulteri*. Identification of basic stock structure for whitefish would improve management and assessment of these species. Whitefish is an important subsistence resource, especially in areas with low salmon abundance. This work would begin to address questions concerning the geographic scale and structure of humpback whitefish populations on which to base management. If the project were successful in developing diagnostic genetic markers for whitefish species, it would allow development of a juvenile whitefish key. This project was supported by Federal and State managers on the Yukon River. The Technical Review Committee recommended this project for funding pending receipt of a revised investigation plan. The revised investigation plan should clarify the objectives of the project, remove the second objective as written, and clarify roles and responsibilities of the co-investigator. Further, the revised investigation plan should address the status of the current collections, responsibility for proposed collections, and the locations and numbers of the additional samples required. The revised investigation plan must be submitted by August 30, 2004.

KLONDIKE GOLD RUSH NATIONAL HISTORICAL PARK
1D
Skagway
Klukwan
Haines
CANADA
US
Cape Fairweather
GLACIER BAY NATIONAL PARK
1C
Lynn Canal
Gustavus
Auke Bay
Juneau
Elfin Cove
CHICHAGOF ISLAND
Hoonah
Pelican
Tenakee Springs
Chatham Strait
ADMIRALTY ISLAND NATIONAL MONUMENT
Glass Peninsula
TONGASS
BARANOF
Angoon
Hood Bay
Sitka
Sitka Sound
ISLAND
Pt. Gardner
Frederick Sound
Kake
Kupreanof
Kulu Island
Island
Petersburg
Mitkof Island
NATIONAL
1B
LeConte Glacier
Stikine River
Wrangell
Pt. Baker
Sumner Strait
Wrangell Island
Etolin Island
ANAN CREEK DRAINAGE
SALMON RIVER DRAINAGE
Hyder
1A
FOREST
MISTY FJORDS NATIONAL MONUMENT
PRINCE OF WALES
Klawock
Craig
Kasaan
REVILLAGIGEDO ISLAND
Ketchikan
Saxman
Hydaburg
Annette Island
Metlakatla
Dixon Entrance
Unit 1
Southeast Region
Southeast Mainland
Federal Public Lands Open to Subsistence Use
FWS Administered Land
NPS Administered Parks
NPS Administered Preserves
BLM Administered Land
USFS Administered Land
Closed to Subsistence
Special Management & Controlled Use Areas
Unit Boundary
Sub-Unit Boundaries
Roads


Zarembo Island
Pt. Baker
Port Protection
SUMNER
AFFLECK CANAL
Etolin Island
Kosciusko Island
Edna Bay
Warren Island
Sea Otter Sound
Heceta Island
Deer Island
CLARENCE STRAIT
ERNEST SOUND
TONGASS
NATIONAL FOREST
Prince Of Wales Island
Lemesurier Point
Meyers Chuck
Thorne Bay
BEHM CANAL
Maurelle Islands
Gulf of Esquibel
2
Klawock
Kasaan
San Fernando Island
Noyes Island
Lulu Island
Craig
Kashevaroff Passage
Caamano Pt.
Ketchikan
Baker Island
Bucareli Bay
Gravina Island
Suemez Island
Hydaburg
CLARENCE STRAIT
Dall Island
Cordova Bay
Alaska Maritime National Wildlife Refuge
Forrester Island
DIXON ENTRANCE
Cape Chacon
N
Unit 2
Southeast Region
Prince Of Wales Island
Federal Public Lands Open to Subsistence Use
FWS Administered Land
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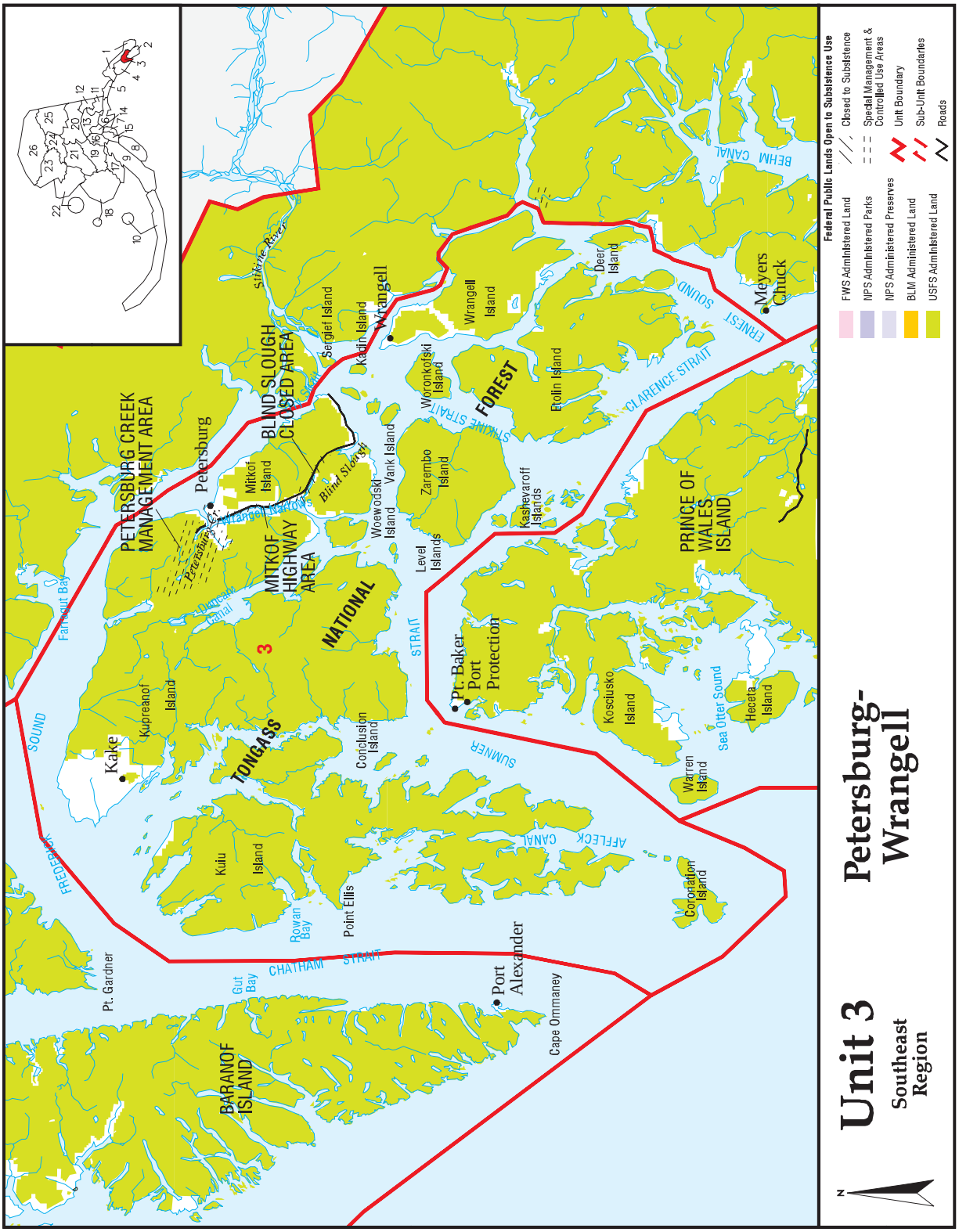
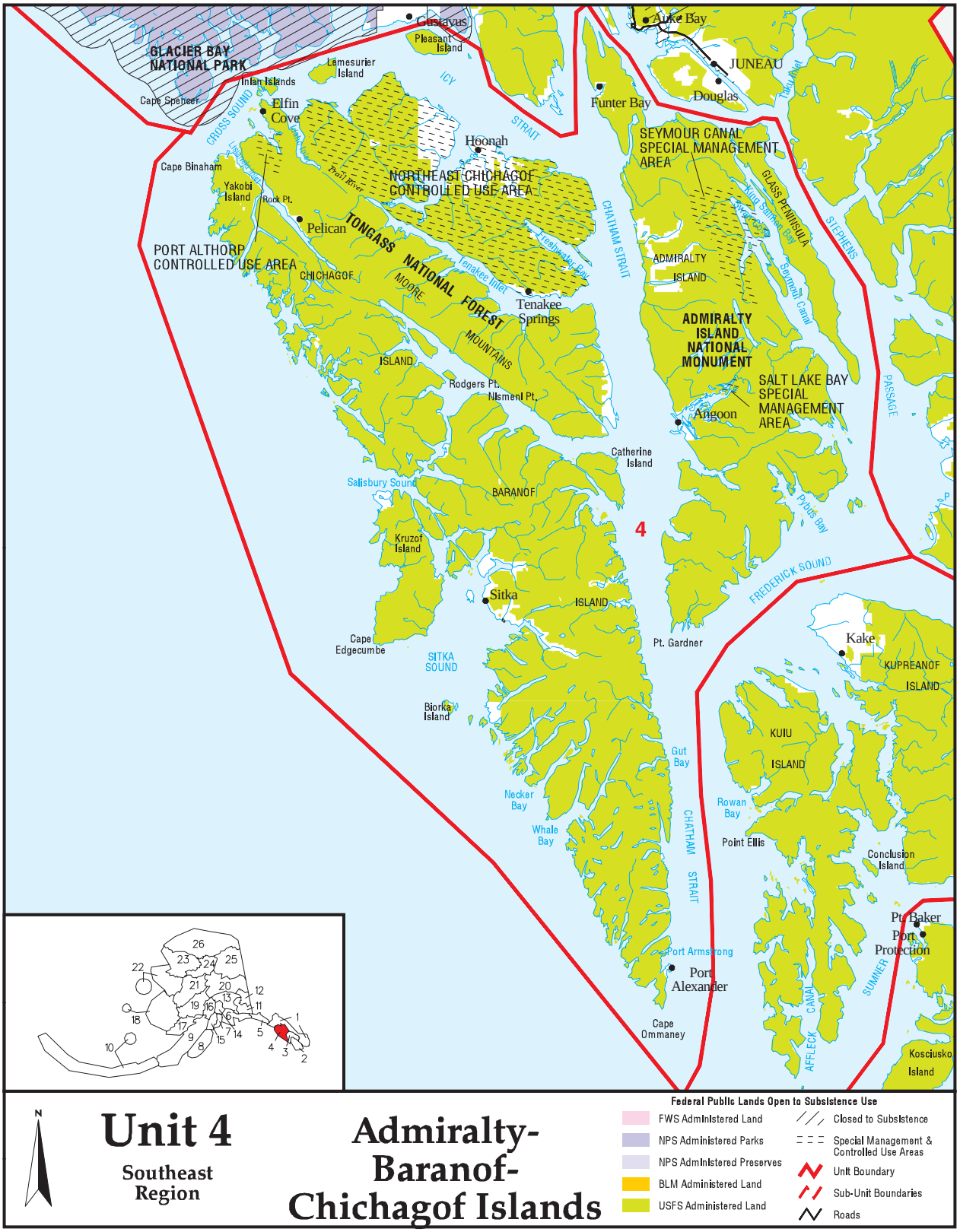
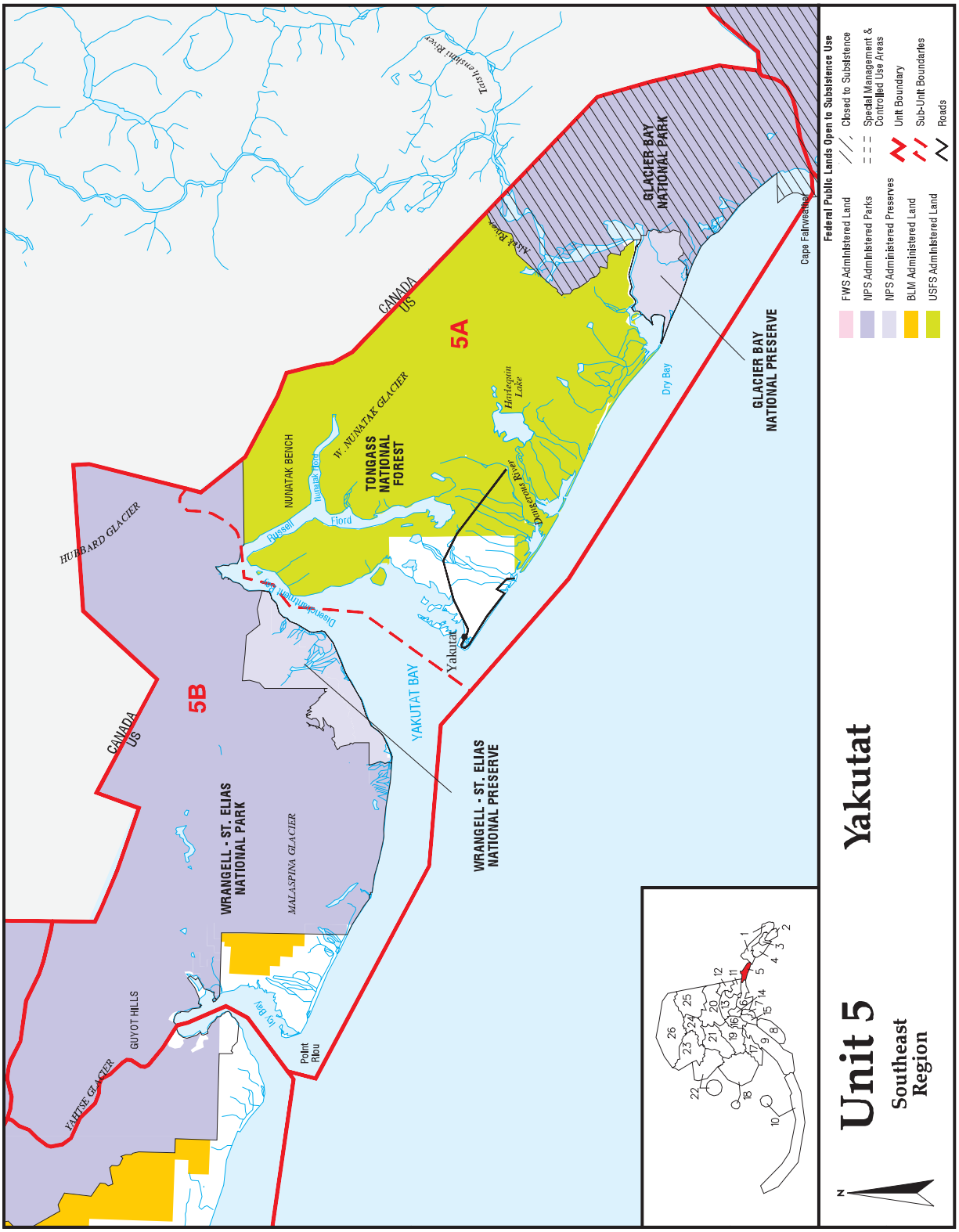
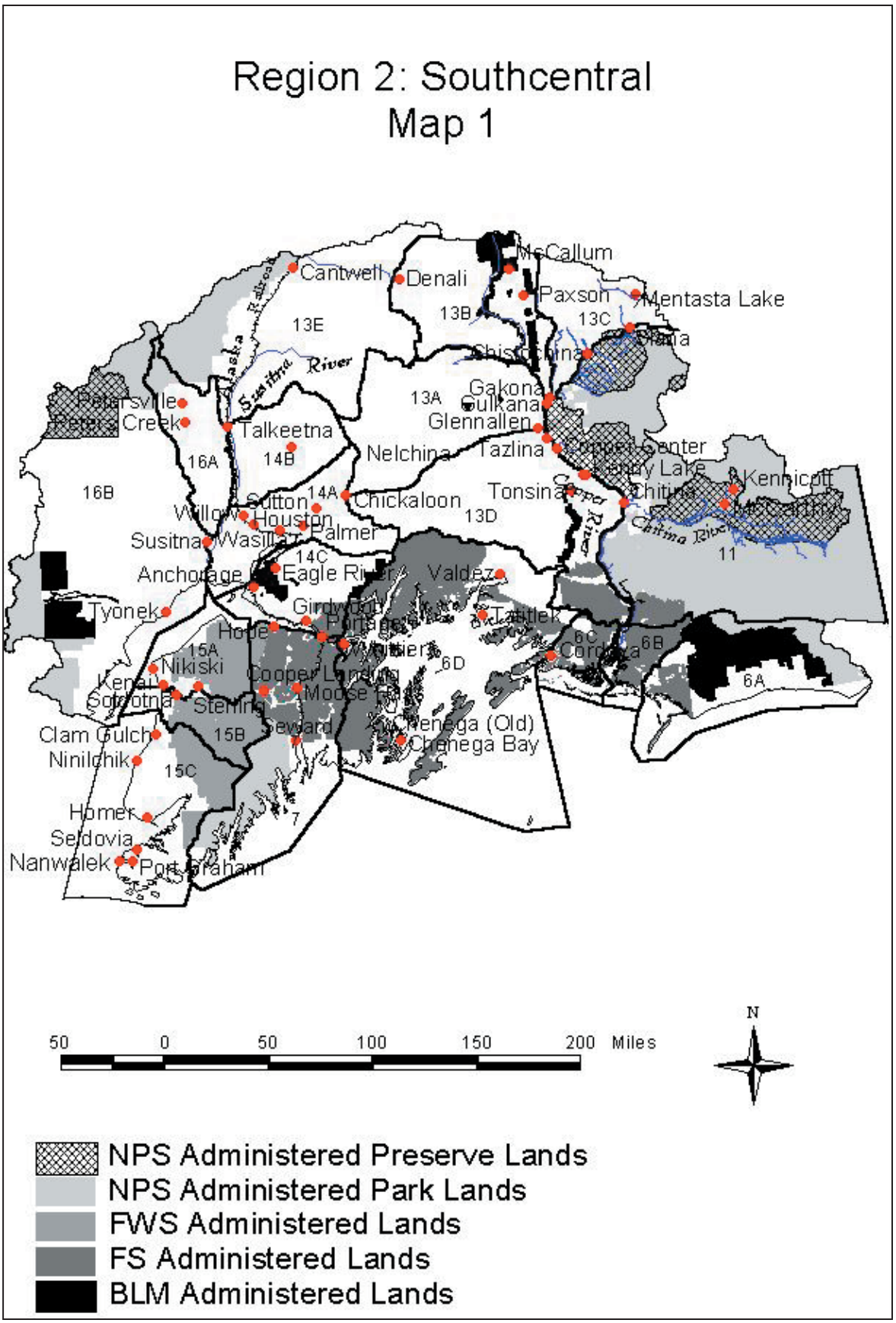
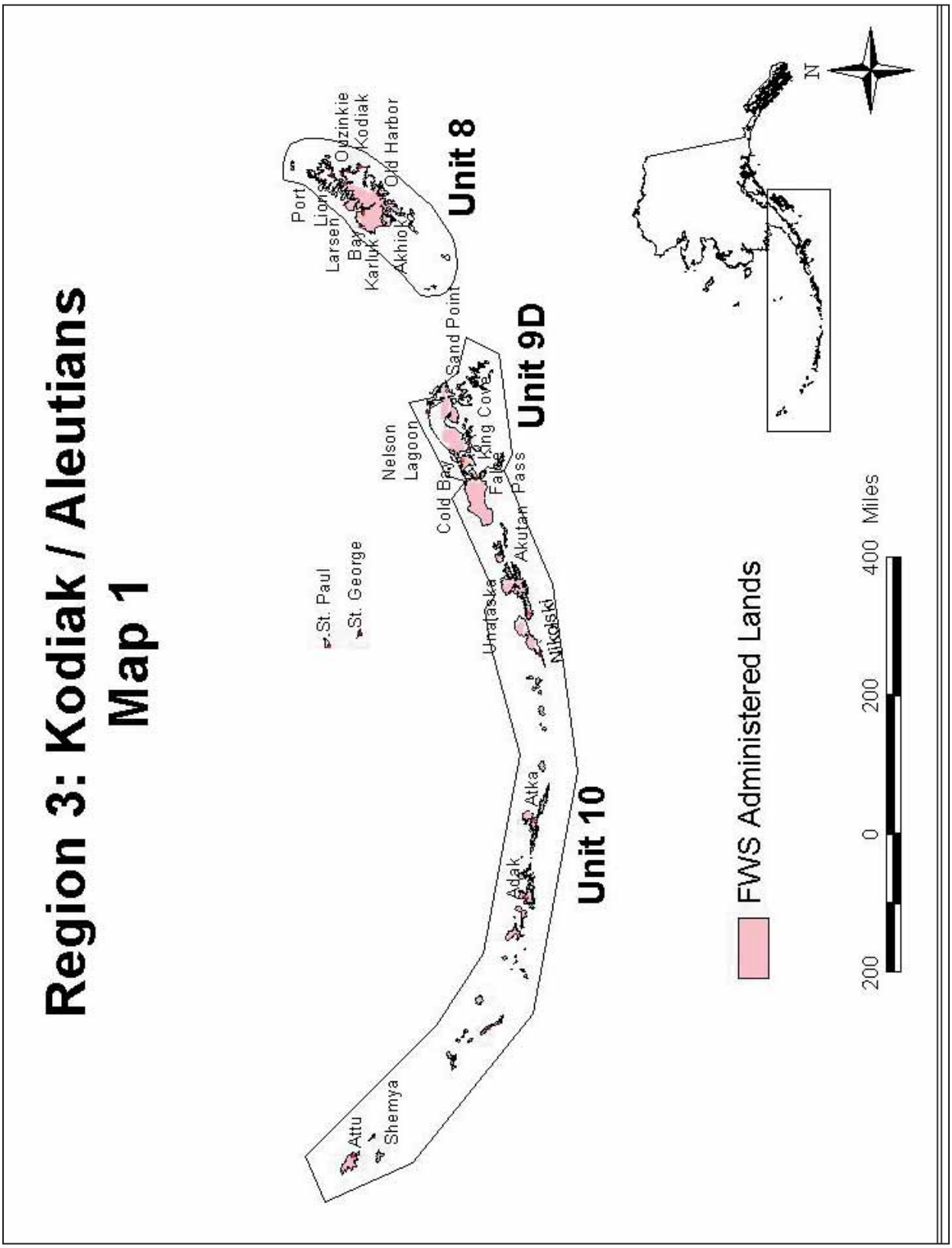
Special Management & Controlled Use Areas
Unit Boundary
Sub-Unit Boundaries
Roads

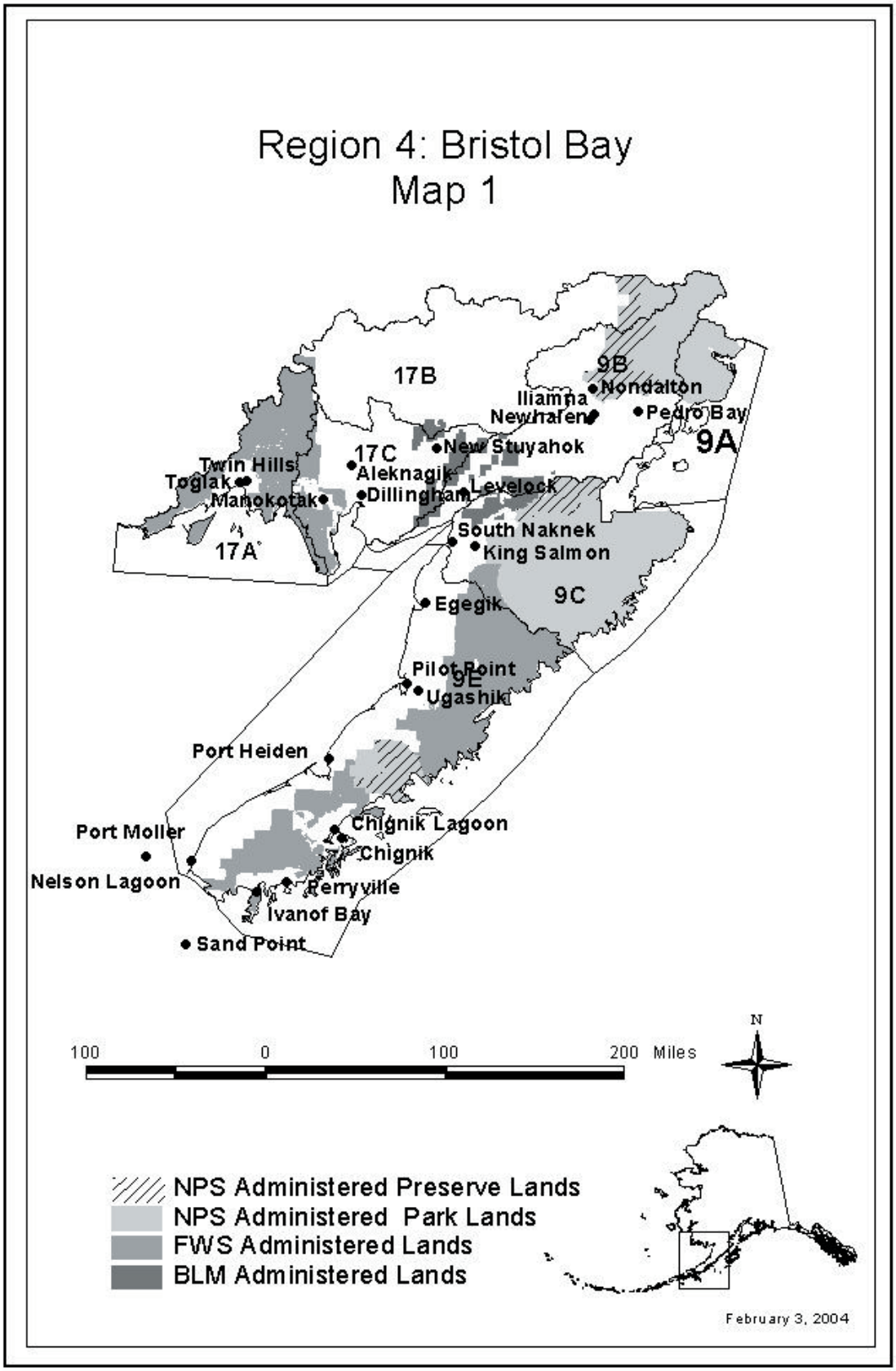

Unit 3
Southeast Region
Petersburg-Wrangell
Federal Public Lands Open to Subsistence Use
FWS Administered Land
NPS Administered Parks
NPS Administered Preserves
BLM Administered Land
USFS Administered Land
Closed to Subsistence
Special Management & Controlled Use Areas
Unit Boundary
Sub-Unit Boundaries
Roads
PETERSBURG CREEK MANAGEMENT AREA
BLIND SLOUGH CLOSED AREA
MITKOF HIGHWAY AREA
TONGASS NATIONAL FOREST
BARANOF ISLAND
PRINCE OF WALES ISLAND
Petersburg
Wrangell
Kake
Pt. Baker
Port Protection
Port Alexander
Meyers Chuck
Pt. Gardner
Cape Ommaney
Fanout Bay
Kupreanof Island
Mitkof Island
Sergief Island
Kadin Island
Wrangell Island
Woronkofski Island
Etolin Island
Deer Island
Vank Island
Woewodski Island
Zarembo Island
Kashevaroff Islands
Level Islands
Conclusion Island
Kuiu Island
Point Ellis
Rowan Bay
Gut Bay
Kosciusko Island
Warren Island
Heceta Island
Coronation Island
Stikine River
Blind Slough
Frederick Sound
Sumner Strait
Affleck Canal
Sea Otter Sound
Clarence Strait
Ernest Sound
Behm Canal
Stikine Strait
Chatham Strait
Duncan Canal
Wrangell Narrows
Frederick Sound
3


GLACIER BAY NATIONAL PARK
Gustavus
Pleasant Island
Lemesurier Island
Inian Islands
Cape Spencer
Elfin Cove
CROSS SOUND
ICY STRAIT
Funter Bay
Auke Bay
JUNEAU
Douglas
Taku Inlet
Hoonah
SEYMOUR CANAL SPECIAL MANAGEMENT AREA
GLASS PENINSULA
STEPHENS PASSAGE
Cape Binaham
Yakobi Island
Rock Pt.
Pelican
NORTHEAST CHICHAGOF CONTROLLED USE AREA
Trail River
PORT ALTHORP CONTROLLED USE AREA
CHICHAGOF ISLAND
TONGASS NATIONAL FOREST
MOORE MOUNTAINS
Tenakee Inlet
Tenakee Springs
Freshwater Bay
CHATHAM STRAIT
King Salmon Bay
Sitkoh Bay
Sitkoh Canal
ADMIRALTY ISLAND
ADMIRALTY ISLAND NATIONAL MONUMENT
SALT LAKE BAY SPECIAL MANAGEMENT AREA
Angoon
Rodgers Pt.
Nismeni Pt.
Catherine Island
Salisbury Sound
BARANOF ISLAND
Pybus Bay
4
Kruzof Island
FREDERICK SOUND
Sitka
Cape Edgecumbe
SITKA SOUND
Pt. Gardner
Kake
KUPREANOF ISLAND
Biorka Island
KUIU ISLAND
Gut Bay
Necker Bay
Whale Bay
Rowan Bay
Point Ellis
Conclusion Island
Port Armstrong
Port Alexander
Cape Ommaney
Pt. Baker
Port Protection
SUMNER
AFFLECK CANAL
Kosciusko Island
N
Unit 4
Southeast Region
Admiralty-Baranof-Chichagof Islands
Federal Public Lands Open to Subsistence Use
FWS Administered Land
NPS Administered Parks
NPS Administered Preserves
BLM Administered Land
USFS Administered Land
Closed to Subsistence
Special Management & Controlled Use Areas
Unit Boundary
Sub-Unit Boundaries
Roads

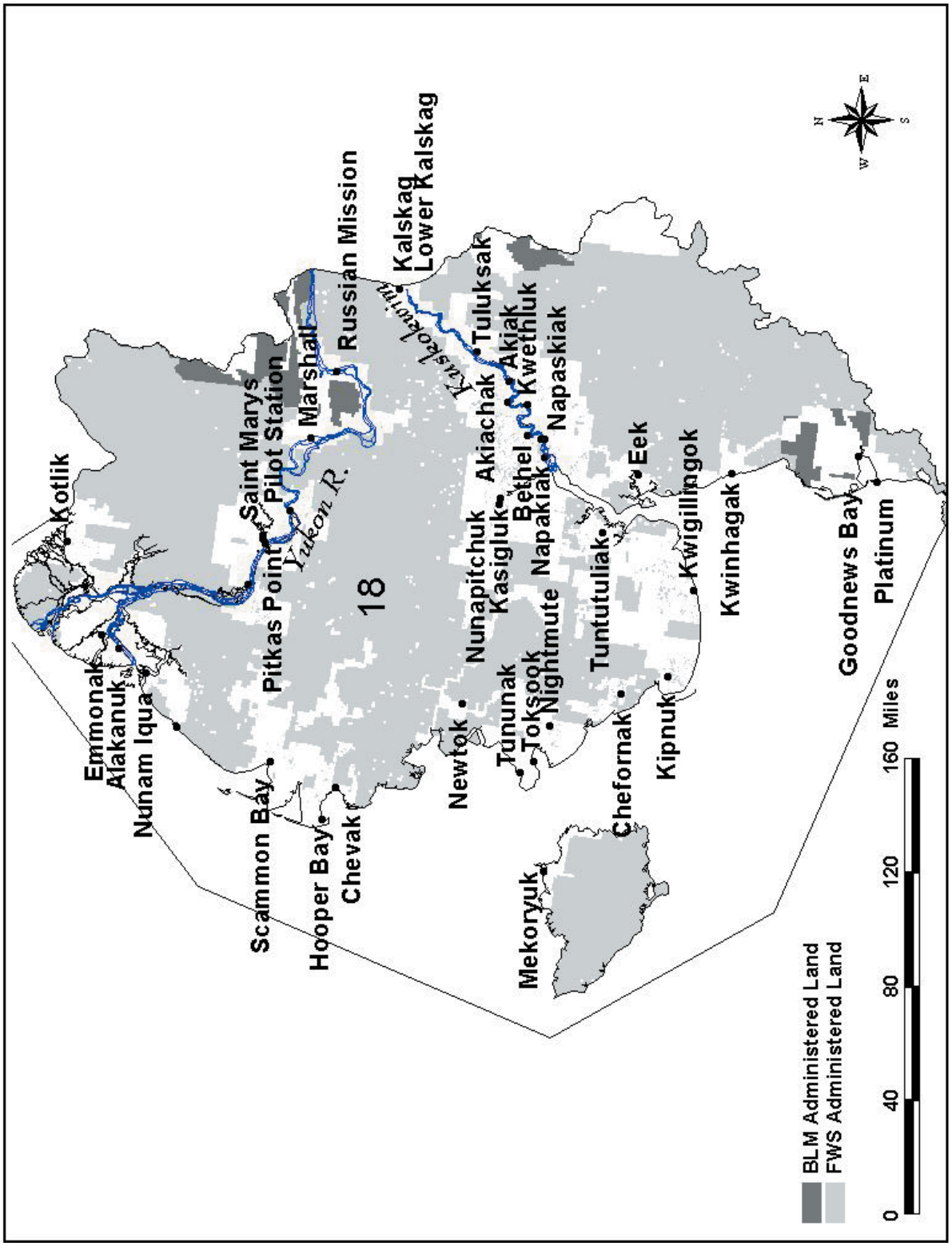

Unit 5
Southeast Region
Yakutat
Federal Public Lands Open to Subsistence Use
FWS Administered Land
NPS Administered Parks
NPS Administered Preserves
BLM Administered Land
USFS Administered Land
Closed to Subsistence
Special Management & Controlled Use Areas
Unit Boundary
Sub-Unit Boundaries
Roads
GLACIER BAY NATIONAL PARK
GLACIER BAY NATIONAL PRESERVE
Cape Fairweather
Dry Bay
Alsek River
Tatshenshini River
CANADA
US
5A
5B
TONGASS NATIONAL FOREST
W. NUNATAK GLACIER
NUNATAK BENCH
Russell Fiord
Nunatak Fiord
Disenchantment Bay
Dangerous River
Haviland Lake
Yakutat
YAKUTAT BAY
WRANGELL - ST. ELIAS NATIONAL PRESERVE
WRANGELL - ST. ELIAS NATIONAL PARK
MALASPINA GLACIER
HUBBARD GLACIER
YAHTSE GLACIER
GUYOT HILLS
Icy Bay
Point Riou

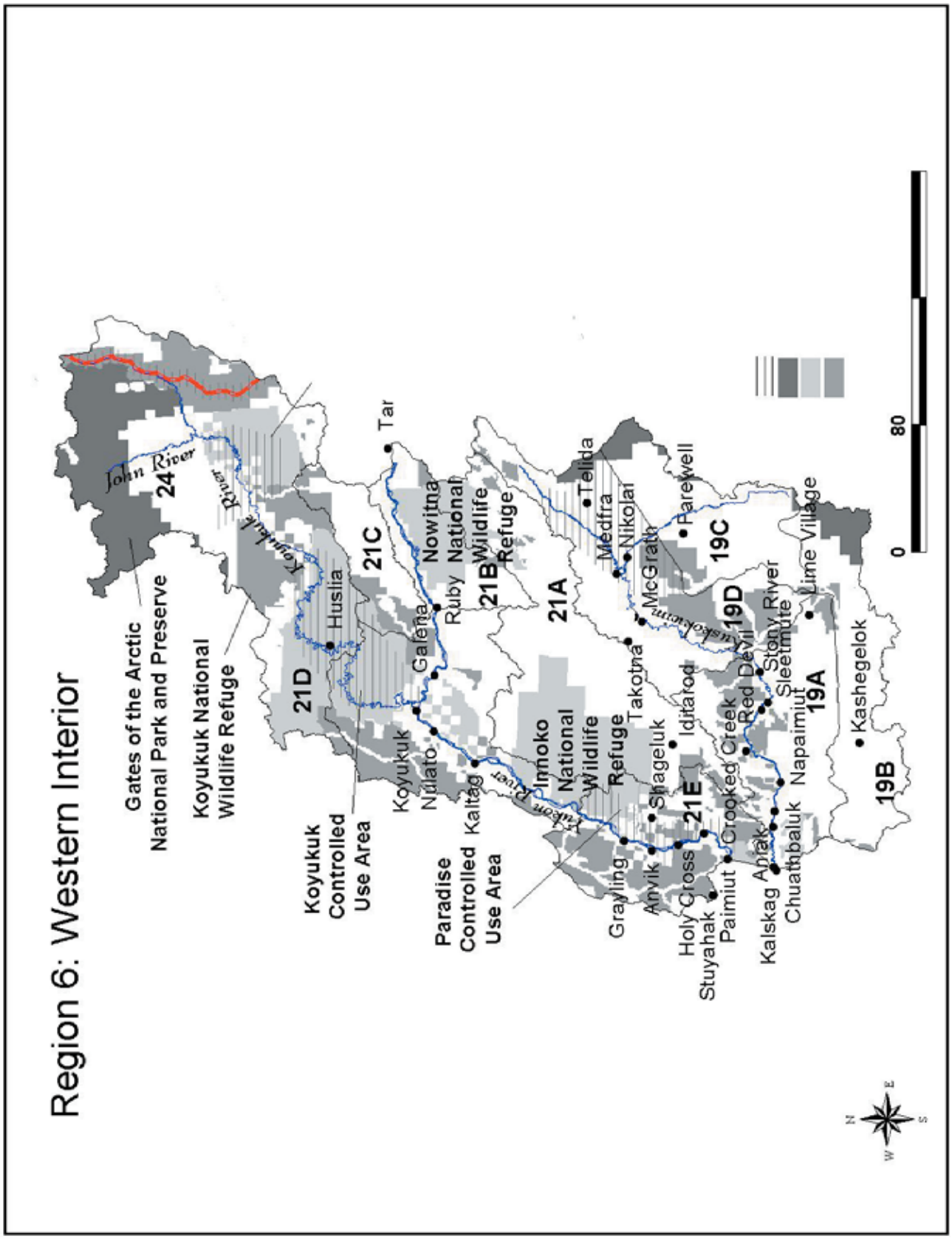

Region 2: Southcentral
Map 1
McCallum
Cantwell
Denali
Paxson
Mentasta Lake
13B
13C
13E
Alaska Railroad
Susitna River
Chistochina
Gakona
Gulkana
13A
Glennallen
Petersville
Petersville Creek
Talkeetna
14B
16A
Nelchina
Tazlina
Copper Center
Tonsina
Kennicott
McCarthy
Chitina
Chitina River
Copper River
16B
Sutton
14A
Chickaloon
13D
Willow
Houston
Palmer
Susitna
Wasilla
14C
Eagle River
Anchorage
Valdez
11
Tyonek
Girdwood
Portage
Whittier
Tatitlek
Hope
15A
Nikiski
Cooper Landing
Moose Pass
6D
6C
Cordova
6B
6A
Kenai
Soldotna
Sterling
Seward
Chenega (Old)
Chenega Bay
Clam Gulch
15B
Ninilchik
15C
Homer
7
Seldovia
Nanwalek
Port Graham
50
0
50
100
150
200
Miles
N
NPS Administered Preserve Lands
NPS Administered Park Lands
FWS Administered Lands
FS Administered Lands
BLM Administered Lands

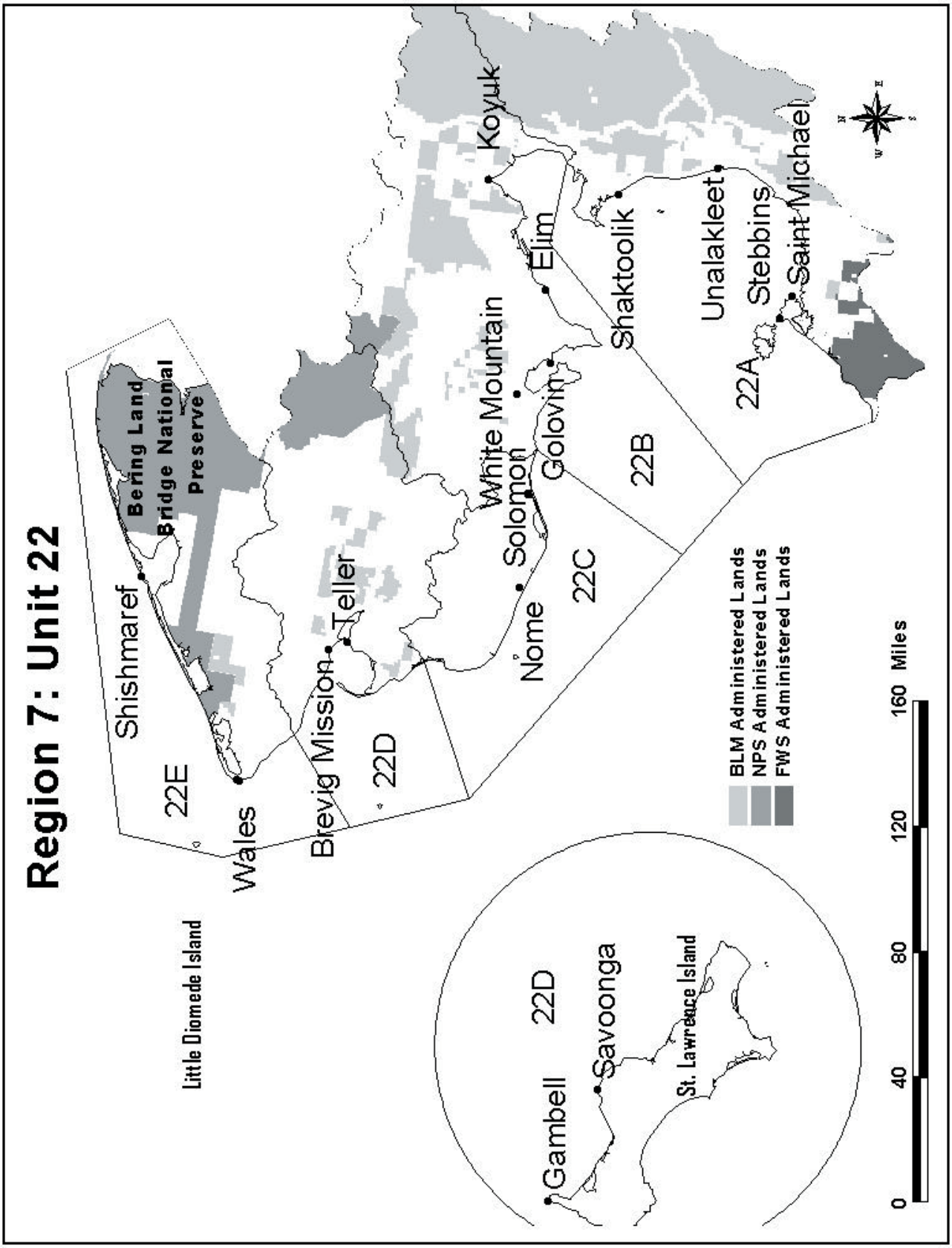

Region 3: Kodiak / Aleutians
Map 1
Port Lions
Larsen Bay
Karluk
Ouzinkie
Kodiak
Old Harbor
Akhiok
Unit 8
Sand Point
Unit 9D
Nelson Lagoon
Cold Bay
King Cove
False Pass
Akutan
St. Paul
St. George
Unalaska
Nikolski
Atka
Adak
Unit 10
Attu
Shemya
N
FWS Administered Lands
200
0
200
400 Miles

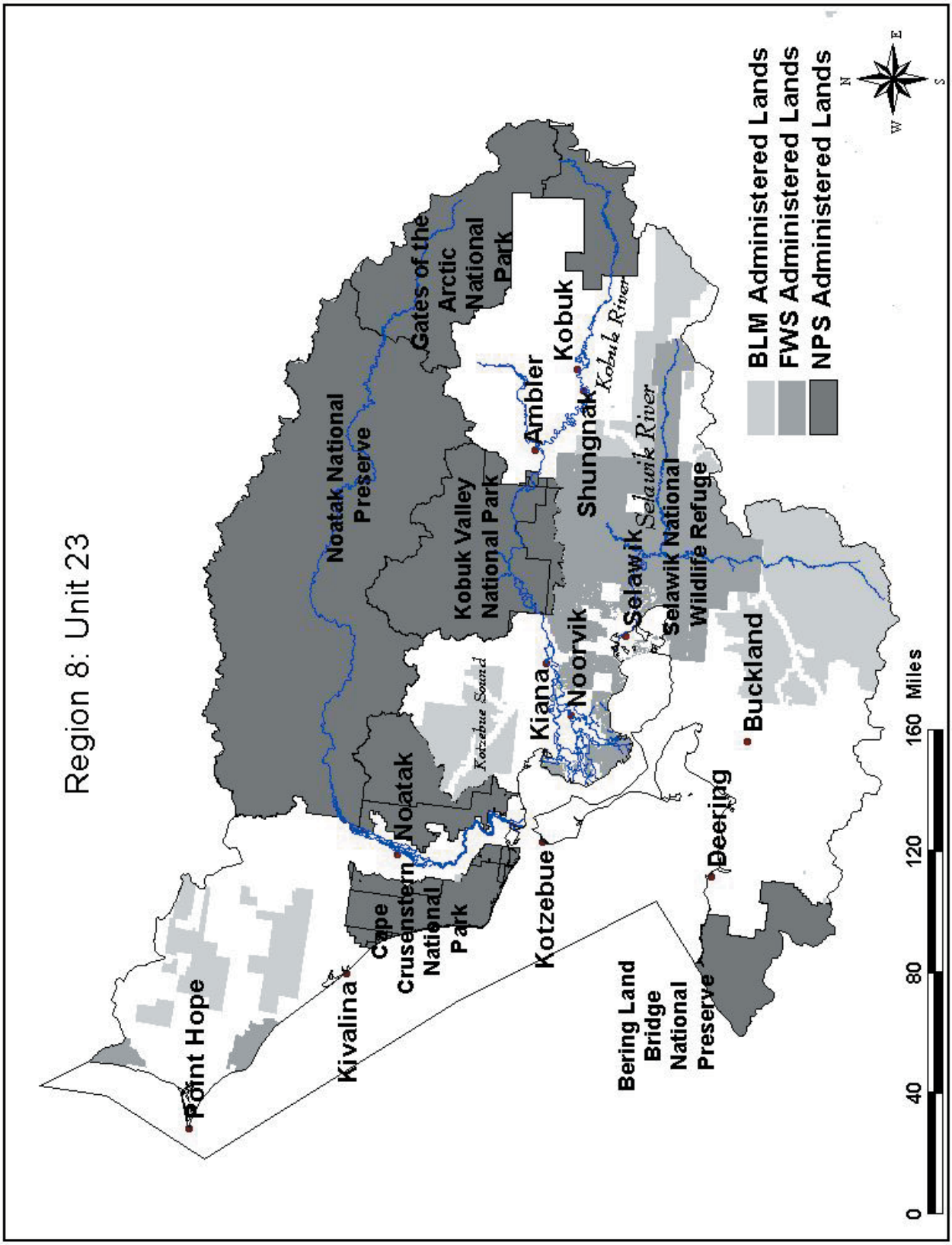

Region 4: Bristol Bay
Map 1
17B
9B
Nondalton
Iliamna
Newhalen
Pedro Bay
9A
New Stuyahok
17C
Twin Hills
Toglak
Aleknagik
Manokotak
Dillingham
Levelock
South Naknek
King Salmon
17A
9C
Egegik
Pilot Point
9E
Ugashik
Port Heiden
Chignik Lagoon
Port Moller
Chignik
Nelson Lagoon
Perryville
Ivanof Bay
Sand Point
100
0
100
200 Miles
N
NPS Administered Preserve Lands
NPS Administered Park Lands
FWS Administered Lands
BLM Administered Lands
February 3, 2004

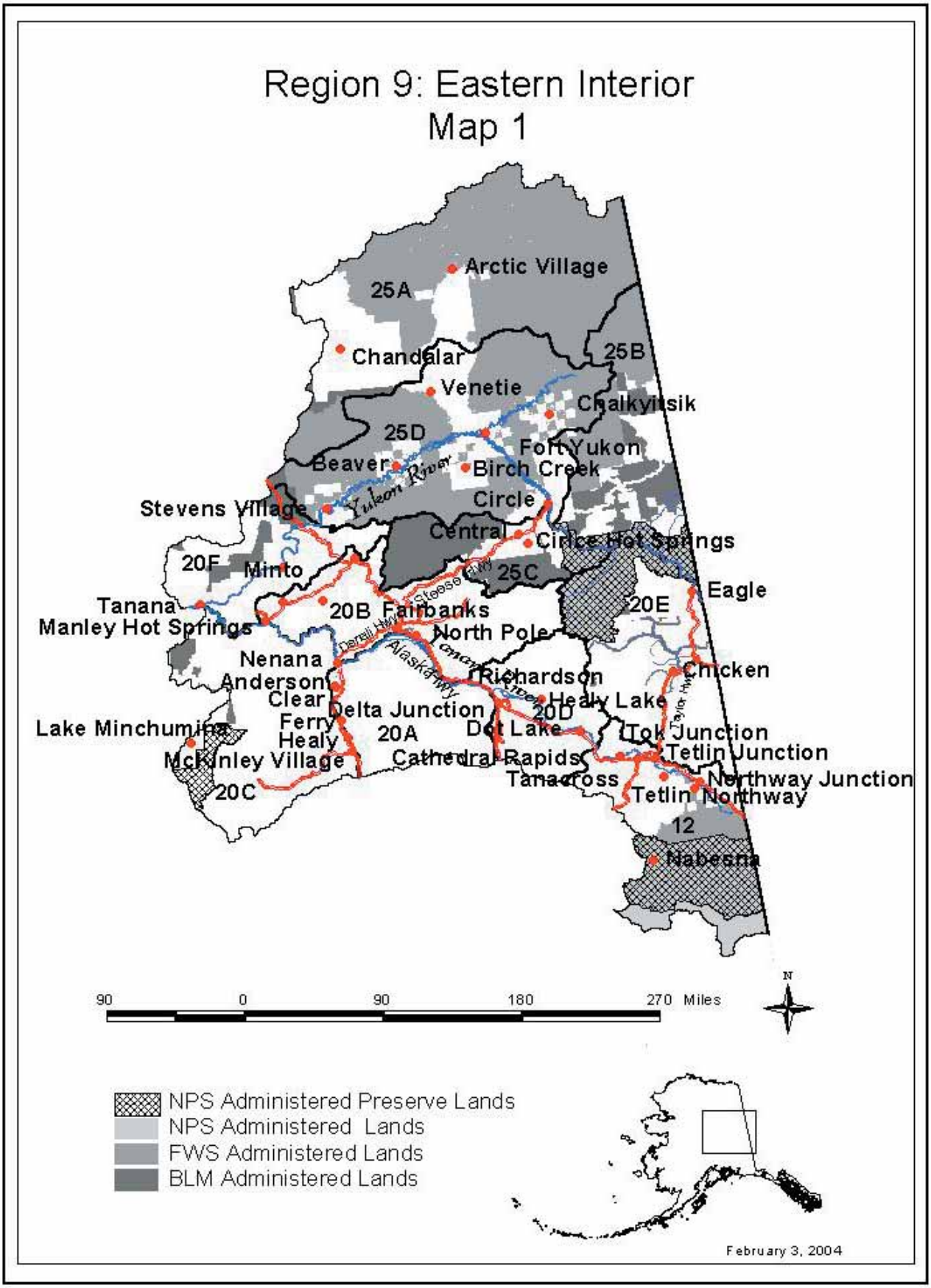
Region 5: Yukon Kuskokwim—Map 1

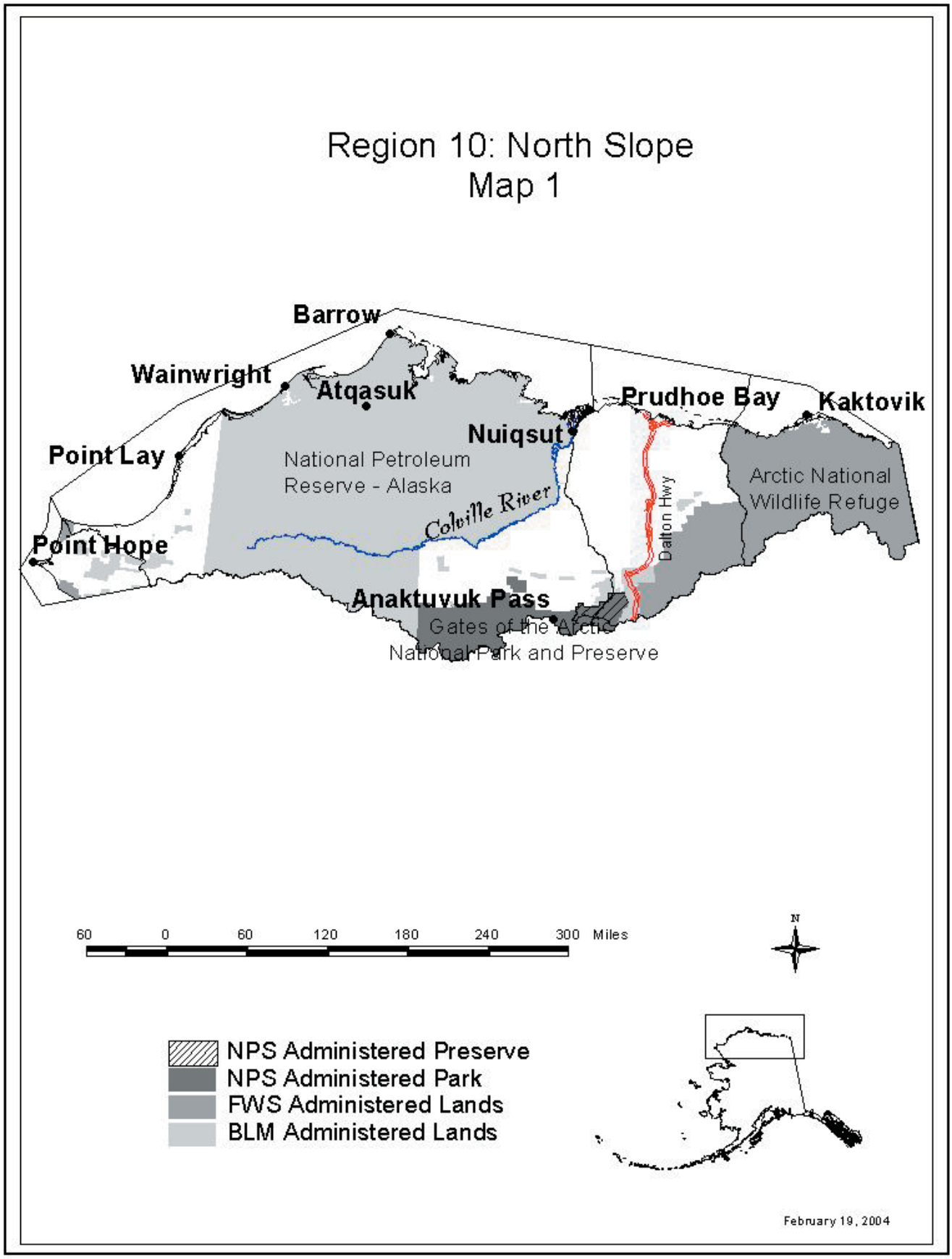



Region 6: Western Interior
Gates of the Arctic National Park and Preserve
Koyukuk National Wildlife Refuge
Koyukuk Controlled Use Area
Paradise Controlled Use Area
Innoko National Wildlife Refuge
Nowitna National Wildlife Refuge
John River
Koyukuk River
Yukon River
Kuskokwim
24
21D
21C
21B
21A
21E
19D
19C
19A
19B
Tar
Huslia
Galena
Ruby
Koyukuk
Nulato
Kaltag
Telida
Medfra
Nikolai
McGrath
Takotna
Iditarod
Shageluk
Grayling
Anvik
Holy Cross
Stuyahak
Paimiut
Kalskag
Chuathbaluk
Anvik
Crooked Creek
Red Devil
Stony River
Sleetmute
Napaimiut
Lime Village
Farewell
Kashegelok
0
80


Region 7: Unit 22
Bering Land Bridge National Preserve
Shishmaref
Wales
Little Diomede Island
22E
Brevig Mission
Teller
22D
Nome
Solomon
White Mountain
Golovin
Elim
Koyuk
22C
22B
Shaktoolik
Unalakleet
Stebbins
Saint Michael
22A
BLM Administered Lands
NPS Administered Lands
FWS Administered Lands
0
40
80
120
160 Miles
Gambell
Savoonga
St. Lawrence Island
22D


Region 8: Unit 23
Noatak National Preserve
Gates of the Arctic National Park
Kobuk Valley National Park
Ambler
Kobuk
Kobuk River
Shungnak
Selawik River
Selawik
Selawik National Wildlife Refuge
Noorvik
Kiana
Kotzebue Sound
Noatak
Buckland
Deering
Kotzebue
Cape Crusenstern National Park
Kivalina
Point Hope
Bering Land Bridge National Preserve
BLM Administered Lands
FWS Administered Lands
NPS Administered Lands
N
E
S
W
0
40
80
120
160 Miles


Region 9: Eastern Interior
Map 1
Arctic Village
25A
Chandalar
25B
Venetie
Chalkyitsik
25D
Fort Yukon
Beaver
Birch Creek
Yukon River
Circle
Stevens Village
Central
Circle Hot Springs
20F
Minto
25C
Eagle
Tanana
20B
Fairbanks
20E
Manley Hot Springs
North Pole
Nenana
Chicken
Anderson
Richardson
Clear
Healy Lake
Delta Junction
20D
Ferry
Lake Minchumina
Healy
20A
Dot Lake
Tok Junction
Tetlin Junction
McKinley Village
Cathedral Rapids
Tanacross
Northway Junction
20C
Tetlin
Northway
12
Nabesna
90
0
90
180
270 Miles
N
NPS Administered Preserve Lands
NPS Administered Lands
FWS Administered Lands
BLM Administered Lands
February 3, 2004


Region 10: North Slope
Map 1
Barrow
Wainwright
Atqasuk
Prudhoe Bay
Kaktovik
Nuiqsut
Point Lay
National Petroleum
Reserve - Alaska
Colville River
Dalton Hwy
Arctic National
Wildlife Refuge
Point Hope
Anaktuvuk Pass
Gates of the Arctic
National Park and Preserve
60 0 60 120 180 240 300 Miles
N
NPS Administered Preserve
NPS Administered Park
FWS Administered Lands
BLM Administered Lands
February 19, 2004

FP05-16 Executive Summary	
General Description	Remove requirement for a separate Federal permit. (Originator: Southeast Regional Advisory Council)
Proposed Regulation	**Yakutat Area – Steelhead** *§___.27(i)(12)(iv) You may take salmon, trout ~~(other than steelhead)~~, and char only under authority of a subsistence fishing permit. You may only take steelhead trout in the Situk and Ahrnklin Rivers ~~and only under authority of a Federal subsistence fishing permit~~.*
Region 1- Southeast Regional Council Recommendation	**Oppose.**
Interagency Staff Committee Recommendation	**Oppose.**
ADF&G Comments	The Federal Subsistence Board meeting book is being published prior to development of final recommendations and comments by the Alaska Department of Fish and Game. This information will be available on the Department's website by January 4, 2005. See the ADF&G homepage, under the headings of "highlights" and "regulations", at http://www.adfg.state.ak.us. For those without computer access, please call 1-907- 267-2360 for further information.
Written Public Comments	**None.**

REGIONAL ADVISORY COUNCIL RECOMMENDATIONS

SOUTHEAST REGIONAL COUNCIL

Oppose the proposal. Because State of Alaska and Federal subsistence regulations continue to differ for this fishery, a single permit cannot be used to authorize subsistence fishing under both sets of regulations.

INTERAGENCY STAFF COMMITTEE RECOMMENDATION

Oppose the proposal, consistent with the recommendation of the Southeast Regional Advisory Council.

Justification

Supporting or opposing this proposal will have little direct effect to the steelhead stocks, the users, or management. However, until and unless Federal and State regulations align, separate permits are still needed to effectively implement and enforce these Federal and State fisheries. Separate permits have worked reasonably well the past three seasons. Federal and State managers have shared effort and harvest data in a standard format and in a timely manner.

COMMENTS

ADF&G

The Federal Subsistence Board meeting book is being published prior to development of final recommendations and comments by the Alaska Department of Fish and Game. This information will be available on the Department's website by January 4, 2005. See the ADF&G homepage, under the headings of "highlights" and "regulations", at http://www.adfg.state.ak.us. For those without computer access, please call 1-907- 267-2360 for further information.

PUBLIC

None.

STAFF ANALYSIS
FP05-16

ISSUES

Proposal FP05-16, submitted by the Southeast Regional Advisory Council, would continue to require Federal users to obtain a subsistence fishing permit to take steelhead trout in the Situk and Ahrnklin Rivers, but would not require the permit to be a Federal permit. The issues in FP05-16 are: a) can the State issue all the subsistence fishing permits for steelhead trout in the Situk and Ahrnklin Rivers despite regulatory differences; and b) would a single permit create more confusion and enforcement problems than currently exist?

DISCUSSION

Regulatory changes in recent years have resulted in both State and Federal permits being issued for the subsistence take of steelhead trout in the Situk and Ahrnklin Rivers. There is an overlap in State and Federal regulations and management of steelhead trout (and salmon) in the Yakutat Area. Both the Alaska Department of Fish and Game (ADF&G) and the USDA Forest Service manage subsistence fisheries for steelhead and require harvesters to have a permit. Subsistence fishers have a long history of getting their subsistence permits from the local ADF&G office.

Federal and State subsistence fishing regulations differ. Federal regulations allow the use of rod and reel and bait and the State does not. Furthermore, 5AAC 01.680 (d) directs ADF&G to manage the directed fishery for an annual guideline harvest level of 300 steelhead trout and Federal permits are only issued to households in Yakutat while State permits are issued to any Alaskan household.

This proposal would eliminate the requirement of obtaining a Federal subsistence fishing permit to take steelhead in the Situk or Ahrnklin Rivers under Federal regulations. A single permit system is sought to promote an orderly fishery and simplify permitting, harvest reporting and monitoring. However, State and Federal managers could continue to issue separate permits and might continue to do so given regulatory differences and enforcement and eligibility concerns. Both ADF&G and the USDA Forest Service has the authority and need to put specific conditions on their permits and the expectation that users will follow these permit conditions.

Existing Federal Regulation

For the Yakutat Area

> *§___.27(i)(12)(iv) You may take salmon, trout (other than steelhead), and char only under authority of a subsistence fishing permit. You may only take steelhead trout in the Situk and Ahrnklin Rivers and only under authority of a Federal subsistence fishing permit.*

Proposed Federal Regulation

*§___.27(i)(12)(iv) You may take salmon, trout ~~(other than steelhead)~~, and char only under authority of a subsistence fishing permit. You may ~~only~~ take steelhead trout **only** in the Situk and Ahrnklin Rivers ~~and only under authority of a Federal subsistence fishing permit~~.*

Extent of Federal Public Waters

This regulation, if adopted, would apply to all Federal pubic waters in the Yakutat Area between the longitude of Cape Suckling and the longitude of Cape Fairweather. However, subsistence uses are not permitted in Glacier Bay National Park.

Note: For purposes of this discussion, the phrase "Federal public waters" is defined as those waters described under 50 CFR 100.3(b).

Customary and Traditional Use Determinations

Federal regulations state that "Residents of the area east of Yakutat Bay, including the islands within Yakutat Bay, west of the Situk River drainage, and south of and including Knight Island" have a positive customary and traditional use determination for salmon, Dolly Varden, steelhead trout, smelt, and eulachon in "freshwater upstream from the terminus of streams and rivers in the Yakutat Area from the Doame River to Point Manby." The State has the same customary and traditional use areas defined for freshwater and also includes the marine waters of Yakutat Bay and Russell Fjord inside of a line from the westernmost point of Point Manby to the southernmost point of Ocean Cape. The State allows subsistence fishing in these areas by any Alaskan resident. Federal public waters (unless outside 3 miles) are not restricted to only "Federally qualified users".

Regulatory History

Federal regulations pertaining to the subsistence harvest of salmon, trout, Dolly Varden, and smelt in the Yakutat area were adopted directly from State regulations when the Federal government assumed management of subsistence fisheries resources on Federal public lands and waters on October 1, 1999.

The State initiated a directed subsistence fishery for Situk and Ahrnklin River steelhead trout in 1997. The State regulation, 5AAC 01.680. (d), reads, "…the department shall issue subsistence permits for the taking of steelhead trout in the Situk and Ahrnklin Rivers, and it shall manage that directed fishery toward an annual guideline harvest level of 300 steelhead trout." State permits are issued only to households of Alaska residents, and only one is issued per household. The State planned to track effort and harvest in-season by issuing permits that are valid for one week and must be returned within seven days of the issue date. Permit stipulations allowed the permit holder and other household members authorized to fish the permit to harvest five steelhead. To date only one permit has been issued (in 2001). The permit was not fished and no steelhead were harvested.

The USDA Forest Service began issuing subsistence permits for steelhead in the Situk and

Ahrnklin Rivers in 2002 following a regulation change in 2002 requiring a Federal subsistence permit. Stipulations placed on these permits by the USDA Forest Service are that they are valid for one month or five fish harvested, that catches must be reported to the Yakutat Ranger District, and the permit may be modified for additional fish or time depending on total harvest. Participation and harvests have been small. Three households were issued permits and none were fished in 2002 (USDA-FS 2004). In 2003, 12 permits were issued, nine were fished, and eight steelhead were harvested (USDA-FS 2004). Preliminary results for 2004 are that six permits were issued, five were fished, and six steelhead were harvested (Gillikin 2004).

The requirement for a Federal permit was intended to address concerns about the legal use of rod and reel gear. The requirement for a Federal permit might have been unnecessary since the following two Federal regulations allow the use of rod and reel by Federally qualified users when they hold a State subsistence fishing permit:

Section _____.27(c)(17)(i) allows the use of rod and reel for Federally qualified users if the State issues a subsistence fishing permit.

Section _____.27(c)(19) states that Federally qualified users do not need to follow State permit provisions if they are in conflict with Federal rules.

Current Events Involving the Species

Steelhead escapement counts on the Situk River were declining in the early 1990s (Jones and Brookover 2000). The Alaska Department of Fish and Game closed the river to steelhead retention and restricted the use of bait. In 1994, the Alaska Board of Fisheries established a conservative one-steelhead bag limit, a two-fish annual limit, and a 36-inch minimum size limit for all steelhead streams in Southeast Alaska and Yakutat.

Runs and escapements of steelhead trout to the Situk and Ahrnklin Rivers appear relatively strong in recent years (Bain et. al. 2003; Jones and Brookover 2000; Casipit 2001; Johnson, 2004). Weir projects (**Table 1**) have been used to monitor escapements of Situk steelhead in recent years (Bain et. al. 2000; Johnson 2004). ADF&G reports complete counts of the outmigrant kelts in years 1990 and 1995 to 2004 (Table 1). The lowest count was 3,652 in 1990

Table 1. Number of steelhead kelts counted through the weir on the lower Situk River in years 1990 and 1995 to 2004 when complete counts were believed to be obtained.

Year	Count	Source
1990	3,652	Bain et. al. 2003
1995	6,680	"
1996	8,510	"
1997	7,328	Johnson (2004)
1998	5,786	"
1999	9,204	"
2000	6,709	"
2001	6,400	"
2002	6,113	"
2003	7,964	"
2004	12,398[a]	"

[a] Preliminary.

and the highest was over 12,000 in 2004. An escapement goal range has not been set for Situk River steelhead.

Biological Background and Harvest History

Steelhead returning to the Situk River are composed of a freshwater-maturing component (fall run steelhead), which enters the river between August and December, and an ocean-maturing component (winter or spring run steelhead), which enters between March and May. Both components emigrate during May and June after spawning in April and May. The majority of steelhead in Southeast Alaska reside in freshwater for three years prior to emigrating as smolt, and then spend two to three years in the ocean. However, fry may spend from one to five years in freshwater and then spend from two to six years in saltwater as adults prior to returning to spawn. Following spawning, steelhead can live to return and spawn several times.

Steelhead returning to the Situk River are harvested in the subsistence fishery, sport fishery, and incidentally in the commercial set gillnet fishery, while targeting salmon.

Effects of the Proposal

This proposed regulatory change would eliminate the need for Federally qualified subsistence users to obtain a Federal permit to harvest steelhead trout in the Situk and Ahrnklin Rivers. A subsistence fishing permit would still be required but either a State and/or a Federal permit could be issued, depending on current regulatory differences, management and enforcement concerns.

LITERATURE CITED

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FP05-17 Executive Summary	
General Description	Remove manager's authority and reporting requirement from ceremonial harvest provisions. (Originator: Wanda Culp)
Proposed Regulation	**Southeastern Alaska Area – Ceremonial Harvest** *§___.27(c)(21) The taking of fish from waters within Federal jurisdiction is authorized outside of published open seasons or harvest limits if the harvested fish will be used for food in traditional or religious ceremonies that are part of funerary or mortuary cycles, including memorial potlatches, provided that:* *(i) Prior to attempting to take fish, the person (or designee) or Tribal government organizing the ceremony contacts the appropriate Federal fisheries manager to provide the nature of the ceremony, the parties and/or clans involved, the species and the number of fish to be taken, and the Federal public waters from which the harvest will occur;* ***(in Subdistricts 14-B and 14-C, the manager only has to be informed that there will be an attempt to take fish for a ceremony);*** *(ii) The taking does not violate recognized principles of fisheries conservation, and uses the methods and means allowable for the particular species published in the applicable Federal regulations (the Federal fisheries manager will establish the number, species, or place of taking if necessary for conservation purposes)* ***(this paragraph (ii) does not apply in Subdistricts 14-B and 14-C)****;* *(iii)* ***Except in Subdistricts 14-B and 14-C*** *each person who takes fish under this section must, as soon as practical, and not more than 15 days after the harvest, submit a written report to the appropriate Federal Fisheries manager, specifying the harvester's name and address, the number and species of fish taken, and the date and location of the taking; and* *(iv) No permit is required for taking under this section; however, the harvester must be eligible to harvest the resource under Federal regulations.*
Region 1 - Southeast Regional Council Recommendation	**Support with modification** to include all of Southeast Alaska (and Yakutat).

FP05-17 Executive Summary	
Interagency Staff Committee Recommendation	The Interagency Staff Committee members did not reach consensus. The vote was evenly split, resulting in two different recommendations to the Federal Subsistence Board. **Option A:** **Support with modification**, consistent with the recommendation of the Southeast Regional Advisory Council, to not require a written or verbal report, and to apply to all of the Southeastern Region. See the Interagency Staff Committee Recommendation page for modified regulation language. **Option B:** **Support with modification**, contrary to the recommendation of the Southeast Regional Advisory Council. The only modification to the current regulation would be to allow a verbal report in place of a written report. See the Interagency Staff Committee Recommendation page for modified regulation language.
ADF&G Comments	The Federal Subsistence Board meeting book is being published prior to development of final recommendations and comments by the Alaska Department of Fish and Game. This information will be available on the Department's website by January 4, 2005. See the ADF&G homepage, under the headings of "highlights" and "regulations", at http://www.adfg.state.ak.us. For those without computer access, please call 1-907- 267-2360 for further information.
Written Public Comments	**None.**

REGIONAL ADVISORY COUNCIL RECOMMENDATIONS

SOUTHEAST REGIONAL COUNCIL

Support with modification. Council modified the proposal to include all of Southeast Alaska (and Yakutat):

.27c)21 The taking of fish from waters within Federal jurisdiction is authorized outside of published open seasons or harvest limits if the harvested fish will be used for food in traditional or religious ceremonies that are part of funerary or mortuary cycles, including memorial potlatches, provided that:

(i) (In Southeast Alaska) Prior to taking fish for a ceremony (koo.eex'), the person or Tribal government organizing the ceremony will inform the appropriate Federal fisheries manager that there will be an attempt to take fish for a ceremony.

(ii) (In Southeast Alaska) The taking does not violate recognized principles of fisheries conservation, and uses the methods and means allowable for the particular species published in the applicable Federal regulations. Only if necessary for conservation purposes, the Federal Fisheries Manager will establish the number, species, and places of taking.

(iii) Except in Southeast Alaska, (intent: reporting requirement will not apply in SE) Each person who takes fish under this section must, as soon as practical, and not more than 15 days after the harvest, submit a written report to the appropriate Federal fisheries manager, specifying the harvester's name and address, the number and species of fish taken, and the date and location of the taking; and

~~*(iv) Except in Southeast Alaska, (intent: reporting requirement will not apply in SE)*~~

The Council appreciated that the Board passed ceremonial harvest regulations in the 2003 regulatory cycle. At its 2003 wildlife meeting, the Board concurred with most of the Council recommendations; however, the Board included a strong reporting requirement to be placed on persons harvesting fish for ceremonial uses. The Council's 2003 recommendation did not include a reporting requirement. The Council noted that, in Southeast Alaska, *koo.eex'*, or pay off parties, are the final ceremony in traditional Native mortuary cycles. Generally held a year or more after a death, they mark the end of the mourning period. At *koo.eex'* the clan that has lost a member honors the opposing moiety clans that have provided support and distributes food, gifts, and money to the opposing clans. These ceremonies are at the heart of traditional Tlingit spirituality.

In making its 2003 recommendation, the Council did not believe that there was a conservation need to impose reporting requirements on persons organizing *koo.eex'*. A limited number of *koo.eex'* take place each year. *Koo.eex'* are well publicized far in advance of their occurrence, and the Central Council of Tlingit and Haida Tribes of Alaska maintains a web based listing of the *koo.eex'* that will take place in the coming year. This web based listing identifies the organizers of the *koo.eex'*, dates for the ceremony, clans represented, deceased to be honored at

the memorial party, and contact information. All local Federal managers should be aware of the mortuary celebrations scheduled for their areas. The Council believed that the amount of fish taken for *koo.eex'* was very limited. Because of the small harvests that are needed for *koo.eex'* and the respect shown for natural resources by Native participants, strict reporting requirements were not needed and would be perceived as being disrespectful of traditional Native spiritual practices concerning death.

The current proposal brought before the Council concerned the respect shown to Native culture and maintained that the current reporting requirement was an unnecessary intrusion in Native spiritual practice. The Council heard very strong testimony from representatives from Craig, Hoonah, and Kake:

> *when we are out there gathering for our koo.eex', we are doing this very religiously. We have our ways of harvesting that are very respectful to the water, to the salmon, to the resources that make all of this happen. We respect that. And we do say our prayers as we do this.*
>
> *it's just the idea that you have to go ask permission, you know, you have to get somebody's blessing to go something that you're going to have to do anyway when you've already got the blessing from your family because they're the ones who told you to go get it.*
>
> *I think that needs to be brought out so it will maybe work its way up the chain in Federal regulations and State statutes, to be sensitive enough to people that want to lay their people to rest.*

The Council also heard that very close harvest monitoring was not taking place for extensive sport fishing harvests in the Hoonah traditional territory. The Council found it disingenuous that regulations required very strict reporting requirements for ceremonial harvests while the much larger sport fishing harvests were not closely tracked. The Council noted that ceremonial harvests take place within Native spiritual and religious traditions. Government should be wary of intruding unnecessarily in the practice of these traditions.

Based on public testimony and the input from Council members, the Council modified the proposal to apply to all of Southeast Alaska and Yakutat.

Council deliberation noted that the limited harvests that are likely to take place under this regulation do not raise conservation concerns. Information presented substantially supports the proposal—the number of *koo.eex'* held in a given year is limited and harvests are insubstantial compared to other harvests of fish resources. Positive action on this proposal will benefit subsistence users by removing a reporting burden and by demonstrating respect for Native traditions. There will be no adverse effect on other users of fish resources through action on this proposal.

INTERAGENCY STAFF COMMITTEE RECOMMENDATION

The Interagency Staff Committee members did not reach consensus. The vote was evenly split, resulting in two different recommendations to the Federal Subsistence Board.

Option A:

Support with modification, consistent with the recommendation of the Southeast Regional Advisory Council, to not require a written or verbal report, and to apply to all of the Southeastern Region.

The modified proposed regulation would read:

§____.27(c)(21) The taking of fish from waters within Federal jurisdiction is authorized outside of published open seasons or harvest limits if the harvested fish will be used for food in traditional or religious ceremonies that are part of funerary or mortuary cycles, including memorial potlatches, provided that:

In the Southeast Alaska Region:

(i) Prior to taking fish for a ceremony (koo.eex'), the person or Tribal government organizing the ceremony will inform the appropriate Federal fisheries manager that there will be an attempt to take fish for a ceremony.

(ii) The taking does not violate recognized principles of fisheries conservation, and uses the methods and means allowable for the particular species published in the applicable Federal regulations. Only if necessary for conservation purposes, the Federal Fisheries Manager will establish the number, species, and place(s) of taking.

~~*(iii) Each person who takes fish under this section must, as soon as practical, and not more than 15 days after the harvest, submit a written report to the appropriate Federal Fisheries manager, specifying the harvester's name and address, the number and species of fish taken, and the date and location of the taking ; and*~~

(iv) No permit is required for taking under this section; however, the harvester must be eligible to harvest the resource under Federal regulations.

Justification

The Southeast Regional Advisory Council's recommendation retains the existing requirement to inform the Federal fisheries manager that there will be an attempt to take fish for a ceremony. This should significantly reduce the potential for conflicts with law enforcement officers when such activities are being conducted. The elimination of the post-harvest reporting requirement is necessary to address important cultural sensitivity concerns associated with these traditional Native spiritual practices. Even without such reporting, adequate information on the species, their amounts, and locations of harvest would still be available to the managers through the

initial contact by the harvester and/or the Tribal organization.

Those holding this view do not find justification in rejecting the Council's recommendation based on the criteria outlined in ANILCA Title VIII Section 805(c). The Council recommendation does not present a conservation concern, as the targeted species (coho and/or sockeye salmon) are abundant, and the numbers typically harvested for these ceremonies are low. Additionally, the measures that currently exist in the regulations, to address potential concerns about over-harvest of specific, localized fish populations, are retained. The Council's recommendation is not detrimental to subsistence users, but instead more adequately provides for an important subsistence-related activity, and is supported by evidence provided to them via oral testimony at the fall 2004 Council meeting.

Option B:

Support with modification, contrary to the recommendation of the Southeast Regional Advisory Council. The only modification to the current regulation would be to allow a verbal report in place of a written report.

The modified proposed regulation would read:

§___.27(c)(21) The taking of fish from waters within Federal jurisdiction is authorized outside of published open seasons or harvest limits if the harvested fish will be used for food in traditional or religious ceremonies that are part of funerary or mortuary cycles, including memorial potlatches, provided that:

(i) Prior to attempting to take fish, the person (or designee) or Tribal Government organizing the ceremony contacts the appropriate Federal fisheries manager to provide the nature of the ceremony, the parties and/or clans involved, the species and the number of fish to be taken, and the Federal public waters from which the harvest will occur;

(ii) The taking does not violate recognized principles of fisheries conservation, and uses the methods and means allowable for the particular species published in the applicable Federal regulations (the Federal fisheries manager will establish the number, species, or place of taking if necessary for conservation purposes);

(iii) Each person who takes fish under this section must, as soon as practical, and not more than 15 days after the harvest, submit a written report to the appropriate Federal Fisheries manager, specifying the harvester's name and address, the number and species of fish taken, and the date and location of the taking ***(except in Southeast Alaska where a verbal report may be substituted for a written report)****; and*

(iv) No permit is required for taking under this section; however, the harvester must be eligible to harvest the resource under Federal regulations.

Justification

The existing regulation appears to be working well, including providing explicit authorization

to take fish for traditional or religious ceremonies that are part of funerary or mortuary cycles, including memorial potlatches. At the same time, the regulation provides information needed for conservation of fish resources. There is no substantial evidence that the regulation is not working as anticipated on a Southeast-wide basis.

The proposed wording by both the proponent and the Southeast Regional Advisory Council does not provide sufficient information for the manager to assure conservation of the resource or allow for the unobstructed implementation of the take. Those holding this view find justification in modifying the Council's recommendation based on the criteria outlined in ANILCA Title VIII Section 805(c).

The modification to sub-section (i) proposed by the Council would require only informing a Federal fisheries manager that there will be an attempt to take fish for a ceremony. The revised regulation would not be specific in time or place. The informing could occur at the beginning of the regulatory year and be no more specific than, "I plan to take fish in Southeast Alaska for a ceremony." The manager would have no basis to evaluate whether the taking violates recognized principles of fisheries conservation, as required in the proposed regulatory sub-section (ii) and further required by ANILCA, Title VIII, sections 802 and 815. Since the take under Federal regulations must occur in inland waters, there is the potential of over fishing specific stocks. Regulatory sub-section (ii) also states, "Only if necessary for conservation purposes, the Federal fisheries manager will establish the number, species, and places of taking." Since sub-section (i) does not require specific identification of the proposed number, species and place of harvest, it would be internally inconsistent with the requirements of sub-section (ii). If the presence of this language in sub-section (ii) in effect implies or requires this information to be provided in sub-section (i), then the existing regulatory language does that and does not need modification. Regulations must not be vague or inconsistent, otherwise they are unenforceable.

Implementation of the Council's recommendation would also not allow the manager to have a reasonable level of comfort that persons taking the fish would not be harassed by others, or unecessarily contacted by law enforcement officials. Particularly during ceremonial times of harvest, those taking fish should not be burdened by administrative concerns. If the manager and law enforcement are not aware of the location and time of the harvest, there is substantially greater likelihood that those taking the fish will be stopped, questioned and potentially cited. No permit is required by those taking fish, therefore there will be no record of whether the harvest is legal or illegal. In the long run, this could be more detrimental to the satisfaction of subsistence needs and the effecting of religious ceremonies than what is currently required.

This group of Interagency Staff Committee members does suggest that the reporting requirement after a harvest occurs could be modified to only require a verbal report of the harvest that occurred. The manager would then document the harvest, negating the need for the user to spend time writing a report.

COMMENTS

ADF&G

The Federal Subsistence Board meeting book is being published prior to development of final recommendations and comments by the Alaska Department of Fish and Game. This information will be available on the Department's website by January 4, 2005. See the ADF&G homepage, under the headings of "highlights" and "regulations", at http://www.adfg.state.ak.us. For those without computer access, please call 1-907- 267-2360 for further information.

PUBLIC:

None.

STAFF ANALYSIS
FP05-17

ISSUES

Proposal FP05-17, submitted by Ms. Wanda Culp of Hoonah would change the regulations governing ceremonial harvest of fish in fishing Subdistricts 14-B and 14-C.

The proponent wishes to reduce the regulatory burden placed on persons who wish to take fish for traditional ceremonial purposes. Under the proposed change, the appropriate fisheries manager would be informed that an attempt to take fish for a ceremony was going to be made. The manager would not have the authority to limit or direct the take for conservation purposes, and no reporting would be required. The proponent was contacted to clarify her proposal. The proponent stated that government regulations should not interfere in any way with the taking of fish for traditional funeral ceremonies and that taking fish for this purpose was protected under the American Indian Religious Freedom Act. Ms. Culp strongly objected to what she saw as unnecessary and unlawful regulation of a core traditional harvesting activity. She said that people continue to get the fish that they need for traditional ceremonies, although some harvesting may take place outside the boundaries of existing regulations (Culp 2004, pers. comm.).

DISCUSSION

Existing Federal Regulation

The existing Federal subsistence management regulations were passed in the 2003 regulatory cycle.

> *§___.27(c)(21) The taking of fish from waters within Federal jurisdiction is authorized outside of published open seasons or harvest limits if the harvested fish will be used for food in traditional or religious ceremonies that are part of funerary or mortuary cycles, including memorial potlatches, provided that:*
>
> *(i) Prior to attempting to take fish, the person (or designee) or Tribal government organizing the ceremony contacts the appropriate Federal fisheries manager to provide the nature of the ceremony, the parties and/or clans involved, the species and the number of fish to be taken, and the Federal public waters from which the harvest will occur;*
>
> *(ii) The taking does not violate recognized principles of fisheries conservation, and uses the methods and means allowable for the particular species published in the applicable Federal regulations (the Federal fisheries manager will establish the number, species, or place of taking if necessary for conservation purposes);*
>
> *(iii) Each person who takes fish under this section must, as soon as practical, and not more than 15 days after the harvest, submit a written report to the appropriate Federal Fisheries manager, specifying the harvester's name and address, the number and species of fish taken, and the date and location of the taking; and*

(iv) No permit is required for taking under this section; however, the harvester must be eligible to harvest the resource under Federal regulations.

Proposed Federal Regulation

The proponent proposed the following regulation:

§___.27(c)(21) The taking of fish from waters within Federal jurisdiction is authorized outside of published open seasons or harvest limits if the harvested fish will be used for food in traditional or religious ceremonies that are part of funerary or mortuary cycles, including memorial potlatches, provided that:

*(i) Prior to attempting to take fish, the person (or designee) or Tribal government organizing the ceremony contacts the appropriate Federal fisheries manager to provide the nature of the ceremony, the parties and/or clans involved, the species and the number of fish to be taken, and the Federal public waters from which the harvest will occur**; (in Subdistricts 14-B and 14-C, the manager only has to be informed that there will be an attempt to take fish for a ceremony);***

*(ii) The taking does not violate recognized principles of fisheries conservation, and uses the methods and means allowable for the particular species published in the applicable Federal regulations (the Federal fisheries manager will establish the number, species, or place of taking if necessary for conservation purposes) **(this paragraph (ii) does not apply in Subdistricts 14-B and 14-C);***

***(iii) Except in Subdistricts 14-B and 14-C** each person who takes fish under this section must, as soon as practical, and not more than 15 days after the harvest, submit a written report to the appropriate Federal Fisheries manager, specifying the harvester's name and address, the number and species of fish taken, and the date and location of the taking; and*

(iv) No permit is required for taking under this section; however, the harvester must be eligible to harvest the resource under Federal regulations.

Extent of Federal Public Waters

This regulation, if adopted, would apply to all Federal public waters in Subdistricts 14-B and 14-C of Southeastern Alaska. Note that subsistence uses are not permitted in the portion of Subdistrict 14-B that is within the boundaries of Glacier Bay National Park. In both of these subdistricts, Federal jurisdiction does not extend into marine waters and is limited to waters above mean high tide.

Note: For purposes of this discussion, the phrase "Federal public waters" is defined as those waters described under 50 CFR 100.3(b).

Customary and Traditional Use Determinations

Residents of the City of Hoonah and of Chichagof Island drainages on the eastern shore of Port

Frederick from Gartina Creek to Point Sophia have recognized customary and traditional use of salmon, Dolly Varden, trout, smelt, and eulachon in Subdistricts 14-B and 14-C.

Regulatory History

The present regulation concerning ceremonial harvest of fish was passed during the 2003 regulatory cycle. Prior to the passage of this regulation, a special action request would have been required to provide for fish harvests of this type. The Federal Subsistence Board (Board) passed a statewide regulation concerning ceremonial harvest of fish after reviewing recommendations from Regional Advisory Councils.

The Board concurred with most provisions of the Southeast Regional Advisory Council's recommendation concerning ceremonial fish harvesting although the Council recommended against having a reporting requirement (SERAC 2002). The Council reasoned that 1) there were a limited number of memorial events and ceremonies (*k̲oo.éex'*) held in Southeast Alaska, averaging 20-25 per year, 2) ceremonies were well publicized and listed on the Central Council web site, 3) salmon would be the species taken, and that 4) harvest levels of salmon under this regulation were expected to be extremely low compared to commercial and sport uses of salmon species. The Council believed that harvests were inherently self-limiting and recommended voluntary reporting of ceremonial harvests. The proponent stated that the taking of fish for traditional funeral ceremonies was protected under the American Indian Religious Freedom Act.

Ceremonial Use of Fish in Southeast Alaska

Traditional funerary and mortuary practices in Southeast Alaska typically include three occasions where subsistence foods may be served to guests: a bereavement dinner shortly after a death has taken place, a 40 day *k̲oo.éex'*, and a pay off *k̲oo.éex'*, generally held in September or October a year or more after a death. Fish figure importantly in all of these occasions. Large quantities of fish may be needed for pay off parties. These ceremonies may have hundreds of guests who will receive a number of meals during the ceremonies. Guests also receive gifts of smoked, canned, and dried fish and other subsistence products in memory of the deceased and in repayment for the assistance they have given to the clan which has lost a member (Kan, 1989).

Although all subsistence fish may be served or distributed at these ceremonies in Hoonah, salmon and halibut are the most important in terms of quantities used.

Ceremonial Harvests

Almost all salmon taken for subsistence uses in Southeast Alaska are taken in marine waters. Because marine waters are generally not under Federal jurisdiction for subsistence management purposes, harvests take place under State of Alaska regulations. There are no locations within Subdistricts 14-B and 14-C where large quantities of salmon have been traditionally taken in waters under Federal jurisdiction. No Federal permits for ceremonial harvests of fish have been issued under the current regulation in these or other subdistricts in Southeast Alaska.

Ceremonial needs for salmon for Hoonah residents are met through subsistence net fisheries for sockeye salmon at Hoktaheen, Neva, Excursion, and other rivers, and through rod and reel harvests of Chinook, chum, and silver salmon. Salmon are also removed from commercial net and troll harvests for ceremonial uses.

Halibut, also important for traditional ceremonies, is regulated by international treaty and is not subject to Board regulation.

Effects of the Proposal

This proposal would limit the information provided to a fishery manager before an attempt to take fish for a ceremony would take place. The new regulation would eliminate the applicability of regulatory paragraphs concerning conservation and reporting of ceremonial harvests for Subdistricts 14-B and 14-C.

In practice, the proposal would have negligible effect on subsistence users or other uses of fishery resources. No Federal permits have been issued for ceremonial harvests, and, given that Federal jurisdiction is limited to fresh waters in these subdistricts, no permits are likely to be issued in the future.

LITERATURE CITED

Culp, W., 2004. Hoonah, AK. Personal Communication.

Kan, S., 1989. Symbolic immortality: the Tlingit potlatch of the nineteenth century. Washington D. C.: Smithsonian Institution Press.

SERAC 2002. Transcripts of the Southeast Regional Advisory Council, Sept. 30 to Oct. 3, 2002 in Hoonah, Alaska. Office of Subsistence Management, USFWS. Anchorage, AK.

FP05-18 Executive Summary	
General Description	Allow fishing within 300 feet of a fish ladder. (Originator: Southeast Regional Advisory Council)
Proposed Regulation	**Southeastern Alaska Area – Various** *§___.27(c)(10) You may not take fish for subsistence uses within 300 feet of any dam, fish ladder, weir, culvert or other artificial obstruction, unless otherwise indicated.* ***§___.27(i)(13)(xviii) Subsistence fishing within 300 feet of a fish ladder with rod and reel is allowed unless marked. No person may fish from, on or in a fish ladder.***
Region 1 - Southeast Regional Council Recommendation	**Support with modification** to change "marked" to "posted by the USDA Forest Service" for clarity.
Interagency Staff Committee Recommendation	**Support with modification to** change "marked" to "posted by the USDA Forest Service" for clarity.
ADF&G Comments	The Federal Subsistence Board meeting book is being published prior to development of final recommendations and comments by the Alaska Department of Fish and Game. This information will be available on the Department's website by January 4, 2005. See the ADF&G homepage, under the headings of "highlights" and "regulations", at http://www.adfg.state.ak.us. For those without computer access, please call 1-907- 267-2360 for further information.
Written Public Comments	**None.**

REGIONAL ADVISORY COUNCIL RECOMMENDATIONS

SOUTHEAST REGIONAL COUNCIL

Support with modification to change "marked" to "posted by the USDA Forest Service" for clarity.

The modified proposed regulation should read:

> ***§___.27(i)(13)(xviii) Subsistence fishing within 300 feet of a fish ladder with rod and reel is allowed unless posted by the USDA Forest Service. No person may fish from, on or in a fish ladder.***

Subsistence fishing within 300 feet of a fish ladder with rod and reel is allowed unless posted by the USDA Forest Service. No person may fish from, on, or in a fish ladder. SERAC supports this proposal to clarify Federal regulations and align these regulations with State of Alaska sport fishing regulations. This proposal came from a Council working group asked to examine regulations in Southeast Alaska and to identify possible changes. This proposal would allow subsistence users to use rod and reel within 300 feet of a fish ladder, something already allowed under State of Alaska regulations.

INTERAGENCY STAFF COMMITTEE RECOMMENDATION

Support with modification, consistent with the recommendation of the Southeast Regional Advisory Council, to change "marked" to "posted by the USDA Forest Service."

The modified proposed regulation should read:

> ***§___.27(i)(13)(xviii) Subsistence fishing within 300 feet of a fish ladder with rod and reel is allowed unless posted by the USDA Forest Service. No person may fish from, on or in a fish ladder.***

Justification

The modification would change "marked" to "posted by the USDA Forest Service" for clarity. Allowing the use of rod and reel within 300 feet of a fish ladder will align Federal subsistence and State sport fishing regulations for the use of this gear type. This proposed regulation would provide for additional Federal subsistence fishing opportunities while not significantly increasing the total harvest of fish or change harvest patterns. Regulatory flexibility accorded to the USDA Forest Service will provide for any unforeseen conservation concerns.

COMMENTS

ADF&G

The Federal Subsistence Board meeting book is being published prior to development of final recommendations and comments by the Alaska Department of Fish and Game. This information will be available on the Department's website by January 4, 2005. See the ADF&G homepage, under the headings of "highlights" and "regulations", at http://www.adfg.state.ak.us. For those without computer access, please call 1-907- 267-2360 for further information.

PUBLIC

None.

STAFF ANALYSIS
FP05-18

ISSUES

Proposal FP05-18, submitted by the Southeast Alaska Subsistence Regional Advisory Council, would allow the use of rod and reel gear for subsistence fishing within 300 feet of fish ladder structures in the Southeastern Alaska Area.

DISCUSSION

Fish ladders are designed to increase a stream's production of fish by providing access to quality habitat located beyond migration barriers. These structures are generally justified by their ability to provide increased harvest opportunities for commercial, sport and subsistence fisheries. Federal subsistence fishing regulations prevent the use of any gear within 300 feet of a fish ladder while sport anglers are allowed to use rod and reel near a fish ladder.

State sport fishing regulations for Southeast Alaska allow the use of rod and reel near fish ladder structures.

1. State sport regulation: 5 AAC 47.030. (f) Fishing within 300 feet of a fish ladder is allowed unless otherwise posted by department markers. No person may fish from, on, or in a fish ladder.

State subsistence and personal use regulations do not allow the use of rod and reel nor do they allow fishing within 300 feet of an artificial fish passage structure with other gear types.

1. State subsistence regulation: 5 AAC 01.010. (e) Fishing for, taking or molesting any fish by any means, or for any purpose is prohibited within 300 feet of any dam, fish ladder, weir, culvert or other artificial obstruction.

2. State personal use regulation: 5 AAC 77.010. (c) It is unlawful to take fish within 300 feet of any dam, fish ladder, weir, culvert or other artificial obstruction.

The current situation allows sport anglers (resident and non-resident) an opportunity to fish near fish ladders that is not available to Federal subsistence users.

With the exception of steelhead on Prince of Wales Island and trout in six systems, the trout, steelhead and char harvest limits in Southeast Alaska are identical for sport and Federal subsistence fisheries. Sport fishers are allowed six coho salmon per day, with no annual limit, for each individual while Federal subsistence fishers are allowed 20 coho per day per household (there is a 40 fish annual limit per household outside of Sections 3-A, 3-B, and 3-C). Other salmon are subject to the six fish per day limit in the sport fishery but have larger or no limits in the Federal subsistence fishery. It is not anticipated that this regulatory change will produce a conservation concern but, in that event, both the State and Federal managers may restrict the area open to fishing by posting appropriately.

Existing Federal Regulation

There is an existing statewide Federal subsistence fishing regulation that prohibits subsistence

fishing within 300 feet of an artificial structure.

§___.27(c)(10) You may not take fish for subsistence uses within 300 feet of any dam, fish ladder, weir, culvert or other artificial obstruction, unless otherwise indicated.

Proposed Federal Regulation

The proposed regulation would allow the use of rod and reel within 300 feet of a fish ladder in the freshwaters of the Southeastern Alaska Area as the exception to the statewide rule. The following would be inserted in the Southeastern Alaska Area section:

§___.27(i)(13)(xviii) Subsistence fishing within 300 feet of a fish ladder with rod and reel is allowed unless marked. No person may fish from, on or in a fish ladder.

Subsequent discussions have noted a need for this regulation change to be less ambiguous. A modification to change "marked" to "posted by the USDA Forest Service" would make the language more specific.

Extent of Federal Public Waters

This regulation, if adopted, would apply to all Federal public waters in the Southeastern Alaska Area, between a line projecting southwest from the westernmost tip of Cape Fairweather and Dixon Entrance. However, subsistence uses are not permitted in the following National Park Service waters: Glacier Bay National Park, Klondike Gold Rush National Historical Park and Sitka National Historical Park.

Note: For purposes of this discussion, the phrase "Federal public waters" is defined as those waters described under 50 CFR 100.3(b).

Customary and Traditional Use Determinations

Customary and Traditional Use Determinations for the Southeastern Alaska Area apply and are listed in Appendix A at the end of the Fisheries Regulatory Review and Recommendation Section.

Effects of the Proposal

If adopted, this proposal would allow Federally qualified users to use a rod and reel to harvest fish near fish ladders. This change would align Federal subsistence fishing regulations concerning the use of rod and reel near fish ladders with State sport fishing regulations. Fishing with gear other than rod and reel within 300 feet of fish passage structures would remain prohibited which would be consistent with both Federal regulations and State subsistence and personal use regulations.

This regulation change would not result in a significant increased harvest of fish or change harvest patterns because there is little effective difference between State individual sport fishing harvest limits and Federal household harvest limits.

FP05-19 Executive Summary	
General Description	Limit types of gear allowable. (Originator: Southeast Regional Advisory Council)
Proposed Regulation	**Southeastern Alaska Area – Various** To be inserted in the Southeastern Alaska Area section: ***§_.27(i)(13)(xviii) Unless otherwise specified in this section, allowable gear in the Southeast Alaska area is restricted to: gaffs, spears, gillnets, beach seines, dip nets, cast nets, handlines and rod and reel.***
Region 1 - Southeast Regional Council Recommendation	**Support with modification** to have the allowable gear apply only to salmon and steelhead, and not to other fish species.
Interagency Staff Committee Recommendation	**Support with modification,** consistent with the recommendation of the Southeast Regional Advisory Council. The proposed modifications reflect the intent of the proposal, applying to salmon and steelhead fisheries by adding the words "salmon and steelhead," and allowing all types of seines by removing the word "beach" from the proposed regulation.
ADF&G Comments	The Federal Subsistence Board meeting book is being published prior to development of final recommendations and comments by the Alaska Department of Fish and Game. This information will be available on the Department's website by January 4, 2005. See the ADF&G homepage, under the headings of "highlights" and "regulations", at http://www.adfg.state.ak.us. For those without computer access, please call 1-907- 267-2360 for further information.
Written Public Comments	**None.**

REGIONAL ADVISORY COUNCIL RECOMMENDATIONS

SOUTHEAST COUNCIL RECOMMENDATION

Support with modification. This proposal also came from the Council working group that was asked to examine regulations in Southeast Alaska and to identify possible changes. The Council agreed that regulations should authorize as allowable gear for Southeast Alaska only those types of gear that are actually used in the region. The Council discussed which types of gear are used in subsistence fisheries and agreed with the staff recommendation on gear types.

The Council modified the proposal to have the allowable gear apply only to salmon and steelhead and not to other fish species. Based on the staff report and the personal knowledge of Council members, these are the gear types commonly used in the region. The Council recognizes that gear restrictions may be put into regulation, when needed, for specific species in specific areas.

The Council modified the proposal as follows:

§_.27(i)(13)(xviii) Unless otherwise specified in this section, allowable gear in the Southeast Alaska Area salmon and steelhead fisheries is restricted to: gaffs, spears, gillnets, seines, dip nets, cast nets, handlines, and rod and reel.

INTERAGENCY STAFF COMMITTEE RECOMMENDATION

Support with modification, consistent with the recommendation of the Southeast Regional Advisory Council. The proposed modifications reflect the intent of the proposal, applying to salmon and steelhead fisheries by adding the words "salmon and steelhead," and allowing all types of seines by removing the word "beach" from the proposed regulation.

The modified proposed regulation should read:

> ***§_.27(i)(13)(xviii) Unless otherwise specified in this section, allowable gear in the Southeast Alaska Area salmon and steelhead fisheries is restricted to: gaffs, spears, gillnets, seines, dip nets, cast nets, handlines, and rod and reel.***

Justification

This regulation would modify the statewide regulation by reducing the gear types available for salmon and steelhead fishing in Southeastern Alaska. The gear restrictions recognize subsistence fishing practices in the Southeastern Alaska Area and would provide Federally-qualified users clear, concise direction on allowable gear types. This proposed regulation would not increase the harvest of subsistence fish; therefore, there is no conservation concern with adopting this proposal.

COMMENTS

ADF&G

The Federal Subsistence Board meeting book is being published prior to development of final recommendations and comments by the Alaska Department of Fish and Game. This information will be available on the Department's website by January 4, 2005. See the ADF&G homepage, under the headings of "highlights" and "regulations", at http://www.adfg.state.ak.us. For those without computer access, please call 1-907- 267-2360 for further information.

PUBLIC

None.

STAFF ANALYSIS
FP05-19

ISSUES

Proposal FP05-19, submitted by the Southeast Regional Advisory Council, would simplify the statewide list of legal gear to be more reflective of gear used in subsistence salmon fisheries in the Southeastern Alaska Area.

DISCUSSION

Existing Federal Regulation

The existing statewide regulation specifies the types of gear allowed in subsistence fishing and reads as follows:

§___.27(c)(1) Unless otherwise specified in this section or under terms of a required subsistence fishing permit (as may be modified by this section), you may use the following legal types of gear for subsistence fishing:

(i) A set gillnet;
(ii) A drift gillnet;
(iii) A purse seine;
(iv) A hand purse seine;
(v) A beach seine;
(vi) Troll gear;
(vii) A fish wheel;
(viii) A trawl;
(ix) A pot;
(x) A longline;
(xi) A fyke net;
(xii) A lead;
(xiii) A herring pound;
(xiv) A dip net;
(xv) Jigging gear;
(xvi) A mechanical jigging machine;
(xvii) A handline;
(xviii) A cast net;
(xix) A rod and reel; and
(xx) A spear.

Proposed Federal Regulation

The proposed regulation would reduce the statewide list of allowable gear to those gear types that are used in the freshwaters of the Southeastern Alaska Area. The use of a gaff would be added. The following would be inserted in the Southeastern Alaska Area section:

§___.27(i)(13)(xviii) Unless otherwise specified in this section, allowable gear in the Southeast Alaska area is restricted to: gaffs, spears, gillnets, beach seines, dip nets, cast nets, handlines and rod and reel.

Extent of Federal Public Waters

This regulation, if adopted, would apply to all Federal public waters in the Southeastern Alaska Area, between a line projecting southwest from the westernmost tip of Cape Fairweather and Dixon Entrance. However, subsistence uses are not permitted in the following National Park Service lands: Glacier Bay National Park, Klondike Gold Rush National Historical Park and Sitka National Historical Park.

Note: For purposes of this discussion, the phrase "Federal public waters" is defined as those waters described under 50 CFR 100.3(b).

Customary and Traditional Use Determinations

Customary and Traditional Use Determinations for the Southeastern Alaska Area apply and are listed in Appendix A at the end of the Fisheries Regulatory Review and Recommendation section.

Effects of the Proposal

The proposed list of allowable gear recognizes fishing practices in State and Federal subsistence salmon fisheries in the Southeastern Alaska Area. This proposal would provide Federally qualified subsistence users with clear, concise direction on allowable gear for subsistence salmon fishing. Except for handlines, the proposed list of gear types is the same as those listed on State subsistence/personal use permits in the Southeastern Alaska Area.

This proposed regulation would not result in increased harvest of salmon or change harvest patterns. It only identifies existing practices of harvest. There is no conservation concern with adopting this proposal. Steelhead, trout, char, coho salmon and Stikine River sockeye salmon fisheries already have specific allowable gear identified.

FP05-28 Executive Summary	
General Description	Liberalize harvest regulations. (Originator: John Littlefield)
Proposed Regulation	**Southeastern Alaska Area – Steelhead** *§___.27(i)(13)(iii) You must possess a subsistence fishing permit to take salmon,* ***steelhead****, trout, or char.* ~~You must possess a subsistence fishing permit to take steelhead in Hamilton Bay and Kadake Bay Rivers.~~ *You must possess a subsistence fishing permit to take eulachon from any freshwater stream flowing into fishing sections 1-C or 1-D.* ***Unless otherwise specified in this section, in Southeast Alaska, you may take steelhead trout under the terms of a subsistence fishing permit; there is no closed season or size limit; the daily harvest limit and possession limit is one with an annual limit of two. You may only use a dip net, gaff, spear or rod and reel with artificial lure or fly. You may not use bait. A steelhead is defined as a rainbow trout (Oncorhyncus mykiss) with an overall length greater than 22-inches.***
Region 1 - Southeast Regional Council Recommendation	**Support with modification** to provide for a season with a January 1 opening date, and add a stipulation regarding permit conditions and systems to receive special protection.
Interagency Staff Committee Recommendation	**Support with modification** consistent with the recommendation of the Southeast Council, to provide for a season, and add a stipulation regarding permit conditions and systems to receive special protection.
ADF&G Comments	The Federal Subsistence Board meeting book is being published prior to development of final recommendations and comments by the Alaska Department of Fish and Game. This information will be available on the Department's website by January 4, 2005. See the ADF&G homepage, under the headings of "highlights" and "regulations", at http://www.adfg.state.ak.us. For those without computer access, please call 1-907- 267-2360 for further information.
Written Public Comments	**None.**

REGIONAL ADVISORY COUNCIL RECOMMENDATIONS

SOUTHEAST REGIONAL COUNCIL

Support with modification to provide for a season of January 1 to May 31. Council notes that allowable gear has been covered in other proposals.

The modified proposed regulation should read:

> *§___.27(i)(13)(iii) You must possess a subsistence fishing permit to take salmon, steelhead, trout, or char. ~~You must possess a subsistence fishing permit to take steelhead in Hamilton Bay and Kadake Bay Rivers~~. You must possess a subsistence fishing permit to take eulachon from any freshwater stream flowing into fishing sections 1-C or 1-D.* ***Unless otherwise specified in this section, in Southeast Alaska, you may take steelhead trout under the terms of a subsistence fishing permit; the open season is January 1 through May 31; the daily household harvest and possession limit is one with an annual household limit of two.***
>
> ***You may only use a dip net, gaff, handline, spear or rod and reel with artificial lure or fly. You may not use bait. A steelhead is defined as a rainbow trout (Oncorhyncus mykiss) with an overall length greater than 22-inches. The permit conditions and systems to receive special protection will be determined by the local Federal fisheries manager in consultation with ADF&G.***

In many of the previous regulatory cycles, the Council reviewed proposals requesting establishment of Federal subsistence harvest regulations allowing traditional harvest of steelhead for Prince of Wales Island. Regulations adopted by the Federal Subsistence Board at its December 2003 fisheries meeting established such a fishery. The Council was briefed by Federal staff and from the ADF&G, Division of Subsistence, concerning island subsistence steelhead harvests and on the methods of harvest that are used. Island steelhead harvests were well below the harvest level caps set by the Federal Subsistence Board. The ADF&G report documented use of handlines for snagging in addition to rod and reel as harvest methods traditionally used for subsistence harvests of steelhead.

The present proposal would establish area wide Federal subsistence regulations for the taking of steelhead and provides a definition of *steelhead*. The Council reviewed data presented. Available data from ADF&G Division of Subsistence household surveys documents steelhead harvest in many Southeast Alaska communities. These harvests are part of normal subsistence harvesting for many area residents. The Council asked about catch and release mortality of steelhead in the sport fishery and concluded that a significant number of fish die as a result of this practice. In recent years, catch and release take has been approximately 20,000 fish; staff suggested a 5% mortality for catch and release fish. The Council noted a potential threat to steelhead populations from unreported take of steelhead in commercial fisheries.

The Council modified the original proposal to have a January 1 opening date for subsistence steelhead fisheries region-wide. This earlier opening date aligns more closely with subsistence practices in the region. Not many subsistence users fish in the January and February, but those

who do need to have their use recognized in regulation. The Council does not believe that the expected harvest effort during these months will adversely affect fall/winter runs of steelhead that may be present in some streams.

The Council reviewed data presented and recalled discussions of subsistence steelhead use from proposals considered in other regulatory cycles. The Council believes that the regulatory change as modified presents no conservation concern. The new regulation will recognize existing subsistence practice. Mortality in the catch and release fishery and unreported commercial catch of steelhead are potential conservation concerns that the Council would like management agencies to address. This proposal is strongly supported by the data presented that document the widespread subsistence use of this species and moderate harvest levels. The existing regulation, allowing fishers to only keep 36-inch fish, does not allow subsistence fishers to meet their needs legally and, because of catch and release mortality, is wasteful of the resource. This proposal will benefit subsistence users by recognizing their traditional fishing. We believe there will be no effect on other users. The Council noted that subsistence fishing is a priority use. Other harvesting or taking of steelhead would need to be curtailed before subsistence opportunities are reduced or limited.

COMMENTS

ADF&G

The Federal Subsistence Board meeting book is being published prior to development of final recommendations and comments by the Alaska Department of Fish and Game. This information will be available on the Department's website by January 4, 2005. See the ADF&G homepage, under the headings of "highlights" and "regulations", at http://www.adfg.state.ak.us. For those without computer access, please call 1-907- 267-2360 for further information.

PUBLIC

None.

INTERAGENCY STAFF COMMITTEE RECOMMENDATION

Support with modification, consistent with the recommendation of the Southeast Regional Advisory Council. The proposed modifications would provide for a season, and add a stipulation regarding permit conditions and systems to receive special protection.

The modified proposed regulation should read:

> *§___.27 (i) (13) (iii) You must possess a subsistence fishing permit to take salmon,* ***steelhead****, trout, or char.* ~~*You must possess a subsistence fishing permit to take steelhead in Hamilton Bay and Kadake Bay Rivers.*~~ *You must possess a subsistence fishing permit to take eulachon from any freshwater stream flowing into fishing sections 1-C or 1-D.* ***Unless otherwise specified in this section, in Southeast Alaska, you may take steelhead trout under the terms of a subsistence fishing permit; the open season is January 1 through May 31; the daily household harvest and possession limit is one with an annual household limit of two.***
>
> ***You may only use a dip net, gaff, handline, spear or rod and reel with artificial lure or fly. You may not use bait. A steelhead is defined as a rainbow trout (Oncorhyncus mykiss) with an overall length greater than 22-inches. The permit conditions and systems to receive special protection will be determined by the local Federal fisheries manager in consultation with ADF&G.***

Justification

Documented household harvest surveys indicate that steelhead are being harvested in many areas of Southeastern Alaska despite the very restrictive State sport fishing regulations. Allowing subsistence steelhead harvest throughout Southeast Alaska will provide legal subsistence fishing opportunities to all Federally qualified users in the region.

The proposed regulatory language is generally consistent with Federal regulations for steelhead on Prince of Wales Island. However, the harvest limits are less liberal than those on Prince of Wales Island, which should reduce potential conservation concerns. A total of seven fish annually (per household) may be retained by subsistence users on Prince of Wales Island, while only two could be harvested elsewhere in Southeast Alaska.

While there is concern about very small populations of steelhead in some stream systems, the low annual harvest limit, and the likelihood that subsistence users would focus their efforts on streams with higher numbers of fish (so as to maximize their efficiency), would reduce potential conservation issues. If this proposal is adopted, harvesting steelhead would require a Federal subsistence fishing permit, which would provide data on harvest locations. Such information would enable the manager to identify which streams may need to be monitored to evaluate the effects of this fishery. If conservation concerns arise, the manager has the authority to limit harvest and provide special protection to those systems.

STAFF ANALYSIS
FP05-28

ISSUES

Proposal FP05-28, submitted by John Littlefield of Sitka, would establish a subsistence season and harvest limit for steelhead in the Southeastern Alaska Management Area, except for Prince of Wales Island (POW), where there is an existing Federal subsistence fishery for steelhead. The proposal specifies a harvest limit of one fish per day with an annual limit of two steelhead and a year-round season.

DISCUSSION

This proposal was submitted out of concern that rural residents of Southeast Alaska are being denied the opportunity to harvest steelhead for subsistence purposes, (except on POW) and can no longer use steelhead as a source of fresh fish during months when other salmon are unavailable. The proponent is concerned that the existing Federal subsistence regulation is too restrictive to Federally qualified subsistence users. The existing Federal regulations are the same as the current State sport fishing regulations, which provide a minimal harvest potential. As a result, a meaningful subsistence priority is not being allowed. Other concerns with the existing Federal regulation are: many of the systems in Southeastern Alaska do not produce 36-inch steelhead, and they are rare in the few systems capable of producing a fish this size; current regulations may be harming many fish through the process of capturing, measuring, and releasing the fish; and subsistence fishers are not looking for a "plaything", just a fish for the table.

Steelhead were harvested throughout the region by the indigenous peoples. Goldschmidt and Haas (1998) documented use of steelhead by Tlingit from Skagway to Saxman. The Tlingit name for steelhead is Aashat (written ah shut in Emmons [1991]). Trout fishing occurred at least in the winter, spring, and fall and was accomplished using a variety of gear, including weirs, spears, baskets/traps, lines with small wooden hooks, and nets. (Emmons 1991; Goldschmidt & Haas 1998).

Existing Federal Regulation

§___.27(i)(13)(iii) You must possess a subsistence fishing permit to take salmon, trout, or char. You must possess a subsistence fishing permit to take steelhead in Hamilton Bay and Kadake Bay Rivers. You must possess a subsistence fishing permit to take eulachon from any freshwater stream flowing into fishing sections 1-C or 1-D.

Proposed Federal Regulation

§___.27(i)(13)(iii) You must possess a subsistence fishing permit to take salmon, steelhead, trout, or char. ~~You must possess a subsistence fishing permit to take steelhead in Hamilton Bay and Kadake Bay Rivers.~~ You must possess a subsistence fishing permit to take eulachon from any freshwater stream flowing into fishing sections 1-C or 1-D. ***Unless otherwise specified in this section, in Southeastern Alaska, you may take steelhead***

trout under the terms of a subsistence fishing permit; there is no closed season or size limit; the daily harvest limit and possession limit is one, with an annual limit of two. You may only use a dip net, gaff, spear or rod and reel with artificial lure or fly. You may not use bait. A steelhead is defined as a rainbow trout (Oncorhyncus mykiss) with an overall length greater than 22-inches.

Extent of Federal Public Waters

Federal public waters involved are waters of the Tongass National Forest excluding marine waters.

Note: For purposes of this discussion, the phrase "Federal public waters" is defined as those waters described under 50 CFR 100.3(b).

Customary and Traditional Use Determinations

Customary and Traditional Use Determinations for the Southeastern Alaska Area apply and are listed in Appendix A at the end of the Fisheries Regulatory Review and Recommendation section.

Regulatory History

State Regulatory History

Under State regulations all directed steelhead harvest in Southeast Alaska occurs under the State of Alaska sport fish regulations. Steelhead are taken incidentally in State managed subsistence and commercial fisheries.

In Southeastern Alaska, State regulations prohibit the issuance of subsistence permits for steelhead but allow steelhead taken incidentally by gear operated under the terms of a subsistence permit for salmon to be legally retained for subsistence purposes. Permit holders are required to report on permit calendars any steelhead incidentally taken.

During the 1993/1994 regulatory cycle for Southeastern Alaska, the Alaska Board of Fisheries addressed sport and commercial fishing regulations. Region wide sport fishing regulations were changed to allow a harvest of one fish per day and two fish per year, 36-inches or greater in length. However, the bag limit is two fish if at least one has a clipped adipose fin, as evidenced by a healed scar, and there is no size limit for steelhead with a clipped adipose fin. (steelhead with adipose fin clips are produced in hatcheries). The Alaska Board of Fisheries also prohibited the use of bait from November 16 through September 14. Region wide sport fishing regulations remain unchanged since 1994. Lastly, the Alaska Board of Fisheries also prohibited the sale of steelhead caught in commercial net fisheries. In commercial purse seine and gillnet fisheries of Southeastern Alaska, Commercial Fisheries Entry Commission (CFEC) permit holders may now take but not sell steelhead. Steelhead caught in the commercial troll fishery may be sold.

During the 2003 Alaska Board of Fisheries cycle, the region wide sport regulation for steelhead was revised. The revision was a regulatory "housekeeping" action, submitted by the Alaska Department of Fish and Game (ADF&G), to specify that the two fish daily bag limit would only

apply to the Klawock River and Ketchikan Creek; the only two locations where adipose clipped steelhead are found.

Federal Regulatory History

Proposal FP01-30, was submitted by the Organized Village of Kake and City of Kake in the 2001 fisheries regulatory cycle. This proposal would have restricted the harvest of steelhead trout in Hamilton Bay River and Kadake Bay River to Federally qualified subsistence users. The Federal Subsistence Board (Board) in December 2000 acted on FP01-30 by rejecting the closure to non-Federally qualified users, and instead created a Federal subsistence fishery for steelhead in Hamilton and Kadake Bay Rivers. The regulatory language was:

> *You may take steelhead trout from Kadake Bay River and Hamilton Bay River only under the terms of a Federal subsistence fishing permit. The annual harvest limit is two fish, 36-inches or larger. You may use only a dip net or rod and reel with artificial lure or fly. You may not use bait.*

This regulation was essentially the same harvest limit and minimum size as in the State sport fishing regulations.

Several proposals over the years have requested Federal subsistence fisheries for steelhead on POW. Please refer to FP05-29 for a full description of regulatory history for that fishery.

Biological Background

Steelhead are the anadromous form of rainbow trout. Steelhead are known to return to 331 freshwater systems in Southeastern Alaska. (ADF&G 2002a) The life cycle of steelhead is complicated and each year adult returns consist of both first time and repeat spawners (referred to as kelts), each consisting of multiple age classes. Individual streams can contain populations with mature first time spawning fish 3, 4, and 5 years old (Gayeski 2001). Steelhead commonly spawn more than once during their lifetimes and out-migrating fish over 28-inches are almost always kelts. (ADF&G 2000) In addition, kelts, as noted during steelhead research conducted on the Karta River, represented up to one third of the returning fish and as many as 10 different age classes. Of the ten age classes, two (3.2 and 3.3) comprised between 58 and 68.5 percent of the kelts. (Harding and Jones 1993, Jones 1984) Lohr & Bryant (1999) based on a review of past steelhead studies, indicate that the number of spawning runs made by kelts, based on scale analysis, ranged from one to four in spring run stocks, with the number of kelts decreasing in each successive run, with numbers dropping dramatically following the second run.

Peak numbers of steelhead occur in streams in late April and May. Fall and spring run fish (freshwater or ocean maturing) generally spawn at the same time but residence time in streams is longer for fall run (freshwater maturing) fish. Spring run fish (ocean maturing) are most abundant in Southeastern Alaska, but it is not uncommon for the same streams to contain a smaller fall run (Lohr & Bryant 1999).

Actual population numbers for Southeastern Alaska steelhead, by individual system, are not known. Tentative estimates of escapement, primarily based on professional judgment, were

made for the 331 Southeastern Alaska steelhead streams. These estimates were best guesses by ADF&G Sport Fish Division area management biologists and are not scientifically defensible.

The small size of most steelhead stocks makes them susceptible to extirpation through habitat degradation or over fishing (Lohr & Bryant 1999). No predictive models have been developed to identify years when harvestable surplus of steelhead may be available. Begich (1998) estimated sustainable annual exploitation rates ranging from 9.8 percent to 28.9 percent for Karluk River (located on Kodiak Island) steelhead. His model also showed that harvest rates greater than 37.5 percent could not be sustained.

The amount of available information for steelhead in Southeastern Alaska is limited. Long-term estimates of adult steelhead abundance in Southeastern Alaska are unavailable, but other information may be useful to provide an index of abundance. ADF&G, in the past, has only run a combination weir and creel census project at the Karta River in 1983, 1989, and 1992. ADF&G has operated a weir at Sitkoh Creek.

Index counts normally begin mid to late April. These surveys are conducted weekly during the peak of the spawning season and peak counts are assumed to be indices of steelhead abundance. Each system is normally surveyed until counts drop below the highest count observed. If conditions are unsafe for survey, then the system is surveyed as soon as it is deemed safe enough to do so. Very little data have been gathered to relate the peak counts obtained by snorkel survey teams to the total number of steelhead in the spawning run. ADF&G surveys yield similar results but occurred over a short time period. It is not uncommon for index escapement counts to unpredictably double or to drop to half of the prior year level in consecutive years. Weather and water conditions, along with observer bias, can affect these surveys. Annual index counts, many of which record fewer than 50 fish, suggest that steelhead returns to a number of systems on POW are small. How well these counts indicate trends in abundance for systems surveyed remains in question because independent estimates or actual counts of total escapement are not available for comparison.

With a minimum size restriction of 36-inches, very few steelhead are available for harvest. **Table 1** displays the percentage breakout by length of steelhead sampled from the Karta River. The percentage of steelhead (n = 1,031) 36-inches and larger is only 0.6 percent. Since these lengths come only from the Karta, the actual length composition may not be fully representative for other Southeastern Alaska systems.

Although information on abundance is limited, stock status of Southeastern Alaska steelhead appears stable over the past decade. Prior to 1994, steelhead abundance throughout Southeastern Alaska was in decline.

Harvest History

Subsistence Harvest

No incidentally caught steelhead have been reported on ADF&G subsistence permits from 1985 to 2001 (Zadina 2002). See FP05-29 for a discussion of Federal subsistence harvests of steelhead on POW. No reported steelhead harvest has been reported from Federal permits for areas other than POW. **Table 2** (ADF&G 2004) displays the results of Household Use Surveys for steelhead

Table 1 – This table is a summary of the length composition for 1,031 measured steelhead from the Karta River on Prince of Wales Island. Lengths are rounded to the nearest inch. (Harding & Jones 1993; Hoffman et al 1990).

Length (inches)	Number	Percent	Cumulative Percent
19	4	0.4	0.4
20	3	0.3	0.7
21	0	0.0	0.7
22	0	0.0	0.7
23	1	0.4	0.8
24	5	0.5	1.3
25	19	1.8	3.1
26	85	8.2	11.4
27	106	10.3	21.6
28	83	8.1	29.7
29	104	10.1	39.8
30	105	10.2	50.0
31	175	17.0	66.9
32	177	17.2	84.1
33	83	8.1	92.2
34	49	4.8	96.9
35	26	2.5	99.4
36	6	0.6	100.0
Total	**1031**	**100.0**	

conducted by ADF&G – Subsistence Division for various communities in Southeastern Alaska excluding those located on POW. Reported use of steelhead ranged from 1 in Klukwan to 650 in Sitka which may include significant commercial catch retention.

Sport Harvest

From 1978 through 1982, the daily bag limit and possession limit was one steelhead per day. Beginning with the 1983 season, the possession limit was increased to two steelhead (Jones 1984). Steelhead sport harvests generally increased from the late 1970s through 1991, and then began to decline. Harvest for Southeastern Alaska peaked in 1989 at 5,409 fish. **Table 3** shows

Table 2 - Community Harvests in Southeastern Alaska Steelhead

Community Name	Harvest Year	Resource	Estimated Total Number	Estimated Total Pounds	Mean Pounds Per Household	Pounds Per Capita	Number Percapita	Households in the Community
Angoon	1996	Steelhead	4	37	0.23	0.06	0.01	161
Haines	1996	Steelhead	59	504	0.64	0.23	0.03	787
Hoonah	1996	Steelhead	29	247	0.88	0.28	0.03	280
Kake	1996	Steelhead	24	203	0.82	0.27	0.03	249
Klukwan	1996	Steelhead	1	10	0.27	0.09	0.01	36
Sitka	1996	Steelhead	650	5528	1.81	0.65	0.08	3053
Whitestone	1996	Steelhead	7	58	1.42	0.41	0.05	41
Yakutat	2000	Steelhead	143	1216	5.2	1.92	0.23	234

ADF&G. 2004. Community Profile Database (CPDB). Microcomputer database. Internet: www.state.ak.us/adfg/subsist/geninfo/publctns/cpdb.htm. Alaska Department of Fish and Game, Division of Subsistence, Anchorage.

the yearly estimated harvests of steelhead for Southeastern Alaska as estimated by the statewide harvest survey (SWHS) (Didier et al. 1990; Howe et al. 2001). As fishery managers and participants reported lower escapements, regulations prohibiting steelhead harvests in the Situk River started in 1991. In 1992, steelhead harvest was prohibited in 24 popular systems in Southeastern Alaska by Emergency Order, and in 1993, the Situk and 47 other systems were closed to steelhead harvest. In 1994, the Alaska Board of Fisheries enacted conservative regulations for steelhead in Southeastern Alaska, and since 1994, anglers have been limited region wide to an annual harvest limit of 2 steelhead with a minimum size limit of 36-inches (Johnson and Jones 2000). Under the new regulations, the estimated sport harvest in Southeastern Alaska has been less than the estimated 1,404 steelhead taken in 1992.

The prohibition against bait likely reduced mortality from catch-and-release fishing. Published mortality studies suggest a 2 to 3 percent mortality rate for catch and release fishing with artificial lures. This rate may vary, depending on the anatomical location where the fish was hooked, how long the fish was played, how the fish was handled by the angler, how long the fish was kept out of the water, as well as how long the fish has been in the system (i.e., kelts tended to have lower mortality rates than fish just entering from estuarine areas). To be conservative, managers commonly assume a hooking mortality of 5% for fish caught with artificial lures (ADF&G 2002a, Hooten 2001).

Commercial Harvest

Commercial fishing incidental catch of steelhead occurs, and reported catch has ranged from a low of 533 in 1975 to a high of 11,540 in 1986 for Southeastern Alaska. The majority of the catch, 65%, has occurred in the gillnet fisheries and the least, 1%, in the

Table 3 – Steelhead harvest and catch* by year Southeast Alaska sport fishery, and southeast Alaska commercial fishery harvest. (PSCNBTC 1991; Brookover 2004, Didier et al 1990; Howe et al 2001; Walker et al *In prep*)

Year	SE AK Sport Harvest[i]	SE AK Sport Catch	Commercial Harvest[ii]
1969			2,414
1970			2,401
1971			1,802
1972			1,653
1973			1,836
1974			1,940
1975			533
1976			1,027
1977	1,554		963
1978	1,362		1,610
1979	1,307		1,031
1980	2,581		1,412
1981	1,519		934
1982	2,194		1,989
1983	3,350		4,074
1984	4,032		5,390
1985	2,856		7,112
1986	4,068		11,540
1987	3,845		3,621
1988	3,593		4,339
1989	3,581		3,209
1990	3,374	19,525	3,309
1991	3,716	11,110	
1992	1,404	10,770	
1993	570	6,894	
1994	368	6,531	
1995	185	2,760	
1996	105	4,118	
1997	142	5,978	
1998	108	3,885	
1999	199	9,782	
2000	180	8,888	
2001	180	5,904	
2002	72	3,720	

* In general, the catch estimates are more prone to error than the harvest estimates. Harvest limits tend to constrain reported harvest but don't have the same effect on catch; people tend to round up versus down, and literature indicates that people tend to exaggerate their catch, particularly for non-memorable fish caught in large numbers. All of these tend to inflate catch estimates to varying degrees.

[1] Data for sport catch and harvest for years 1977-1992 report the total for SE Alaska including Yakutat. For years 1993 -2002 the catch and harvest data excludes Yakutat.

[2] Since 1994, reported steelhead by-catch has been approximately 50 each year from the troll fishery. Numbers taken in net fisheries are unknown, as these fish may only be retained for personal use and are not required to be off-loaded and counted.

troll fisheries (Lynch 2002, PSCNBTC 1991). Table 3 shows commercial harvests of steelhead in Southeastern Alaska by year. These values are conservative because they were reported by fish buyers and do not include steelhead that were caught but not sold or sold and misidentified as other species (Lohr & Bryant 1999, PSCNBTC 1991). Since 1994, the commercial sale of purse seine caught steelhead has been prohibited, but the fish may be retained for personal use. Steelhead caught in the commercial troll fishery can legally be sold. Fewer than 50 recorded landings per year have occurred in the troll fisheries since 1997 (Lynch, 2002). There is uncertainty with these recent estimates, as net-caught steelhead retained for personal use are not documented.

Based on coded wire tag data, from all recovered tags (about 250 recovered from nearly 800 heads sent into the Juneau tag lab), it is suggested that steelhead by-catch is composed of mixed stocks, mainly British Columbia fish (ADF&G 2002b). Since 1980, British Columbia, Washington, Oregon, Idaho, California, and Alaska have clipped all hatchery reared steelhead, but have not coded wire tagged all fish (Lynch 2002). For non-clipped steelhead or those with a clipped adipose fin, but no tag, exact origin is not known. There have been no attempts to systematically tag wild fish in southeast Alaska systems, so Alaskan stocks may not be accurately represented by the coded wire tag data (Jones 1994). Origin can possibly be assumed by run timing. Since the majority of steelhead runs in Southeastern Alaska occur in the spring and the majority of Southeastern Alaska commercial fisheries occur in the summer, it is assumed that local steelhead may not be as susceptible to catch during their spawning migration (Lynch 2002).

Effects of the Proposal

The effect of this proposal would be to legalize harvest of steelhead from Southeastern Alaska. It would have no effect on the existing Federal subsistence steelhead fishery on POW. A year round season could potentially expose fall run stocks to over harvest. Fall run steelhead stocks are generally smaller and not as widely dispersed as spring run stocks. Federal in-season managers would have the ability to adjust regulations and close specific streams as needed for conservation and to ensure the Federal subsistence priority.

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FP05-20 Executive Summary	
General Description	Allow use of single, hand-held line for snagging salmon. (Originator: Michael See)
Proposed Regulation	**Southeastern Alaska Area – Salmon** ***§___.27(i)(13)(xviii) A single hand held line attached to no more than one treble hook for snagging salmon is a legal type of gear and method for taking subsistence salmon from freshwater streams on Federal land.***
Region 1 - Southeast Regional Council Recommendation	**Support with modification** to include steelhead, to incorporate the use of handlines as an allowable gear in the coho fisheries where it is now excluded, but not in the Stikine River sockeye salmon fishery; and to add a definition of snagging.
Interagency Staff Committee Recommendation	**Support with modification** to 1) Allow for snagging both salmon and steelhead, 2) incorporate the use of handlines as an allowable gear in the coho salmon fisheries where it is now excluded, but not in the Stikine River sockeye salmon fishery; and 3) add a definition of "snagging"
ADF&G Comments	The Federal Subsistence Board meeting book is being published prior to development of final recommendations and comments by the Alaska Department of Fish and Game. This information will be available on the Department's website by January 4, 2005. See the ADF&G homepage, under the headings of "highlights" and "regulations", at http://www.adfg.state.ak.us. For those without computer access, please call 1-907- 267-2360 for further information.
Written Public Comments	**None.**

REGIONAL ADVISORY COUNCIL RECOMMENDATIONS

SOUTHEAST REGIONAL COUNCIL

Support with modification to include steelhead. The Council recommends permitting the use of handlines as an allowable gear in the coho fisheries where it is now excluded, but not in the Stikine River sockeye salmon fishery. Handline snagging will be an allowable method of harvest for all salmon species.

The intent of the Council recommendation is also to permit the use of handlines as allowable gear and snagging as a harvest method for the harvest of steelhead as well. The Council has asked staff to insure that these provisions for steelhead will be covered in the appropriate places in Federal regulations.

> *27 Unless otherwise specified, you may use a* ***handline*** *for snagging salmon and steelhead.*
>
> *27(i)(13)(v) …gaffs,* ***handlines****, and rod and reel….*
>
> *27 (I)(13)(vi) …dip net,* ***handlines,*** *and rod and reel…*
>
> ***25 (a) Snagging means hooking or attempting to hook fish elsewhere than in the mouth.***

The Council agreed with the staff preliminary conclusion to recognize the use of handlines as an allowable method for harvesting all species of salmon in Southeast Alaska. Current regulations do not allow the use of a handline for coho salmon. The Council heard considerable public testimony from Hoonah, Hydaburg, Kake, Kasaan, Ketchikan, Klawock, and Sitka supporting use of a handline to snag fish as a selective, traditional method of taking fish. Snagging allows experienced harvesters to pick the fish that they wish to take. For example, a fisher wanting only egg laden chum salmon will bypass other salmon that may be present. No testimony was presented opposing recognizing a handline as allowable gear.

> *when we were little kids we used to pack water to old guy in town. He was the only guy in town who seemed to know how to solder, so he'd solder us up hooks, those big old halibut J hooks, he'd make treble hooks for us, and it's a very efficient way of catching fish. …..I'm opposed to rod and reel snagging because basically you're blind snagging, you cast out into the water, you just yank for all you're worth ……., you just rip fish and they just get away. With this here it's very selective. You look at the fish you're going to take. You know, my wife wants fish for eggs, I go get her fish for eggs. She wants big ones for drying, I get her big ones for dried. I think it's a very efficient way of getting fish.*
>
> *I'd just like to speak in support of a single treble hook attached to a line. It is a means and methods of harvest in Hydaburg. It is documented by Mike Turek for steelhead and also for coho and other species of salmon, all species in fact, an effective means of harvest. And we would like to see it recognized, but I guess it already has been according to Cal through the use of a handline. I'm glad to see that they're clarifying it and that*

it's finally becoming -- or hopefully to become a recognized subsistence harvest method because my whole life that's how we've done it in Hydaburg is to snag with a handline. So that would be become a reality.

I grew up in Hydaburg. We used to use the snagger as a way of getting a lot of chum salmon out of the river. We used to get it by the five gallon buckets, so it's an easy method in terms of getting dog salmon as well as other prized fish out of the river that we needed for the smokehouse.

I'd like to speak in favor of the amended process of snagging because in Kake, if you come to Kake for the Dog Salmon Festival, you see kids on the bridge, on the lower end, the bears up on the upper end of the Gunnuk Creek, that's where I've learned to snag, whether for trout, steelhead or salmon, or any kind of fish that was there. .... very selective

The Council heard that snagging with a handline was a selective and effective method of taking steelhead, particularly in small streams where brush and overhanging branches do not allow easy use of rod and reel gear.

The Council views this proposal as a way of authorizing in regulation what has been a traditional way of selectively harvesting salmon and steelhead for subsistence in Southeast Alaska. In addition to the staff analysis, the Council heard a report from Michael Turek, Alaska Department of Fish and Game, Division of Subsistence, based on his recent Fisheries Information Service study of steelhead harvesting on Prince of Wales Island. Mr. Turek provided detailed documentation of traditional steelhead harvesting methods. These were found to include the use of a handline for snagging, particularly in small drainages where other methods of harvest may be impractical.The Council does not foresee conservation concerns arising from passing this proposal. Although very unlikely, should an actual conservation concern arise for some species in a particular stream, it can be dealt with through in-season management authority in consultation with the Council. The Council recommendation is supported by substantial information from the staff report, knowledge of Council members, extensive public testimony, and a recent FIS study. This proposal will help subsistence users by recognizing traditional subsistence harvesting practices for steelhead and salmon. Finally, this proposal will have no effect on non-subsistence users.

The Council believes that inclusion of steelhead is within the notice of this meeting. Related proposal FP05-19 concerns methods and means that may be used for all fishing in Southeast Alaska. The Council modified FP05-19 proposal to apply only to salmon and steelhead.

Council members opposed to this proposal were concerned about the vulnerability of fish, particularly coho and steelhead, to snagging in small streams.

INTERAGENCY STAFF COMMITTEE RECOMMENDATION

Support with modification, consistent with the recommendation of the Southeast Regional Advisory Council. The proposed modifications would 1) Allow for snagging both salmon and steelhead, 2) incorporate the use of handlines as an allowable gear in the coho salmon fisheries where it is now excluded, but not in the Stikine River sockeye salmon fishery; and 3) add a definition of "snagging".

The modified proposed regulation should read:

§___.27(i)(13)(xviii) Unless otherwise specified, you may use a handline for snagging salmon and steelhead.

§___.27(i)(13)(v) In the Southeastern Alaska Area, except for sections 3A, 3B, and 3C and the Stikine and Taku Rivers, you may take coho salmon under the terms of a subsistence fishing permit. There is no closed season. The daily harvest limit is 20 coho salmon per household, and the annual limit is 40 coho salmon per household. Only dipnets, spears, gaffs, ***handlines****, and rod and reel may be used. Bait may only be used from September 15 through November 15. You may not retain incidentally caught trout and sockeye salmon unless taken by gaff or spear.*

§___.27(i)(13) (vi) You may take coho salmon in Subdistricts 3(A), (B), and (C) only under the terms of a Federal subsistence fishing permit. There is no closed season. The daily harvest limit is 20 fish per household. Only spears, dip net, ***handlines****, and rod and reel may be used. Bait may be used only from September 15 through November 15.*

§___.25(a) Snagging means hooking or attempting to hook fish elsewhere than in the mouth.

Justification

Handlines have been used in the Southeastern Alaska Area for at least 75 years. The use of handlines is currently allowed for the harvest of all species of salmon except coho and in the Stikine River.

The use of a handline is an efficient method for harvesting salmon in streams at locations that might not be suitable for gaffs, spears or other approved means. Handlines are similar in efficiency as gear presently allowed for coho salmon, such as spears and gaffs, and would not create a conservation concern due to increased harvest of coho salmon. The harvest of coho under Federal subsistence regulations has been very low. Coho salmon stocks in the Southeastern Alaska Area are considered healthy.

For the Stikine River sockeye salmon subsistence fishery, Federal regulations do not allow the use of a handline. These regulations were recently established through a coordinated process with the Pacific Salmon Commission. It is not necessary to expand the allowable gear in the Stikine River to include handline, and to do so may require additional coordination in the U.S./Canada process.

The original proposal was to allow the snagging of salmon. The Southeast Regional Advisory Council added steelhead to the species allowed for snagging since it has been a traditional method of taking fish. The Interagency Staff Committee agrees with the Council that the inclusion of steelhead in this regulation is covered by the public notice for this meeting since the proposal in combination with FP05-19 addresses all methods and means for subsistence fishing in Southeast Alaska. The Interagency Staff Committee also agrees with the Southeast Regional Advisory Council that snagging is a traditional harvest method for steelhead.

COMMENTS

ADF&G

The Federal Subsistence Board meeting book is being published prior to development of final recommendations and comments by the Alaska Department of Fish and Game. This information will be available on the Department's website by January 4, 2005. See the ADF&G homepage, under the headings of "highlights" and "regulations", at http://www.adfg.state.ak.us. For those without computer access, please call 1-907- 267-2360 for further information.

PUBLIC

None.

STAFF ANALYSIS
FP05-20

ISSUES

Proposal FP05-20, submitted by Mr. Michael See of Hoonah, would allow the use of a handline to take salmon in the Southeastern Alaska Area.

The proponent states that subsistence fishers have traditionally used a single, hand held line attached to one treble hook to harvest salmon from streams. Recognizing the use of a handline would allow a traditional, convenient, inexpensive, and target-specific method for harvesting salmon. The proponent was contacted to clarify his proposal. He purposely did not include the use of a rod and reel in his proposal. He believes snagging with a rod and reel is not as selective as snagging with a handline. He stated that, traditionally, snagging fish with a treble hook and handline has been done to identify and harvest individual fish, such as targeting female chum salmon when eggs are desired (See 2004, pers. comm.).

DISCUSSION

Existing Federal Regulation

The existing statewide, Federal subsistence management regulations allow handlines as an allowable gear type. The use of a handline to snag fish is not prohibited, however there is no definition of snagging in the Federal Regulations.

§___.27(c)(1) Unless otherwise specified in this section or under terms of a required subsistence fishing permit (as may be modified by this section), you may use the following legal types of gear for subsistence fishing:

(i) A set gillnet;
(ii) A drift gillnet;
(iii) A purse seine;
(iv) A hand purse seine;
(v) A beach seine;
(vi) Troll gear;
(vii) A fish wheel;
(viii) A trawl;
(ix) A pot;
(x) A longline;
(xi) A fyke net;
(xii) A lead;
(xiii) A herring pound;
(xiv) A dip net;
(xv) Jigging gear;
(xvi) A mechanical jigging machine;

(xvii) A handline;
(xviii) A cast net;
(xix) A rod and reel; and
(xx) A spear.

§___.25(a) Handline means a hand-held and operated line, with one or more hooks attached.

Although the use of a handline is generally permitted, there are three Federal regulations for salmon in the Southeastern Alaska Area, that specifically do not allow the use of handlines.

§___.27(i)(13)(v) In the Southeastern Alaska Area, except for sections 3A, 3B, and 3C and the Stikine and Taku Rivers, you may take coho salmon under the terms of a subsistence fishing permit. There is no closed season. The daily harvest limit is 20 coho salmon per household, and the annual limit is 40 coho salmon per household. Only dipnets, spears, gaffs, and rod and reel may be used. Bait may only be used from September 15 through November 15. You may not retain incidentally caught trout and sockeye salmon unless taken by gaff or spear.

§___.27(i)(13) (vi) You may take coho salmon in Subdistricts 3(A), (B), and (C) only under the terms of a Federal subsistence fishing permit. There is no closed season. The daily harvest limit is 20 fish per household. Only spears, dip net, and rod and reel may be used. Bait may be used only from September 15 through November 15.

§___.27(i)(13) (--) In the mainstem of the Stikine River:

(A) You may take sockeye salmon under the authority of a Federal subsistence fishing permit issued by the USDA Forest Service for the Stikine River. Each Stikine River permit will be issued to a household and will be valid for 15 days. Permits may be revalidated for additional 15-day periods.

(B) The total annual guideline harvest level for the Stikine River fishery is 600 sockeye salmon.

(C) You may take sockeye salmon from July 1 – July 31. The annual limit is 40 sockeye salmon per household. Only dipnets, spears, gaffs, rod and reel, beach seine, or gillnet not exceeding 15 fathoms in length with mesh size no larger than 5½-inches may be used.

(D) Salmon taken incidentally by gear operated under terms of this permit are legally taken and must be reported on the permit calendar.

Proposed Federal Regulation

The proponent proposed the following regulation:

> *§___.27(i)(13)(xviii)* ***A single hand held line attached to no more than one treble hook for snagging salmon is a legal type of gear and method for taking subsistence salmon from freshwater streams on Federal land.***

Extent of Federal Public Waters

This proposal, if adopted, would apply to all Federal public waters in the Southeastern Alaska Area, between a line projecting southwest from the westernmost tip of Cape Fairweather and Dixon Entrance. However, subsistence uses are not permitted in the following National Park Service lands: Glacier Bay National Park, Klondike Gold Rush National Historical Park and Sitka National Historical Park.

Note: For purposes of this discussion, the phrase "Federal public waters" is defined as those waters described under 50 CFR 100.3(b).

Customary and Traditional Use Determinations

Customary and Traditional Use Determinations for the Southeastern Alaska Area apply and are listed in Appendix A at the end of the Fisheries Regulatory Review and Recommendation section.

Regulatory History

The Federal regulation to allow the harvest of coho in Subdistricts 3-A, 3-B and 3-C on Prince of Wales Island (POW) was adopted for the 2001-2002 regulatory year. The Southeast Regional Advisory Council (Council) discussed the issue at their meeting in Hydaburg on October 12, 2000. The proposal asked for the use of spears and rod and reel. The Council, at the request of a Craig resident, added the use of a dip net (SERAC 2000). The Federal Subsistence Board (Board) adopted the regulation at their December 5-6, 2000 meeting.

The regulation that allows the harvest of coho in the remainder of the Southeastern Alaska Area was adopted for the 2002-2003 regulatory year (Board 2001).

The Stikine River regulation that allowed harvest of sockeye in the Stikine River was adopted by the Board in the spring of 2004 through a coordinated effort with the Pacific Salmon Commission (PSC).

Harvest History

The regulation to allow the harvest of coho under a Federal subsistence permit has been in effect since 2001 on POW. In 2001, no coho were reported harvested on POW. In 2002, on POW, 70 permit holders reported harvesting 396 coho, of which 327 were from the Klawock River. This equates to an annual average of six coho per successful permit holder. In 2003, on POW, 29 permit holders reported harvesting 206 coho, of which 142 were from the Klawock River. This

equates to an annual average of seven coho per successful permit holder (USDA Forest Service 2004).

For the remainder of the Southeastern Alaska Area, there has been no reported harvest of coho on a Federal subsistence permit since the advent of the regulation in the 2002-2003 regulatory season (USDA Forest Service 2004).

Customary and Traditional Use of Handlines

Mike Turek, of the Alaska Department of Fish and Game (ADF&G), during research on harvest methods for steelhead on POW (FSB funded project 01-105), found evidence of handlines used for taking salmon. The following are preliminary findings from April of 2004:

> "Gear – Steelhead were traditionally harvested with spears and gaffs, also caught in weirs and traps with salmon. More recently, since the 1950s, rod and reel tackle have been used, with and without bait. Fly rods and artificial flies are used by some harvesters. Spears/gaffs and hooks on hand lines are also used by some fishers on Prince of Wales Island. Snagging gear - locally made treble hooks on hand lines -3 halibut hooks bound together with cotton line and secured to a hand line- have been used for at least 75 years on the island. Locally known as the "Haida Snagger." Hand line and treble hook - often used in conjunction with a pole of various lengths. Pole is forked on the end where hand line runs through with treble hook hanging off the forked end of the pole. When hand line and treble hook are used in this fashion the gear is used similar to the traditional gaff/ spear (Turek 2004 pers. comm.)"
>
> "Klawock Field Notes April 8, 2004: Methods & Means: James also discussed the Klawock variant of the "Haida Snagger," a treble hook used to snag salmon (and steelhead?) and known locally as the "Klawock Spinner." The Klawock Spinner is used the same way as the Haida Snagger" (Turek 2004 pers. comm.).

According to Mr. See, the use of handlines has been a common practice of the residents of Hoonah for as long as he can remember. The technique is used when a few fish are desired and intended for immediate consumption. It is not a method that is employed for the harvest of large quantities of fish to be processed (See 2004 pers. comm.). Handlines are similar in efficiency to gear presently allowed for coho salmon, such as spears and gaffs, since only one fish can be taken at a time.

As written, this proposal would not change the prohibition of handlines for the harvest of coho and would be redundant for the other species of salmon, since handlines are already allowed (except in the Stikine River). The description of a handline in the proposed regulation is different than the Federal definition of a handline. In the Federal subsistence management regulations, a "handline means a hand-held and operated line, with one or more hooks attached." The proponent's description of a handline would allow only one treble hook and is more restrictive than the existing definition. The proponent's method of using only one treble hook would be allowed under the existing definition.

For the Stikine River sockeye salmon subsistence fishery, Federal regulations do not allow the

use of a handline. These regulations were recently established through a coordinated process with the PSC. It is not necessary to expand the allowable gear in the Stikine River to include handline, and to do so may require additional coordination in the U.S/Canada process.

Effects of the Proposal

Handlines may be more suited for use in some streams and could result in increased harvest of coho; however, the harvest of coho under Federal subsistence regulations has been very low (USDAFS 2004) and a moderate increase in coho harvest would not create a conservation concern. Coho salmon stocks in the Southeastern Alaska Area are considered healthy.

State and Federal regulations are not in alignment on the use of handlines in the Southeastern Alaska Area. Handlines are not listed as a legal gear type on State subsistence and personal use permits in the Southeastern Alaska Area; however, handlines are currently a legal gear type under Federal subsistence regulations, except where specifically excluded. Adoption of this proposal would not help to align Federal and State Regulations since it expands the use of handlines under Federal regulations to all Federal subsistence salmon fisheries in the Southeast Alaska Area, except the Stikine River.

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FP05-21 Executive Summary	
General Description	Allow accumulation of harvest limits. (Originator: Southeast Regional Advisory Council)
Proposed Regulation	**Southeastern Alaska Area – Various** *§___.27(a)(2) You may take fish for subsistence uses at any time by any method unless you are restricted by the subsistence fishing regulations found in this section. The harvest limit specified in this section for a subsistence season for a species and the State harvest limit set for a State season for the same species are not cumulative, except as modified by regulations in §___.27(i). This means that if you have taken the harvest limit for a particular species under a subsistence season specified in this section, you may not, after that, take any additional fish of that species under any other harvest limit specified for a State season.* [To be inserted in Southeastern Alaska Area section] ***§___.27(i)(13)(xviii) You may accumulate annual Federal subsistence harvest limits with annual harvest limits under State of Alaska sport fishing regulations.***
Region 1 - Southeast Regional Council Recommendation	**Modify the proposal** as follows: *To be inserted in Southeastern Alaska Area section]* ***§___.27(i)(13)(xviii) You may accumulate annual Federal subsistence harvest limits authorized for Southeast Alaska with harvest limits authorized under State of Alaska sport fishing and subsistence regulations.*** Modification removes the second reference to the word "annual" to make it clear that daily harvest limits would not be cumulative, inserts harvest limits "authorized for Southeast Alaska" and State of Alaska sport fishing and "subsistence regulations."
Interagency Staff Committee Recommendation	**Support with modification**, to remove the second reference to the word "annual," consistent with the recommendation of the Southeast Regional Advisory Council, but to not accumulate with State subsistence harvest limits, contrary to the recommendation of the Southeast Regional Advisory Council.
ADF&G Comments	The Federal Subsistence Board meeting book is being published prior to development of final recommendations and comments by the Alaska Department of Fish and Game. This information will be available on the Department's website by January 4, 2005. See the ADF&G homepage, under the headings of "highlights" and "regulations", at http://www.adfg.state.ak.us. For those without computer access, please call 1-907- 267-2360 for further information.
Written Public Comments	**None.**

REGIONAL ADVISORY COUNCIL RECOMMENDATIONS

SOUTHEAST REGIONAL COUNCIL

Support with modification to allow harvesters to accumulate Federal subsistence limits and State of Alaska subsistence and sport limits for fish. The modified proposed regulation should read:

To be inserted in Southeastern Alaska Area section:

> ***§___.27(i)(13)(xviii) You may accumulate annual Federal subsistence harvest limits authorized for Southeast Alaska with harvest limits authorized under State of Alaska sport fishing and subsistence regulations.***

This proposal arose from Council working group asked to examine regulations in Southeast Alaska and to identify possible changes. Current restrictions were confusing and said that subsistence fishers would not be allowed to catch any additional fish under State of Alaska sport fishing or subsistence or personal use regulations after they had filled their limit for a species under Federal subsistence regulations. The proposal as submitted would allow persons who had taken fish under Federal subsistence regulations to fish under Alaska sport fishing regulations. The Council modified the proposal to allow persons to accumulate annual Federal subsistence harvest limit with State of Alaska sport fish and subsistence limits.

The Council found existing regulations to be confusing, perplexing, unnecessarily restrictive, and probably unenforceable. No evidence was presented showing that there were any adverse effects to allowing Federal subsistence fishers to also fish under State of Alaska sport fishing and subsistence or personal use regulations. No enforcement actions were reported. And no examples of situations where accumulated bag limits had caused a conservation concern were cited. The Council notes that the fish stocks covered by this proposal are generally healthy and abundant. The overall subsistence take of salmon species under Federal subsistence regulations, particularly coho salmon, accounts for a very minor portion of overall fish harvest. This Federal subsistence harvest is dwarfed by the sport fishing harvest which is in turn dwarfed by the commercial harvest.

The Council believes that, unless there are conservation concerns that preclude harvesting, its obligation is to provide for subsistence needs. The Council believes that subsistence needs are inherently self limiting, that is, that subsistence harvesters stop taking fish when their needs are met. This being the case, unnecessarily restricting harvests serves no useful purposes.

The Council finds no conservation concern with this proposal, as modified. As with other Federal subsistence fisheries regulations, localized conservation concerns, if actual and verified, can be addressed by in-season management actions with consultation of the Council. Staff, Council members, and public testimony provided substantial information supporting our recommendation. The modified proposal will positively affect subsistence users by eliminating a confusing, unnecessary, and unenforceable regulation and allow subsistence users to meet their needs for fish. We see no adverse effects on other users.

INTERAGENCY STAFF COMMITTEE RECOMMENDATION

Support with modification, to remove the second reference to the word "annual," consistent with the recommendation of the Southeast Regional Advisory Council, but to not accumulate with State subsistence harvest limits, contrary to the recommendation of the Southeast Regional Advisory Council.

The modified proposed regulation should read:

> ***§___.27(i)(13)(xviii) You may accumulate annual Federal subsistence harvest limits authorized for Southeast Alaska with harvest limits authorized under State of Alaska sport fishing regulations.***

Justification

This proposal would allow accumulation of Federal subsistence and State sport fishery annual harvest limits, parallel to the opportunity under State regulations. The proposal would provide for a small increased harvest opportunity for Federally qualified users. The modification removes the second reference to the word "annual" to clarify that daily harvest limits would not be cumulative.

The Southeast Regional Advisory Council recommends that, in addition to allowing the combination of Federal subsistence and State sport harvest limits, accumulation of State subsistence harvest limits should also be considered by the Federal Subsistence Board. While we do not agree with the Council's modification, we do support the intent of the original proposal. If users are unable to obtain enough fish for their needs, and if there are no conservation concerns for the targeted stock, then there is latitude for the manager to approve additional harvest by issuing a subsistence fishing permit on a case-by-case basis. This flexibility enables managers to more effectively address these specific needs. If there is a conservation concern, coordinating subsistence harvest limitations among Federal and State managers would be considerably more difficult if the harvest limits were stacked.

Accumulating State and Federal subsistence fish harvest limits would set a precedent statewide and could result in substantial conservation and management coordination concerns.

COMMENTS

ADF&G

The Federal Subsistence Board meeting book is being published prior to development of final recommendations and comments by the Alaska Department of Fish and Game. This information will be available on the Department's website by January 4, 2005. See the ADF&G homepage, under the headings of "highlights" and "regulations", at http://www.adfg.state.ak.us. For those without computer access, please call 1-907- 267-2360 for further information.

PUBLIC

None.

STAFF ANALYSIS
FP05-21

ISSUES

Proposal FP05-21, submitted by the Southeast Regional Subsistence Advisory Council would allow Federally qualified subsistence users to harvest fish under sport fishing regulations after taking the annual subsistence harvest limit for that species under Federal subsistence fisheries regulations.

The current statewide Federal subsistence harvest regulations specify that once an annual limit is taken, no additional fish of that species may be harvested under any other regulations. This proposal would benefit subsistence users because of the increased fishing opportunity. This proposal would also align Federal and State regulations because there is not a similar State prohibition in subsistence, personal use or sport fishing regulations.

DISCUSSION

Existing Federal Regulation

§___.27 Subsistence taking of fish. (a) Applicability. (2) You may take fish for subsistence uses at any time by any method unless you are restricted by the subsistence fishing regulations found in this section. The harvest limit specified in this section for a subsistence season for a species and the State harvest limit set for a State season for the same species are not cumulative, except as modified by regulations in §___.27(i). This means that if you have taken the harvest limit for a particular species under a subsistence season specified in this section, you may not, after that, take any additional fish of that species under any other harvest limit specified for a State season.

Proposed Federal Regulation

§___.27 Subsistence taking of fish. (a) Applicability. (2) You may take fish for subsistence uses at any time by any method unless you are restricted by the subsistence fishing regulations found in this section. The harvest limit specified in this section for a subsistence season for a species and the State harvest limit set for a State season for the same species are not cumulative, except as modified by regulations in §___.27(i). This means that if you have taken the harvest limit for a particular species under a subsistence season specified in this section, you may not, after that, take any additional fish of that species under any other harvest limit specified for a State season.

[To be inserted in Southeastern Alaska Area section]

§___.27(i)(13)(xviii) You may accumulate annual Federal subsistence harvest limits with annual harvest limits under State of Alaska sport fishing regulations.

Extent of Federal Public Waters

This regulation, if adopted, would apply to all Federal public waters in the Southeastern Alaska Area, between a line projecting southwest from the westernmost tip of Cape Fairweather and Dixon Entrance. However, subsistence uses are not permitted in the following National Park Service waters: Glacier Bay National Park, Klondike Gold Rush National Historical Park and Sitka National Historical Park.

Note: For purposes of this discussion, the phrase "Federal public waters" is defined as those waters described under 50 CFR 100.3(b).

Customary and Traditional Use Determinations

Customary and Traditional Use Determinations for the Southeastern Alaska Area apply and are listed in Appendix A at the end of the Fisheries Regulatory Review and Recommendation section.

Regulatory History

Federal regulations specify annual harvest limits in the Prince of Wales steelhead fishery (two fish in the winter and five fish in the spring) the non Section 3(A), 3(B) and 3(C) Southeast Alaska coho fishery (40 coho); and the sockeye fisheries at Salmon Bay Lake (30 sockeye), Virginia Lake (40 sockeye) Stikine River (40 sockeye) and Thoms Creek (40 sockeye). There is not an annual harvest limit for steelhead, coho or sockeye salmon in other systems. There is not an annual harvest limit for other salmon, trout or char anywhere in Southeast Alaska. The Federal subsistence harvest limit for trout is the same as provided for in State sport fishing regulations with the exception of six systems where the possession limit is increased from two to six trout.

There is not a concern with allowing two additional steelhead taken in the sport fishery by subsistence fishers because the 36-inch minimum size range provides adequate protection to those stocks.

Current Events Involving the Species

At the December 2003 Federal Subsistence Board (Board) meeting, the Board adopted a similar proposal for the Prince William Sound Area (FP05-21). This proposal allowed the accumulation of Federal subsistence and State sport fishing harvest limits for salmon in the Copper River drainage upstream from Haley Creek.

> *§___.27(i)(11)(iv) In the Copper River drainage upstream from Haley Creek, you may take salmon only in the waters of the Upper Copper River District, or in the vicinity of the Native Village of Batzulnetas. You may accumulate harvest limits of salmon authorized for the Copper River drainage upstream from Haley Creek with harvest limits for salmon authorized under State of Alaska sport fishing regulations.*

Biological Background

With few exceptions, the salmon, trout and char stocks in Southeast Alaska are healthy and

support significant commercial, sport, personal use and subsistence fisheries.

Harvest History

Most subsistence harvest in the Southeastern Alaska Area occurs in marine waters with the use of a State subsistence or personal use fishing permit. There have been few sockeye reported on Federal permits and no coho, trout, char or steelhead reported from anywhere other than Prince of Wales Island.

Effects of the Proposal

Current Federal subsistence fishing regulations prevent any additional harvest opportunities by Federal subsistence fishers or members of their household by any means once an annual subsistence harvest is taken. This is not the case with State personal use, subsistence or sport fishing regulations. The current regulation is an unnecessary restriction to subsistence users and, because of the low additional harvest, would not result a conservation concern. Adopting this proposal will provide an increased opportunity for subsistence users.

FP05-22 Executive Summary	
General Description	Allow retention of incidentally-taken fish. (Originator: Southeast Regional Advisory Council)
Proposed Regulation	**Southeastern Alaska Area – Salmon, Trout, and Char** *§___.27(i)(13)(vii) If you take salmon, trout, or char incidentally with gear operated under terms of a subsistence permit for other salmon, they may be kept for subsistence purposes. You must report any salmon, trout, or char taken in this manner on your permit calendar.* ***Harvest and possession limits for incidental species must not exceed those allowed under either sport fish, personal use or subsistence fisheries regulations, whichever limit is more liberal, allowed for that species, time and area.***
Region 1 - Southeast Regional Council Recommendation	**Oppose.**
Interagency Staff Committee Recommendation	**Oppose.**
ADF&G Comments	The Federal Subsistence Board meeting book is being published prior to development of final recommendations and comments by the Alaska Department of Fish and Game. This information will be available on the Department's website by January 4, 2005. See the ADF&G homepage, under the headings of "highlights" and "regulations", at http://www.adfg.state.ak.us. For those without computer access, please call 1-907- 267-2360 for further information.
Written Public Comments	**None.**

REGIONAL ADVISORY COUNCIL RECOMMENDATIONS

SOUTHEAST REGIONAL COUNCIL

Oppose the proposal. This proposal came from the Council working group asked to examine regulations in Southeast Alaska and to identify possible changes. The staff analysis examined whether this regulatory change was necessary at this time. The staff found that this regulatory change would serve no useful purpose. The Council concurred with the staff recommendation. The Council also believes that the proposed limits on incidental take would prove to be confusing to the Federally qualified subsistence user and would likely be unenforceable.

INTERAGENCY STAFF COMMITTEE RECOMMENDATION

Oppose the proposal, consistent with the recommendation of the Southeast Regional Advisory Council.

Justification

This proposal may protect smaller stocks of fish by capping incidental harvest. However, there are no specific examples where this restriction is necessary. The proposed regulation would be a divergence between Federal and State subsistence fishing regulations. As proposed, this regulation would be a burden to Federally qualified subsistence users because of the need to become familiar with State sport fishing, personal use fishing, and subsistence fishing permit conditions and harvest limits.

COMMENTS

ADF&G

The Federal Subsistence Board meeting book is being published prior to development of final recommendations and comments by the Alaska Department of Fish and Game. This information will be available on the Department's website by January 4, 2005. See the ADF&G homepage, under the headings of "highlights" and "regulations", at http://www.adfg.state.ak.us. For those without computer access, please call 1-907- 267-2360 for further information.

PUBLIC

None.

STAFF ANALYSIS
FP05-22

ISSUES

Proposal FP05-22, submitted by the Southeast Regional Advisory Council, establishes a means of controlling incidental harvest in the Southeastern Alaska Area subsistence fisheries. The intent of this proposal is to minimize the opportunity for users to exceed established harvest limits for one species under the guise of fishing for another.

DISCUSSION

This proposal addresses the current lack of harvest limits for species caught incidentally in a directed fishery. The Regional Council working group that developed this proposal identified three possible solutions to this situation:

1. Assign seasons and or fishing areas to each fishery to minimize the opportunity for harvesting non-target fish.

2. Recognize there is a wide range of dates that each species may be harvested and provide for an incidental harvest limit for each species. This solution recognizes the mixed species composition of a subsistence fishery and provides guidelines to prevent this management concern from becoming a management problem.

3. The no action alternative. There have been no documented instances where Federal qualified subsistence users have used the current regulations to circumvent the intent of management restrictions and cause either management or conservation problems.

Defining the allowable size of incidental harvests would prevent over-harvest of one species under the guise of fishing for another. A cap on incidental harvests would also greatly diminish the need for interpretation of what constitutes a directed fishery by enforcement officers. The concern expressed by Federal and State managers is the added burden on Federally qualified subsistence users to become familiar with the harvest limits for the various fish species for all State sport, personal use and subsistence regulations and the variety of permits (there are at least four different State salmon fishing permits in Southeast Alaska) in addition to Federal subsistence fishing regulations. There is also a possible issue with wasting fish taken during the conduct of a subsistence fishery by forcing users to discard fish that may be mortally injured.

A related proposal (FP05-23) addresses the same concern, but is specific to Chinook salmon. If adopted, that proposal would establish a two-Chinook incidental harvest limit for Southeast Alaska unless otherwise indicated.

Existing Federal Regulation

§___.27(i)(13)(vii) If you take salmon, trout, or char incidentally with gear operated under terms of a subsistence permit for other salmon, they may be kept for subsistence pur-

poses. You must report any salmon, trout, or char taken in this manner on your permit calendar.

Proposed Federal Regulation

§___.27(i)(13)(vii) If you take salmon, trout, or char incidentally with gear operated under terms of a subsistence permit for other salmon, they may be kept for subsistence purposes. You must report any salmon, trout, or char taken in this manner on your permit calendar. ***Harvest and possession limits for incidental species must not exceed those allowed under either sport fish, personal use or subsistence fisheries regulations, whichever limit is more liberal, allowed for that species, time and area.***

Extent of Federal Public Waters

This regulation, if adopted, would apply to all Federal public waters in the Southeastern Alaska Area, between a line projecting southwest from the westernmost tip of Cape Fairweather and Dixon Entrance. However, subsistence uses are not permitted in the following National Park Service waters: Glacier Bay National Park, Klondike Gold Rush National Historical Park and Sitka National Historical Park.

Note: For purposes of this discussion, the phrase "Federal public waters" is defined as those waters described under 50 CFR 100.3(b).

Customary and Traditional Use Determinations

Customary and Traditional Use Determinations for the Southeastern Alaska Area apply and are listed in Appendix A at the end of the Fisheries Regulatory Review and Recommendation Section.

Regulatory History

State subsistence regulations (5 AAC 01) require a permit to harvest salmon from the Southeast Alaska Area but there are no limits to the incidental harvest of salmon, trout and char. Seasons, areas and gear are generally specified. State Personal Use regulations (5 AAC 77) require a permit to harvest salmon from the Southeast Alaska Area. There is no directed fishing for Chinook or coho salmon and the incidental harvest is limited to two Chinook and six coho salmon. Gear, area and season are usually closely defined. Sport fishing regulations generally allow two trout between 11-inches and 22-inches and ten Dolly Varden char of any size.

Federal regulations require a permit to harvest subsistence salmon, char and trout from the Southeastern Alaska Area. There are no seasonal restrictions to the harvest of salmon and no limit on incidental harvest of salmon, trout or char.

For the Southeastern Alaska Area, other than Sections 3A, 3B and 3C, the daily coho limit is 20 fish and gear restricted to dip nets, spears, gaffs and rod and reel. You may not retain any incidentally caught trout or sockeye salmon unless taken by spear or gaff. At the same time and area, there is a Chinook, sockeye, pink and chum fishery open without a restriction on gear. There is no restriction on the retention of an unlimited number of trout, steelhead, char, coho,

sockeye, pink or chum salmon harvested during those fisheries.

The Klawock Lake system has a sockeye season (July 7 through July 31) and a weekly fishing period 8:00 a.m. Monday to 5:00 p.m. Friday. The coho fishery at Klawock has gear restrictions but no restrictions to the length of season or the retention of sockeye. The pink and chum fisheries at Klawock do not have seasons, gear restrictions or a limit to incidental harvest of sockeye, coho or steelhead.

Current Events Involving the Species

The Prince of Wales coho and steelhead Federal subsistence fisheries were authorized for the 2002 season. The coho season was expanded to the remainder of Southeast Alaska in 2003. A subsistence sockeye fishery was authorized for the Stikine River in 2004. There is no restriction on the number of Chinook, pink, chum or coho salmon that could be taken incidentally.

> *§___.27(i)(13)(...) Stikine River (d) You may retain other salmon taken incidentally by gear operated under terms of this permit. The incidentally-taken salmon must be reported on your permit calendar.*

During the 2005 regulatory cycle, the Council has submitted a proposal (FP05-23) to cap the number of Chinook taken incidentally in other fisheries at two fish in possession.

Biological Background

With few exceptions, the salmon, trout and char stocks in Southeast Alaska are healthy and support significant commercial, sport, personal use and subsistence fisheries.

Harvest History

The majority of subsistence and personal use salmon harvest is conducted by State permit because the majority of fishing effort occurs in marine waters. Few households utilize the Federal subsistence permit system. During the 2002 and 2003 season, all steelhead and coho harvested in Federal subsistence fisheries in the Southeastern Alaska Area have been reported from Prince of Wales Island.

Effects of the Proposal

If adopted, this regulation would provide for a specific number of fish that could be taken incidentally in a subsistence fishery. The number of fish is not specified exactly but references other State subsistence, personal use, sport and Federal subsistence harvest limits.

This proposal will produce a divergence between allowable incidental harvests in Federal subsistence fisheries and State subsistence fisheries.

FP05-23 Executive Summary	
General Description	Close Chinook fishery & set an incidental catch limit. (Originator: Southeast Regional Advisory Council)
Proposed Regulation	**Southeastern Alaska Area – Chinook Salmon** *§___.27(i)(13)(i) Unless restricted in this section or under the terms of a subsistence fishing permit, you may take fish other than salmon, rainbow/steelhead trout, and char in the Southeastern Alaska Area at any time.* *(iii) You must possess a subsistence fishing permit to take salmon, trout, or char. You must possess a subsistence fishing permit to take steelhead in Hamilton Bay and Kadake Bay Rivers. You must possess a subsistence fishing permit to take eulachon from any freshwater stream flowing into fishing Sections 1-C or 1-D.* ***(xviii) The subsistence fishery for Chinook salmon in Southeast Alaska is closed. The incidental harvest limit of Chinook salmon is 2 fish in possession.***
Region 1 - Southeast Regional Council Recommendation	**Oppose.**
Interagency Staff Committee Recommendation	**Defer.**
ADF&G Comments	The Federal Subsistence Board meeting book is being published prior to development of final recommendations and comments by the Alaska Department of Fish and Game. This information will be available on the Department's website by January 4, 2005. See the ADF&G homepage, under the headings of "highlights" and "regulations", at http://www.adfg.state.ak.us. For those without computer access, please call 1-907- 267-2360 for further information.
Written Public Comments	**None.**

REGIONAL ADVISORY COUNCIL RECOMMENDATIONS

SOUTHEAST REGIONAL COUNCIL

Oppose the proposal. This proposal also came from the Council working group asked to examine regulations in Southeast Alaska and to identify possible changes. The Council modified the proposal and then deliberated the modified proposal.

This proposal does not address a pressing management concern or problem. No information was presented indicating that too many Chinook salmon were being harvested incidental to other Federal subsistence harvests. Discussion on this proposal concerned the general need to protect Chinook salmon stocks, desire on the part of a number of Council members for subsistence users to be allowed to catch straying hatchery produced Chinook in drainages where they do not spawn, and providing subsistence harvests of Chinook.

The Council voted on the following proposed modification, but it failed on a tie vote:

*§___.27(i)(13)***(xviii)** ~~***The subsistence fishery for Chinook salmon in Southeast Alaska is closed.***~~ ***The incidental harvest limit of Chinook salmon is 2 fish in possession.***

INTERAGENCY STAFF COMMITTEE RECOMMENDATION

Defer the proposal to next year, contrary to the recommendation of the Southeast Regional Advisory Council, to give the Southeast Regional Advisory Council further time to consider this proposal, including modifications to be brought forward by staff.

Justification

The Council vote was evenly split on this proposal; therefore the proposal failed to be recommended to the Federal Subsistence Board. Staff and the Interagency Staff Committee recognize that the Council is concerned about the ability to take Chinook salmon hatchery strays and that the proposal as written would not have facilitated that harvest. Staff believes that a regulatory solution can be developed which will address everyone's concerns. The Interagency Staff Committee therefore recommends that this proposal be deferred to the next regulatory cycle to allow the deliberation of other options by the Council in a public meeting. In the meantime, there is no significant conservation concern resulting from the existing regulations.

COMMENTS

ADF&G

The Federal Subsistence Board meeting book is being published prior to development of final recommendations and comments by the Alaska Department of Fish and Game. This information will be available on the Department's website by January 4, 2005. See the ADF&G homepage, under the headings of "highlights" and "regulations", at http://www.adfg.state.ak.us. For those without computer access, please call 1-907- 267-2360 for further information.

PUBLIC

None.

STAFF ANALYSIS
FP05-23

ISSUES

Proposal FP05-23 submitted by the Southeast Regional Advisory Council would close subsistence fishing for Chinook salmon and set an incidental harvest limit, for Chinook salmon, in the Southeastern Alaska Area.

Current Federal regulations do not restrict the harvest of Chinook salmon in waters under Federal jurisdiction in the Southeastern Alaska Area. The intent of this proposal is to establish a general regulation for the Southeastern region that closes directed Chinook salmon fishing unless otherwise specified. The proposal recognizes that Chinook may be harvested while targeting other species and sets an incidental harvest limit.

DISCUSSION

Existing Federal Regulation

§___.27(i)(13)(i) Unless restricted in this section or under the terms of a subsistence fishing permit, you may take fish other than salmon, rainbow/steelhead trout, and char in the Southeastern Alaska Area at any time.

(iii) You must possess a subsistence fishing permit to take salmon, trout, or char. You must possess a subsistence fishing permit to take steelhead in Hamilton Bay and Kadake Bay Rivers. You must possess a subsistence fishing permit to take eulachon from any freshwater stream flowing into fishing Sections 1-C or 1-D.

§___.27(i)(13) (--) In the mainstem of the Stikine River:

(A) You may take sockeye salmon under the authority of a Federal subsistence fishing permit issued by the USDA Forest Service for the Stikine River. Each Stikine River permit will be issued to a household and will be valid for 15 days. Permits may be revalidated for additional 15-day periods.

(B) The total annual guideline harvest level for the Stikine River fishery is 600 sockeye salmon.

(C) You may take sockeye salmon from July 1 – July 31. The annual limit is 40 sockeye salmon per household. Only dipnets, spears, gaffs, rod and reel, beach seine, or gillnet not exceeding 15 fathoms in length with mesh size no larger than 5½-inches may be used.

(D) Salmon taken incidentally by gear operated under terms of this permit are legally taken and must be reported on the permit calendar.

Proposed Federal Regulation

§___.27(i)(13)(i) Unless restricted in this section or under the terms of a subsistence fishing permit, you may take fish other than salmon, rainbow/steelhead trout, and char in the Southeastern Alaska Area at any time.

(iii) You must possess a subsistence fishing permit to take salmon, trout, or char. You must possess a subsistence fishing permit to take steelhead in Hamilton Bay and Kadake Bay Rivers. You must possess a subsistence fishing permit to take eulachon from any freshwater stream flowing into fishing Sections 1-C or 1-D.

(xviii) The subsistence fishery for Chinook salmon in Southeast Alaska is closed. The incidental harvest limit of Chinook salmon is 2 fish in possession.

Extent of Federal Public Waters

This proposal, if adopted, would apply to all Federal public waters in the Southeastern Alaska Area, between a line projecting southwest from the westernmost tip of Cape Fairweather and Dixon Entrance. However, subsistence uses are not permitted in the following National Park Service lands: Glacier Bay National Park, Klondike Gold Rush National Historical Park and Sitka National Historical Park.

Note: For purposes of this discussion, the phrase "Federal public waters" is defined as those waters described under 50 CFR 100.3(b).

Customary and Traditional Use Determinations

Customary and Traditional Use Determinations for the Southeastern Alaska Area apply and are listed in Appendix A at the end of the Fisheries Regulatory Review and Recommendation Section.

Regulatory History

Current Federal regulations do not restrict the harvest of Chinook salmon in waters under Federal jurisdiction in the Southeastern Alaska Area. However, in the Stikine River the incidental take of Chinook salmon while targeting sockeye salmon, is specifically not limited. Efforts are under way to implement a directed Chinook fishery in the Stikine River through the Pacific Salmon Commission (PSC).

State sport fishing, State subsistence fishing (5 AAC 01.730) and State personal use fishing (5 AAC 77.268 (c)) regulations close the directed fishery for wild Chinook salmon in freshwaters within the Southeastern Alaska Area.

Some personal use permits specifically target hatchery fish (5 AAC 77.685), such as those returning to the Whitman Lake Hatchery. Hatchery Chinook salmon are also targeted in a sportfishery at Blind Sough near Petersburg, which allows the harvest of Chinook salmon returning to Crystal Lake Hatchery.

Chinook salmon harvested incidentally while fishing under the authority of State personal use or subsistence fishery permits may be retained (5 AAC 01.730 and 5 AAC 77.682 (c)). The daily limit for Chinook salmon harvested incidentally in personal use fisheries is two fish. There is no limit for incidentally harvested Chinook salmon in State subsistence fisheries. Chinook salmon harvested in State subsistence or personal use fisheries must be reported on fishing permits (Kelly 2004 pers. comm.).

Biological Background

Wild Chinook salmon production in the Southeastern Alaska Area originates mostly from mainland rivers and streams. The island stock of Chinook salmon in the King Salmon River, Admiralty Island, is a rarity in the Southeastern Alaska Area and the escapement is relatively small as reported by the Chinook Technical Committee (CTC 2003) of the PSC. Chinook salmon stocks in the Southeastern Alaska Area have rebuilt over recent years and are generally considered healthy (CTC 2003). However, many of the stocks are small in number.

Table 1 displays escapement and index survey data for key Chinook salmon indicator stocks in the Southeastern Alaska Area (CTC 2003). The escapement and index estimates are based on a variety of techniques. A description of how the estimates were obtained for each system

Table 1. Estimates and indices of the annual escapement of chinook salmon in Southeast Alaska and Transboundary Rivers, 1975 to 2002 (CTC 2003).

	Southeast Alaska Rivers				Transboundry Rivers			
Year	King Salmon River Esc.	Andrew Esc.	Blossom Index	Keta Index	Taku Esc.	Stikine Esc.	Unuk Index	Chickamin Index
1975	62	520	146	203	12,920	7,571		370
1976	96	404	68	84	24,582	5,723		157
1977	199	456	112	230	29,496	11,445	974	363
1978	84	388	143	392	17,124	6,835	1,106	308
1979	113	327	54	426	21,617	12,610	576	239
1980	104	282	89	192	39,239	30,573	1,016	445
1981	139	536	159	329	49,559	36,057	731	384
1982	354	672	345	754	23,847	40,488	1,351	571
1983	245	366	589	822	9,795	6,424	1,125	599
1984	265	389	508	610	20,778	13,995	1,837	1,102
1985	175	640	709	624	35,916	16,037	1,184	956
1986	255	1,416	1,278	690	38,110	14,889	2,126	1,745
1987	196	1,576	1,349	768	28,935	24,632	1,973	975
1988	208	1,128	384	575	44,524	37,554	1,746	786
1989	240	1,060	344	1,155	40,329	24,282	1,149	934
1990	179	1,328	257	606	52,143	22,619	591	564
1991	134	800	239	272	51,645	23,206	655	487
1992	99	1,556	150	217	55,889	34,129	874	346
1993	259	2,120	303	362	66,125	58,962	1,068	389
1994	207	1,144	161	306	48,368	33,094	711	388
1995	144	686	217	175	33,805	16,784	722	356
1996	284	670	220	297	79,019	23,886	1,167	422
1997	357	586	132	246	114,938	28,185	636	272
1998	132	974	91	180	31,039	25,968	840	391
1999	300	1,210	212	276	19,734	19,947	680	492
2000	137	1,380	231	300	30,529	27,531	1,341	801
2001	147	2,108	204	343	49,509	63,523	2,019	1,010
2002	153	1,752	224	411	48,848	50,875	897	1,013
1993-2002 ave.	212	1,263	200	290	52,191	34,876	1,008	553
Escapement Goal:								
Lower	120	650	250	250	30,000	14,000	650	450
Upper	240	1,500	500	500	55,000	28,000	1,400	900
Spearman's Rho Nonparametric Trend Test (Conover 1980):								
Rho	0.1355	0.0351	0.2922	0.4234	0.0585	0.1843	0.6540	0.3049
P-value	0.1544	0.7516	0.0070	0.0001	0.5441	0.0975	0.0001	0.1147
N	112	84	84	84	110	82	54	28

is contained in the CTC report (CTC 2003). The escapement goals were agreed upon and formulated using protocols in the CTC escapement goals report (CTC 1999).

Harvest History

The following information on the harvest of Chinook salmon was provided by Mike Turek (2004 pers. comm.) of the Alaska Department of Fish and Game (ADF&G) Subsistence Division:

> *"*King Salmon (Chinook salmon) (Oncorhynchus tschawytscha). King salmon have been important food fish utilized by Tlingit, Haida, and Tsimshian Natives in southeast Alaska since before historic contact and continuing to the present (Stewart 1977). Early reports describing Native life in southeast Alaska frequently discuss the harvest and use of salmon species, and king salmon in particular, by the area's residents (Krause 1956 (1885]:60, 120-124; Boas 1966 (1895]:3; de Laguna 1960:116; 1972:401-2; Niblack.1890; Olson, 1967; Rousselot et al. 1988:152-3; Swanton. 1908). King salmon were a particularly prized salmon species because of their high oil content, their large size, good flavor and preserving qualities. King salmon could be harvested efficiently in or near migratory streams with indigenous in-stream technology. King salmon were also prized because they could be harvested in most months of the year in salt water using traditional open-water fishing methods. Dried king salmon and king salmon strips were important trade items. Very different harvesting strategies were used by Tlingit groups, depending on whether or not they controlled king salmon spawning streams. King salmon spawning streams and the right to harvest fish from them were owned by Tlingit, Haida, and Tsimshian matrilineal clans or clan-houses. In the case of larger king salmon systems, harvest sites might be specified and owned. Some of the main king systems in mainland southeast Alaska with important Native fisheries were Situk, Chilkat, Taku, Stikine rivers; other king systems existed on southeast Alaska islands. Because there are very few king salmon systems in southeast Alaska, most localized clans and clan houses did not own a king system. Harvest at the streams that were owned was controlled by the managing clan or clan-house. The clan or clan-house head determined who could fish from an owned stream, when fishing would take place, and what methods of harvest were allowed. Most typically, fish camps were established at or near harvest sites to process subsistence fish. Aboriginal management appears to have insured that adequate escapement took place (see Thornton, Schroeder, and Bosworth, 1990, for discussion)."

The Chilkoot River is not under Federal jurisdiction. There have been no Federal Subsistence Customary and Traditional Use determinations made for the Taku River and the King Salmon River; therefore, they are open to all rural residents for the harvest of salmon.

Recently the harvest of Chinook salmon has not been allowed in freshwater by State regulation and nearly all harvest has taken place in marine waters. There has not been any subsistence fishing targeting Chinook salmon in freshwater for many years.

Most of the Chinook salmon harvest in the freshwaters of the Southeastern Alaska Area has occurred in the personal use fishery targeting Whitman Lake hatchery fish; the 1990-2003 average annual harvest in this fishery has been about 160 fish. The average annual reported incidental harvest of Chinook salmon in other Southeast Alaska subsistence and personal use

fisheries has been relatively insignificant, generally less than 100 fish per year (Kelly 2004, pers. comm.).

Regulations were recently established for the Stikine River, through a collaborative process with the PSC. In the Stikine River it is not necessary to limit the harvest of Chinook salmon caught incidentally while targeting sockeye salmon, because of the season dates in effect. Efforts are under way to establish a directed Chinook fishery in the Stikine River.

Effects of the Proposal

Closing subsistence fishing to the harvest of Chinook salmon in waters under Federal jurisdiction in the Southeastern Alaska Area would not change where users currently obtain Chinook salmon, which is primarily from marine waters.

Closing the Federal subsistence fishery would align Federal and State regulations and provide users with clear direction for the harvest of Chinook salmon in freshwater. The proposal recognizes that Chinook salmon may be harvested by subsistence users while targeting other species, and establishes an incidental harvest limit. The incidental limit would allow some incidental harvest while limiting the effect on the Chinook salmon stocks. The incidental limit of two Chinook salmon would align with most State personal use limits, but would be potentially more restrictive and not consistent with State subsistence fishery incidental limits (Kelly 2004, pers. comm.).

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FP05-24 Executive Summary	
General Description	Establish harvest limits. (Originator: Southeast Regional Advisory Council)
Proposed Regulation	**Southeastern Alaska Area – Sockeye Salmon** *§___.27(i)(13) (xi) For the Salmon Bay Lake system, the daily harvest and season limit per household is 30 sockeye salmon.* *(xii) For Virginia Lake (Mill Creek), the daily harvest limit per household is 20 sockeye salmon, and the season limit per household is 40 sockeye salmon.* *(xiii) For Thoms Creek, the daily harvest limit per household is 20 sockeye salmon, and the season limit per household is 40 sockeye salmon.* *(xv) Only Federally-qualified subsistence users may harvest sockeye salmon in streams draining into Falls Lake Bay, Gut Bay, or Pillar Bay. In the Falls Lake Bay and Gut Bay drainages, the possession limit is 10 sockeye salmon per household. In the Pillar Bay drainage, the individual possession limit is 15 sockeye salmon with a household possession limit of 25 sockeye salmon.* ***§_.27(i)(13)(xviii) If a harvest limit is not listed for sockeye salmon in this section, the harvest limit for sockeye salmon is the same as listed on State subsistence or personal use fishing permits. If the stream system is not listed on a State permit, the possession limit is 10 sockeye salmon and the annual harvest limit is 20 sockeye for that stream per household.***
Region 1 - Southeast Regional Council Recommendation	**Support with modification** to clarify wording.
Interagency Staff Committee Recommendation	**Support with modification** to provide management flexibility to selectively harvest or protect specific stocks
ADF&G Comments	The Federal Subsistence Board meeting book is being published prior to development of final recommendations and comments by the Alaska Department of Fish and Game. This information will be available on the Department's website by January 4, 2005. See the ADF&G homepage, under the headings of "highlights" and "regulations", at http://www.adfg.state.ak.us. For those without computer access, please call 1-907- 267-2360 for further information.
Written Public Comments	**None.**

FP05-26 Executive Summary	
General Description	Clarify harvest limits (none). (Originator: Southeast Regional Advisory Council)
Proposed Regulation	**Southeastern Alaska Area – Pink and Chum Salmon** *§___.27(i)(13)(i) Unless restricted in this section or under the terms of a subsistence fishing permit, you may take fish other than salmon, rainbow/steelhead trout, and char in the Southeastern Alaska Area at any time.* *(iii) You must possess a subsistence fishing permit to take salmon, trout, or char. You must possess a subsistence fishing permit to take steelhead in Hamilton Bay and Kadake Bay Rivers. You must possess a subsistence fishing permit to take eulachon from any freshwater stream flowing into fishing Sections 1-C or 1-D.* ***(xviii) There are no harvest limits for the harvest of pink and chum salmon.***
Region 1 - Southeast Regional Council Recommendation	**Support with modification** to clarify wording and specify when limits for pink and chum salmon may be applied.
Interagency Staff Committee Recommendation	**Support with modification** to provide management flexibility to selectively harvest or protect specific stocks.
ADF&G Comments	The Federal Subsistence Board meeting book is being published prior to development of final recommendations and comments by the Alaska Department of Fish and Game. This information will be available on the Department's website by January 4, 2005. See the ADF&G homepage, under the headings of "highlights" and "regulations", at http://www.adfg.state.ak.us. For those without computer access, please call 1-907- 267-2360 for further information.
Written Public Comments	**None.**

REGIONAL ADVISORY COUNCIL RECOMMENDATIONS

SOUTHEAST REGIONAL COUNCIL

The Council acted on these proposals separately.

FP05-24 Support with modification to clarify wording as follows:

> *§___.27(i)**(13)(xviii) If the harvest limit is not listed for sockeye salmon in this section, the harvest limit for sockeye salmon is the same as listed on State subsistence or personal use fishing permits. If a harvest limit is not established for the state fisheries, the possession limit is 10 sockeye salmon and the annual harvest limit is 20 sockeye for that stream per household.***

Existing regulations may have the effect of confusing Federal subsistence users or unintentionally restricting their ability to fish in sockeye systems where the State of Alaska fisheries biologists do not open a State subsistence or personal use fishery. This proposal provides a conservative possession and annual limit for these sockeye systems.

This proposal, because of its conservative limits, does not raise general conservation concerns. Issues related to specific drainages may be addressed by in-season management actions in consultation with the Council. Data presented support this proposal. This proposal will benefit subsistence fishers by potentially allowing them to fish in additional sockeye systems. We foresee no adverse effects on non-subsistence users.

FP05-26 Support with modification to clarify wording and specify when limits for pink and chum salmon may be applied as follows:

> *§___.27(i)(13)(xix)* ***Except where stated in regulations governing Federal subsistence fishing permits, there are no harvest limits for the harvest of pink and chum salmon. Limits will not be set on subsistence harvests, unless clear conservation concerns require special in-season or pre-season actions.***

The Council accepts the staff recommendation. Pink and chum salmon are abundant in Southeast Alaska. The Council heard that there have been no in-season closures of subsistence fishing in the Sitka area to protect pink or chum salmon stocks. This proposal clarifies allowable subsistence pink and chum salmon harvest.

INTERAGENCY STAFF COMMITTEE RECOMMENDATION

Support with modification, consistent with the recommendation of the Southeast Regional Advisory Council, to provide clarified language that still promotes the intent of the proposals.

The modified proposed regulation should read:

§___.27(i)(13)(i) Unless restricted in this section or under the terms of a subsistence fishing permit, you may take fish other than salmon, rainbow/steelhead trout, and char in the Southeastern Alaska Area at any time.

(iii) You must possess a subsistence fishing permit to take salmon, trout, or char. You must possess a subsistence fishing permit to take steelhead in Hamilton Bay and Kadake Bay Rivers. You must possess a subsistence fishing permit to take eulachon from any freshwater stream flowing into fishing Sections 1-C or 1-D.

(xi) For the Salmon Bay Lake system, the daily harvest and season limit per household is 30 sockeye salmon.

(xii) For Virginia Lake (Mill Creek), the daily harvest limit per household is 20 sockeye salmon, and the season limit per household is 40 sockeye salmon.

(xiii) For Thoms Creek, the daily harvest limit per household is 20 sockeye salmon, and the season limit per household is 40 sockeye salmon.

(xv) Only Federally-qualified subsistence users may harvest sockeye salmon in streams draining into Falls Lake Bay, Gut Bay, or Pillar Bay. In the Falls Lake Bay and Gut Bay drainages, the possession limit is 10 sockeye salmon per household. In the Pillar Bay drainage, the individual possession limit is 15 sockeye salmon with a household possession limit of 25 sockeye salmon.

(xviii) If a harvest limit is not listed for sockeye salmon in this section, the harvest limit for sockeye salmon is the same as provided for State subsistence and personal use fisheries. If a harvest limit is not established for the state fisheries, the possession limit is 10 sockeye salmon and the annual harvest limit is 20 sockeye for that stream per household.

(xix) Unless noted on the Federal subsistence fishing permit, there are no harvest limits for the harvest of pink and chum salmon.

Justification

The wording of the proposed regulation changes was modified slightly from the wording proposed by the Council. This modification still promotes use of a single permit system, promotes cooperation among State and Federal managers, maintains the management flexibility to selectively harvest or protect specific stocks, protects salmon stocks from unlimited harvests,

and maintains the status quo regarding where users get their permits, where and when they can fish, and the number of fish that may be harvested.

Subsistence users would benefit from this clarification in Federal regulations about the use of State permit conditions. Federal subsistence salmon fishing harvest limits in Southeastern Alaska would default to the State's permit stipulations. This proposed change would prevent the use of Federal subsistence fishing regulations to conduct an unlimited harvest of sockeye salmon and would provide for conservation and protection of these sockeye stocks. The location or amount of salmon harvested for subsistence would not be affected.

The proposals are designed to promote coordinated management with ADF&G. The Federal in-season managers will retain the prerogative to accept or reject any pre-season or in-season management actions by ADF&G.

COMMENTS

ADF&G

The Federal Subsistence Board meeting book is being published prior to development of final recommendations and comments by the Alaska Department of Fish and Game. This information will be available on the Department's website by January 4, 2005. See the ADF&G homepage, under the headings of "highlights" and "regulations", at http://www.adfg.state.ak.us. For those without computer access, please call 1-907- 267-2360 for further information.

PUBLIC

None.

STAFF ANALYSIS
FP05-24 AND 26

ISSUES

Proposals FP05-24 and FP05-26 were submitted by the Southeast Alaska Subsistence Regional Advisory Council. Proposal FP05-24 specifically seeks to clarify possession and annual household harvest limits for sockeye salmon stocks that do not have limits defined in Federal regulations. Proposal FP05-26 specifically seeks to clarify possession and annual household harvest limits for pink and chum salmon stocks that do not have limits defined in Federal regulations.

DISCUSSION

There is a direct overlap in State and Federal regulations and management of salmon in Southeastern Alaska. Both agencies manage the same subsistence salmon stocks and require harvesters to have a permit. Subsistence fishers have a long history of obtaining their subsistence fishing permits from the local Alaska Department of Fish and Game (ADF&G) office. Most subsistence fishing for salmon is done using nets in marine waters under State jurisdiction.

State and Federal subsistence regulations are similar. Federal regulations were originally based on the State subsistence regulations when the Federal government assumed responsibility for management of subsistence fishery resources on Federal public waters in 1999. However, Federal regulations differ in Southeastern Alaska by allowing the sale of fish and by allowing the use of rod and reel and handline gear. Differences in the boundaries of customary and traditional use areas complicate coordination of management. There are also differences in harvest limits resulting from regulatory changes and from Federal subsistence fisheries being considered open until closed while State fisheries are considered closed until open.

Nevertheless, with few exceptions, subsistence users have been obtaining their subsistence salmon fishing permits from ADF&G. Federal regulations allow Federally qualified subsistence users to use a State subsistence permit and follow Federal regulations if State regulations are more restrictive. Current Federal regulations for the subsistence take of salmon only require use of a Federal permit for the take of coho salmon in Subdistricts 3-A, B, and C and for the take of sockeye salmon in the Stikine River. Proposal FP05-27 seeks to consolidate the existing Federal regulations for the harvest of coho salmon in Southeastern Alaska and do away with the requirement of a Federal permit to take coho salmon in Subdistricts 3-A, B, and C.

Federal subsistence fishing regulations for Southeastern Alaska do not specify harvest limits for sockeye, pink, and chum salmon except in a few locations. However, most sockeye systems do have a harvest limit stipulated on the State subsistence and personal use salmon permits. Relatively liberal harvest limits for pink and chum salmon are also listed on the State permits.

Existing Federal Regulation

§___.27(i)(13)(i) Unless restricted in this section or under the terms of a subsistence fishing permit, you may take fish other than salmon, rainbow/steelhead trout, and char in the Southeastern Alaska Area at any time.

(iii) You must possess a subsistence fishing permit to take salmon, trout, or char. You must possess a subsistence fishing permit to take steelhead in Hamilton Bay and Kadake Bay Rivers. You must possess a subsistence fishing permit to take eulachon from any freshwater stream flowing into fishing Sections 1-C or 1-D.

(xi) For the Salmon Bay Lake system, the daily harvest and season limit per household is 30 sockeye salmon.

(xii) For Virginia Lake (Mill Creek), the daily harvest limit per household is 20 sockeye salmon, and the season limit per household is 40 sockeye salmon.

(xiii) For Thoms Creek, the daily harvest limit per household is 20 sockeye salmon, and the season limit per household is 40 sockeye salmon.

(xv) Only Federally-qualified subsistence users may harvest sockeye salmon in streams draining into Falls Lake Bay, Gut Bay, or Pillar Bay. In the Falls Lake Bay and Gut Bay drainages, the possession limit is 10 sockeye salmon per household. In the Pillar Bay drainage, the individual possession limit is 15 sockeye salmon with a household possession limit of 25 sockeye salmon.

Proposed Federal Regulation

§___.27(i)(13)(i) Unless restricted in this section or under the terms of a subsistence fishing permit, you may take fish other than salmon, rainbow/steelhead trout, and char in the Southeastern Alaska Area at any time.

(iii) You must possess a subsistence fishing permit to take salmon, trout, or char. You must possess a subsistence fishing permit to take steelhead in Hamilton Bay and Kadake Bay Rivers. You must possess a subsistence fishing permit to take eulachon from any freshwater stream flowing into fishing Sections 1-C or 1-D.

(xi) For the Salmon Bay Lake system, the daily harvest and season limit per household is 30 sockeye salmon.

(xii) For Virginia Lake (Mill Creek), the daily harvest limit per household is 20 sockeye salmon, and the season limit per household is 40 sockeye salmon.

(xiii) For Thoms Creek, the daily harvest limit per household is 20 sockeye salmon, and the season limit per household is 40 sockeye salmon.

(xv) Only Federally-qualified subsistence users may harvest sockeye salmon in streams draining into Falls Lake Bay, Gut Bay, or Pillar Bay. In the Falls Lake Bay and Gut Bay drainages, the possession limit is 10 sockeye salmon per household. In the Pillar Bay drainage, the individual possession limit is 15 sockeye salmon with a household possession limit of 25 sockeye salmon.

(xviii) If a harvest limit is not listed for sockeye salmon in this section, the harvest limit for sockeye salmon is the same as listed on State subsistence or personal use fishing permits. If the stream system is not listed on a State permit, the possession limit is 10 sockeye salmon and the annual harvest limit is 20 sockeye for that stream per household.

(xix) There are no harvest limits for the harvest of pink and chum salmon.

These proposed regulatory changes specifically support use of the State's harvest limits for sockeye salmon.

Extent of Federal Public Waters

This regulation, if adopted, would apply to all Federal public waters in the Southeastern Alaska Area, between a line projecting southwest from the westernmost tip of Cape Fairweather and Dixon Entrance. However, subsistence uses are not permitted in the following National Park Service lands: Glacier Bay National Park, Klondike Gold Rush National Historical Park, and Sitka National Historical Park.

Note: For purposes of this discussion, the phrase "Federal public waters" is defined as those waters described under 50 CFR 100.3(b).

Customary and Traditional Use Determinations

Customary and Traditional Use Determinations for the Southeastern Alaska Area apply and are listed in Appendix A at the end of the Fisheries Regulatory Review and Recommendation section.

Regulatory History

Federal regulations pertaining to the subsistence harvest of salmon, trout, Dolly Varden, and smelt in the Southeast Alaska area were adopted directly from State regulations when the Federal government assumed management of subsistence fisheries resources on Federal public lands and waters in 1999. A permit is required to harvest salmon and, with few exceptions (i.e., coho salmon on Prince of Wales Island and sockeye salmon in the Stikine River), the permits have been issued by the ADF&G. This single permit system works reasonably well for the users and the resource.

In recent discussions among Federal staff, it was realized that Federal regulations should clarify acceptance of the harvest limits on the State permits. It was understood that Federal regulations currently allow a person to harvest an unlimited number of Chinook, pink, and chum salmon and unlimited number of sockeye salmon outside of the systems (Salmon Bay Lake, Virginia Lake, Thoms Creek, Falls Lake Bay, Gut Bay, Pillar Bay, and the Stikine River) specifically listed in the regulations.

Effects of the Proposal

FP05-24:

The first sentence of proposed regulatory change *§___.27(i)(13)(xviii)*, "If a harvest limit is not listed for sockeye salmon in this section, the harvest limit for sockeye salmon is the same as listed on State subsistence or personal use fishing permits," clarifies harvest limits for the principal subsistence sockeye stocks and keeps Federal and State harvest limits consistent.

The second sentence of proposed regulatory change *§___.27(i)(13)(xviii)*, "If the stream system is not listed on a State permit, the possession limit is 10 sockeye salmon and the annual harvest limit is 20 sockeye for that stream per household," puts harvest limits on the remaining sockeye systems in Southeastern Alaska. This provides Federal subsistence users with reasonable subsistence harvest opportunity while controlling for an unlimited harvest of sockeye salmon in these relatively small and seldom fished systems.

FP05-26:

The proposed regulatory change *§___.27(i)(13)(xix)*, which specifically states that there are no harvest limits for pink and chum salmon, recognizes the subsistence value of these species and that the Federal subsistence take will be relatively small and of little risk to the health of these runs. Any conservation issues for pink and chum salmon will be addressed through in-season management actions and coordination with ADF&G.

Possession and annual limits for pink and chum salmon are relatively liberal on the State subsistence salmon and personal use permits. Possession limits for pink salmon range from 50 in ADF&G's Sitka management area to 150 in ADF&G's Juneau and Ketchikan management areas. Annual limits for pink salmon range from 150 to no limits. Fish may be harvested from any stream in each management area. State harvest limits are more restrictive for chum salmon - possession limits are 25 or 50 and annual limits are 50 or unlimited depending on the management area. One reason the State has put harvest limits on pink and chum salmon is to better segregate commercial and subsistence harvest effort in terminal marine harvest areas. This is not an issue for Federal subsistence fishing.

The Council stated in the proposal that "The demand for pink and chum salmon is being met and this proposal will not result in an increased harvest of these species." The Council also stated that "Clearly identifying that there is no harvest limit for pink and chum salmon should result in no changes in common fishing practices." The intent of this proposed regulation is simply to make it clear to Federally qualified subsistence users that there are no limits on the harvest of pink and chum salmon.

This proposed regulation will promote coordination with ADF&G and be consistent with direction from the Federal Subsistence Board (Board) "that subsistence fisheries management by Federal officials be coordinated with the ADF&G and involve Regional Advisory Council representatives to conserve healthy fish stocks while providing for subsistence uses" (May 2002, letter of delegation).

Subsistence permits may contain restrictions that are in addition to formal regulations passed by the Board. The Board has delegated authority to set harvest limits, define, areas, specify methods, or close fisheries to the agency field officials.. Federal subsistence managers may also issue special actions "when necessary to assure the conservation of healthy fish stocks and to provide for subsistence uses of fish in Federal public waters."

There might not be a need for both State and Federal subsistence fishing permits to harvest sockeye salmon in all areas of Southeastern Alaska. Section ___.27(c)(17)(i) allows the use of rod and reel for Federally qualified subsistence users if the State issues a subsistence fishing permit. Section ___.27(c)(19) states that Federally qualified users do not need to follow State permit provisions if they are in conflict with Federal regulations. These provisions have allowed the use of rod and reel by Federally qualified users when they hold a State subsistence fishing permit.

FP05-25 Executive Summary	
General Description	Remove the closure for non-Federally qualified subsistence users. (Originator: Alaska Department of Fish & Game)
Proposed Regulation	**Southeastern Alaska Area – Sockeye Salmon** *§___.27(i)(13)(xv) Only Federally-qualified subsistence users may harvest sockeye salmon in streams draining into Falls Lake Bay,* ~~and~~ *Gut Bay~~, or Pillar Bay~~. In the Falls Lake Bay and Gut Bay drainages, the possession limit is10 sockeye salmon per household. In the Pillar Bay drainage, the individual possession limit is15 sockeye salmon with a household possession limit of 25 sockeye salmon.*
Region 1 - Southeast Regional Council Recommendation	**Oppose.**
Interagency Staff Committee Recommendation	The Interagency Staff Committee did not reach consensus. The vote was evenly split, resulting in two different recommendations to the Federal Subsistence Board. **Option A: Oppose** **Option B: Support**
ADF&G Comments	The Federal Subsistence Board meeting book is being published prior to development of final recommendations and comments by the Alaska Department of Fish and Game. This information will be available on the Department's website by January 4, 2005. See the ADF&G homepage, under the headings of "highlights" and "regulations", at http://www.adfg.state.ak.us. For those without computer access, please call 1-907- 267-2360 for further information.
Written Public Comments	**None.**

REGIONAL ADVISORY COUNCIL RECOMMENDATIONS

SOUTHEAST REGIONAL COUNCIL

Oppose the proposal. Kutlaku Lake and Creek were closed to harvest of sockeye salmon by non-Federally qualified fishers through Federal Subsistence Board action on FP01-31. At that time the Council evaluated information presented and concluded that residents of Kake, the subsistence community making most use of the Kutlaku system, were having problems getting sufficient sockeye salmon from this traditional harvest area. This proposal would reopen the Kutlaku system to non-Federally qualified fishers.

The Council examined data presented by staff. The reported subsistence harvest of sockeye from the Kutlaku system over the 2000-2003 period is much lower than harvests over the preceding 15 year period. Kake subsistence fishers may be fishing elsewhere to allow this system to recover. The Federal subsistence harvest limits for this system are 15 possession and 25 annual, very low given the travel distance from Kake and subsistence needs. Commercial harvest of sockeye in adjacent waters has increased, particularly over 2001-2003; for these years they are over 100 times the known subsistence take from the Kutlaku drainage. Historical escapement data is fragmentary and based on occasional aerial or foot surveys. Good escapement data for 2003 shows about 7,000 fish in the system, however, this escapement number cannot be compared with historic data. In summary, the escapement data and the harvest data do not lead to the conclusion that the system has recovered substantially since action was taken on FP01-31.

The Council heard extensive testimony from the Organized Village of Kake (OVK). OVK strongly opposes this proposal to reopen the Kutlaku system. OVK maintained that there continued to be a conservation concern with this system. OVK described the difficulties faced this year by Kake residents in meeting subsistence needs for sockeye. OVK also described the growth of the sport fishing use in the immediate vicinity of the Kutlaku subsistence harvesting sites.

In weighing the information and testimony presented, the Council concludes that a conservation concern continues to exist with the Kutlaku system; it should not be reopened until recovery has been documented. Existing data, such as they are, support continuing the closure on non-subsistence users. Adopting this proposal would have adverse effects on subsistence users. Adopting the proposal could have positive effects on non-subsistence sport fishers.

The Council is particularly interested in understanding the impact of the very large adjacent commercial sockeye fishery on this traditional subsistence harvesting system, and requests staff assistance in evaluating and mitigating possible effects on traditional subsistence uses.

INTERAGENCY STAFF COMMITTEE RECOMMENDATION

The Interagency Staff Committee did not reach consensus. The vote was evenly split, resulting in two different recommendations to the Federal Subsistence Board.

Option A:

Oppose the proposal, consistent with the recommendation of the Southeast Regional Advisory Council, to maintain the closure.

Justification

Members opposing the proposal to remove the closure to non-Federally qualified subsistence users base their recommendation on four considerations. 1) During public testimony at the Southeast Regional Advisory Council meeting, representatives of the community of Kake stated that they are unable to meet their subsistence needs for sockeye salmon, because of insufficient fish and competition with other harvesters. 2) The reported subsistence harvest levels by Kake community members may be constrained by current levels of abundance, and would likely be much higher if more sockeye were available, and if harvest caps were increased. 3) The population abundance information suggesting that there may be sufficient fish for other harvesters, represents only one (or depending on interpretation, two) year(s) of data; adequate sockeye salmon escapement over a full five year life cycle is desirable to demonstrate that there are no conservation concerns with this stock . 4) Limnology data from Kutlaku Lake suggests that this system is highly productive and that is likely to support larger populations of sockeye salmon.

Option B:

Support the proposal, contrary to the recommendation of the Southeast Regional Advisory Council.

Justification

Members supporting the proposal to eliminate the closure base their recommendation on three considerations. 1) Recent spawning escapement information on Kutlaku Lake sockeye indicates an abundance level capable of sustaining subsistence harvests as well as allowing for non-subsistence uses. 2) Available information indicates that nearly all of the harvest and user conflict occurs in marine waters which are outside of Federal management jurisdiction. 3) Past actions by the Federal Subsistence Board to resolve user group conflicts such as overcrowding has been to encourage the appropriate Federal and State agencies to work together in resolving such conflicts and not through non-subsistence harvest closures.

COMMENTS

ADF&G

The Federal Subsistence Board meeting book is being published prior to development of final recommendations and comments by the Alaska Department of Fish and Game. This information will be available on the Department's website by January 4, 2005. See the ADF&G homepage, under the headings of "highlights" and "regulations", at http://www.adfg.state.ak.us. For those without computer access, please call 1-907- 267-2360 for further information.

PUBLIC

None.

STAFF ANALYSIS
FP05-25

ISSUES

Proposal FP05-25 submitted by the Alaska Department of Fish and Game (ADF&G) would allow non-Federally qualified sport and subsistence fishers to harvest sockeye in Pillar Bay (Kutlaku Lake).

The Federal Subsistence Board (Board) restricted the harvest of sockeye salmon at Kutlaku Lake, Gut Bay Lake and Falls Lake to Federally qualified subsistence users effective for the 2001 fishing season. ADF&G subsequently submitted a Request for Reconsideration (RFR01-01), which was not adopted by the Board. The Board funded a sockeye assessment project at Kutlaku Lake in 2002 and 2003. These studies produced a partial sockeye salmon escapement estimate for 2002 and a total escapement estimate for 2003.

DISCUSSION

The 2002 sockeye escapement estimate (greater than 1,400 fish) for Kutlaku Lake was incomplete because it did not account for an unknown number of sockeye salmon spawning in the stream after the survey and in the lake. The 2003 escapement estimate (between 7,400 and 8,400 fish) accounted for these spawning groups and is much higher than any of the recent aerial or foot escapement surveys (**Table 1**). Because there has only been one completed escapement survey, there remains some uncertainty with the data and an escapement goal has not been established. Because of budget shortfalls and changing priorities, there are not plans for continued assessments of this type in the future. The 2003 escapement estimate does suggest that there is not a concern with sustainability. Commercial harvests of sockeye salmon in the lower portions of Chatham Strait have significantly increased, but harvest mixed stocks of sockeye and appear to allow adequate escapements (**Table 2**). The subsistence fishery has decreased significantly since 2000 and recently annual harvests are about one third of the long-term average (**Table 3**). Due to limitation of the state-wide harvest survey, it is unlikely that the estimate of sockeye taken in the sport fishery will be known in future years whether the retention of sockeye by non-Federally qualified users is allowed or not.

Existing Federal Regulation

§___.27(i)(13)(xv) Only Federally-qualified subsistence users may harvest sockeye salmon in streams draining into Falls Lake Bay, Gut Bay, or Pillar Bay. In the Falls Lake Bay and Gut Bay drainages, the possession limit is10 sockeye salmon per household. In the Pillar Bay drainage, the individual possession limit is15 sockeye salmon with a household possession limit of 25 sockeye salmon.

Proposed Federal Regulation

*§___.27(i)(13)(xv) Only Federally-qualified subsistence users may harvest sockeye salmon in streams draining into Falls Lake Bay; **and** Gut Bay, ~~or Pillar Bay~~. In the Falls Lake Bay and Gut Bay drainages, the possession limit is 10 sockeye salmon per household. In the*

Table 1. Sockeye Escapement Surveys, Kutlaku Lake, 1960 to 2003.

Year	No. of Surveys	Aerial or Foot Peak Surveys	Mark-Recapture Estimate
1960	2	4,000	no survey
1961	2	2,500	no survey
1962	3	2,000	no survey
1963	0	no survey	no survey
1964	0	no survey	no survey
1965	1	700	no survey
1966	1	600	no survey
1967	3	5,000	no survey
1968	3	2,000	no survey
1969	1	0	no survey
1970	0	no survey	no survey
1971	1	500	no survey
1972	3	500	no survey
1973	4	3,000	no survey
1974	4	3,000	no survey
1975	3	200	no survey
1976	1	80	no survey
1977	2	350	no survey
1978	2	70	no survey
1979	0	no survey	no survey
1980	2	700	no survey
1981	1	80	no survey
1982	4	750	no survey
1983	2	1,535	no survey
1984	1	1,400	no survey
1985	2	2,260	no survey
1986	4	450	no survey
1987	4	1,575	no survey
1988	8	1,000	no survey
1989	5	1,200	no survey
1990	5	900	no survey
1991	2	0	no survey
1992	4	1,830	no survey
1993	3	1,800	no survey
1994	2	1,200	no survey
1995	2	885	no survey
1996	1	0	no survey
1997	1	0	no survey
1998	1	200	no survey
1999	1	2,000	no survey
2000	0	no survey	no survey
2001	0	no survey	no survey
2002	0	no survey	>1,400
2003	1	500	7,400 - 8,400
Average	**2**	**1,210**	

Table 2. Chatham Strait, Bay of Pillars Area, Commercial Sockeye Harvest, 1969 to 2003.

Chatham Strait Area	
Subdistricts 109-51, 52, 61 and 62	
Year	Total Harvest
1969	325
1970	957
1971	312
1972	739
1973	1,540
1974	935
1975	0
1976	0
1977	0
1978	0
1979	10,657
1980	11
1981	134
1982	4,421
1983	2,611
1984	2,842
1985	5,550
1986	3,041
1987	5,361
1988	2,975
1989	4,254
1990	6,156
1991	5,873
1992	10,995
1993	27,304
1994	24,673
1995	10,566
1996	10,110
1997	7,419
1998	10,056
1999	11,156
2000	8,789
2001	41,415
2002	10,653
2003	26,308

Average Harvest 1969-89 = 2,222

Average Harvest 1990-2000 = 12,100

Average Harvest 2001-03 = 26,125

Table 3. Kutlaku (Bay of Pillars), 109-52-35, subsistence salmon harvest.

Year	Permits	Chinook	Sockeye	Coho	Pink	Chum
1985	38	0	812	0	0	0
1986	32	0	750	0	0	0
1987	50	0	1312	0	0	0
1988	48	0	969	0	0	0
1989	36	0	784	8	20	25
1990	27	0	593	0	0	0
1991	37	0	813	0	0	0
1992	63	0	1375	0	80	0
1993	23	0	516	0	0	0
1994	24	0	629	5	14	1
1995	11	0	238	0	0	0
1996	33	0	842	0	6	2
1997	33	0	648	0	15	0
1998	33	0	791	0	1	1
1999	46	0	984	0	0	0
2000	15	0	200	0	2	28
2001	8	0	130	0	5	0
2002	8	0	194	0	0	0
2003	20	0	341	0	25	0
Average	**31**	**0**	**680**	**1**	**9**	**3**

Average sockeye harvest 1985-2000 = 766
Average number of permits 1985-2000 = 34

Average sockeye harvest 2001-2003 = 222
Average number of permits 2001-2003 = 12

Pillar Bay drainage, the individual possession limit is 15 sockeye salmon with a household possession limit of 25 sockeye salmon.

Extent of Federal Public Waters

This regulation, if adopted, would apply to the Federal public waters within the Kutlaku Lake watershed. The Kutlaku lake system is located at the head of Pillar Bay and is currently being managed by the USDA Forest Service as a "Wild and Scenic River".

Note: For purposes of this discussion, the phrase "Federal public waters" is defined as those waters described under 50 CFR 100.3(b).

Customary and Traditional Use Determinations

Customary and Traditional Use Determinations for the Southeastern Alaska Area apply and are listed in Appendix A at the end of the Fisheries Regulatory Review and Recommendation section.

Regulatory History

Proposal FP01-31, submitted by the Organized Village of Kake and the City of Kake, requested that the Board close the Federal public waters draining into Falls Lake, Gut Bay Lake and Pillar Bay drainages (Kutlaku Lake) to the harvest of sockeye salmon by non-Federally qualified subsistence users and eliminate possession limits at those locations.

The Organized Village of Kake expressed local knowledge to the Southeast Alaska Subsistence Regional Advisory Council that sport fishers at Falls Lake, Gut Bay and Pillar Bay are negatively impacting the subsistence users in Kake. However, it was not clear in the record, what was impacting the Kake residents and preventing them from a successful subsistence fishery. During a August 2001 public meeting in Kake, one of the original authors of the proposal, explained that there was a consensus among Kake residents that there was a concern that the sum total of the harvest from all fisheries was causing the fishers to "eat themselves" meaning there was over harvest of the stocks. He also believed sport fishing at Falls Lake, Gut Bay and Pillar Bay was negatively impacting the ability of subsistence users in Kake to get the fish they need. He explained that the physical presence of other users disrupted the subsistence fishery by anchoring vessels in productive fishing locations and interfered with the normal subsistence fishing activities (Jackson 2001 pers. comm.) (RFR01- 01).

The Alaska Department of Fish and Game submitted a Request for Reconsideration (RFR01-01). The staff analysis indicated while there were conservation concerns at Falls Lake and Gut Bay Lake, there was not clear evidence of a conservation concern at Kutlaku Lake. The Board did not rescind the closure of any of these three systems to non-Federally qualified users because of: 1) the uncertainty of escapement data and 2) the potential for interference with subsistence fishing activities by other users.

In 2002, the ADF&G responded to the conservation concern by closing a large section of the bay near the mouth of the stream leading to Kutlaku Lake to subsistence fishing (**Figure 1**). In the State managed subsistence fishery, the annual and possession harvest limit for subsistence sockeye at Bay of Pillars is 50 sockeye. There are no additional restrictions to the sockeye sport fishery in addition to the general Southeast Alaska regulations.

Current Events Involving the Species

The State subsistence harvest limits were changed from 15 in possession and 25 annually to 50 in possession and annually in 2002. The area closed to subsistence fishing was also effective in 2002, 2003 and 2004. Sport fishing regulations and Federal harvest limits have remained unchanged.

Biological Background

There is an extensive history of escapement data for sockeye at Kutlaku Lake (Table 1). The peak aerial or foot survey since 1960 occurred in 1967 with 5,000 sockeye observed. These surveys are not total estimates of sockeye escapement but are index values, often observed as part of pink salmon assessments. In 2002, a population assessment using mark-recapture techniques was attempted for Kutlaku Lake but did not account for some late stream spawning sockeye or

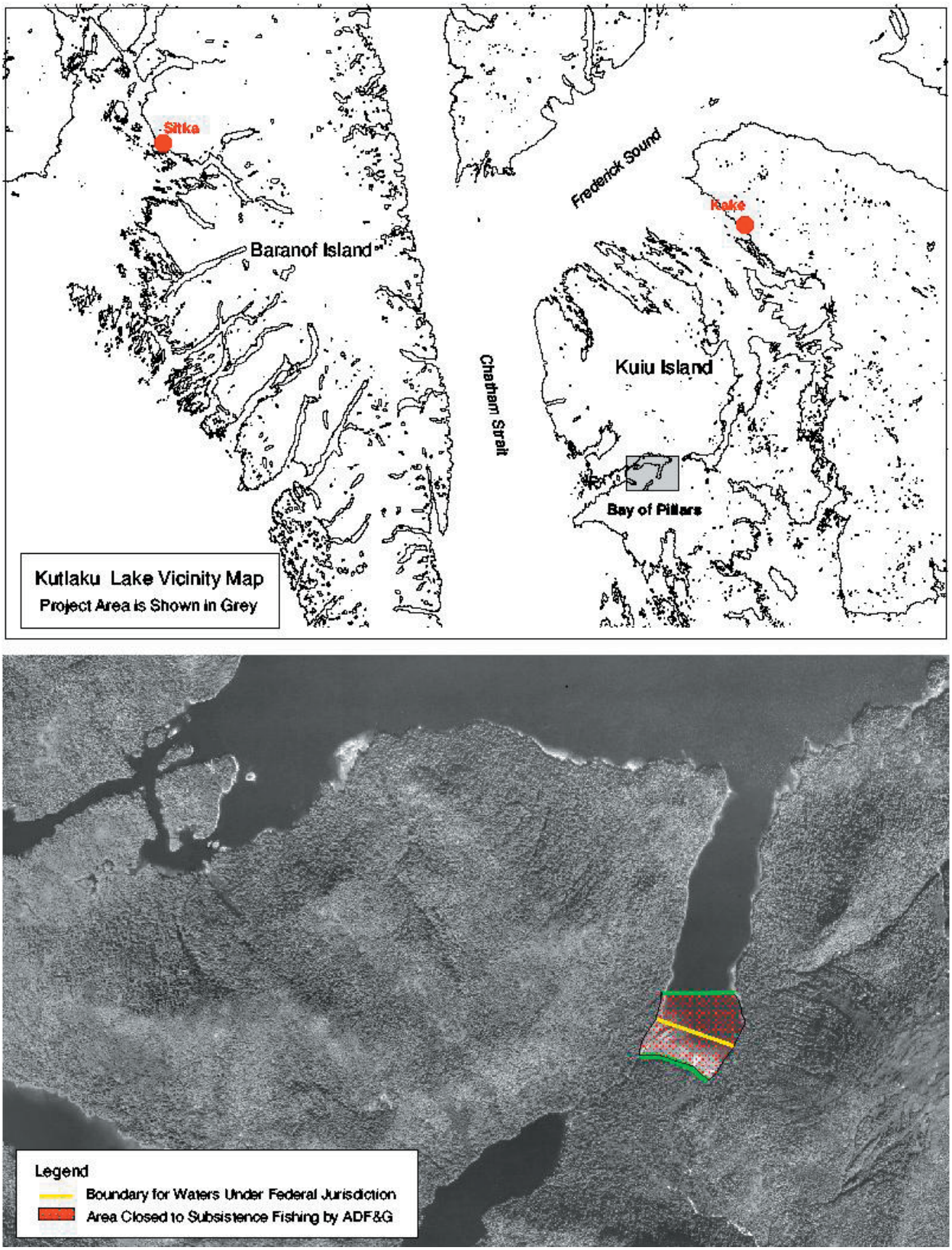

Figure 1. Area Closed to Subsistence Fishing by ADF&G

lake spawning sockeye. There is not a point estimate of total escapement other than the total is in excess of 1,400 fish. In 2003, the researchers were able to estimate the total escapement at between 7,400 and 8,400 fish. Based on the numbers of zooplankton observed, Kutlaku Lake appears to have the potential to support more juvenile sockeye than are currently observed. Additional years of study are necessary to understand mechanisms limiting freshwater sockeye production. The 2002 study results have been published as ADF&G Regional Information Report RIRIJ03-42. The 2003 study results are in draft form. Based on the 2003 population assessment estimate, the escapement of sockeye into Kutlku Lake appears to be at a level where there is not an obvious conservation concern. However, there are not enough years of information describing lake productivity and escapement trends to develop formal escapement goals. There are no plans to continue sockeye assessment studies at Kutlaku Lake.

Harvest History

Kutlaku sockeye have a long history of harvest by commercial and subsistence interests. There was a salmon saltery at the mouth of the stream in the early 1900s and a cannery at the mouth of Pillar Bay in the 1950s and 60s. There is not a commercial fishery targeting Kutlaku Lake sockeye and the inner bay has been closed to commercial fishing for several decades. The only commercial fishing that may intercept Kutlaku sockeye is now conducted in Chatham Strait. This fishery harvests large numbers of pink salmon, smaller numbers of chum salmon, coho, and small numbers of sockeye, which comprise less than 1% of the commercial seine harvests in Subdistricts 109-51, -52, -61, and -62. Sockeye caught in these fisheries include mixed wild stocks and fish produced at Snettisham Hatchery. Increased fishing time due to the success of the Regions salmon hatcheries and increased abundance of sockeye salmon in Chatham Strait due to the success of the Snettisham hatchery are contributing factors for the increased number of sockeye caught in the portion of Chatham Strait near Pillar Bay (Table 2). There is no way of estimating the number of Kutlaku Lake sockeye salmon intercepted in the commercial fishery but the number is probably low in most years due to timing of the sockeye returns to Kutlaku Lake.

The number of sockeye harvested in the sport fishery is thought to be small and due to limitations in the State-wide harvest survey, cannot be reported separately for Kutlaku Lake. Due to the remoteness of Kutlaku Lake and the presence of a nearby charter fishing lodge, it is thought that most of the sport fishing in Kutlaku Lake is conducted by clients of the fishing lodge or passengers from pleasure boats transiting the area. If effort increases, the numbers of fishers responding will increase and allow more specific harvest estimates. New guide licensing changes will capture guided salt- and freshwater effort and harvest beginning in 2005. Effectively, there would be signals if effort increased as a result of allowing non-federally qualified users to harvest sockeye in Kutlaku Lake.

All of the subsistence harvest is taken under State fishing permits. The average subsistence harvest from 1985 to 2000 was 766 sockeye taken by 34 fishers. Since the 2001 season, the average harvest has been 222 sockeye salmon taken by 12 fishers (Table 3).

The USDA Forest Service monitors the use of the Kutlaku area by outfitter guides. The number of “recreational visitor use days” (one person on USDA Forest Service property for 12 -hours is one use day) have remained fairly stable for fishing and hunting in Pillar Bay but show

considerable growth in the hiking category (**Table 4**).

Table 4. Recreational Visitor Use days on Tongass National Forest from 1989 through 2003.

Kutlaku Lake/Bay of Pillars				
Year	Fishing	Sockeye Harvested	Hiking	Hunting
1989	0	no data	0	4
1990	0	no data	0	0
1991	0	no data	0	30
1992	0	no data	0	14
1993	43	no data	24	35
1994	74	no data	47	20
1995	36	no data	7	18
1996	46	no data	18	3
1997	29	no data	17	28
1998	4	no data	0	29
1999	13	no data	33	20
2000	20	0	102	59
2001	18	0	74	19
2002	31	0	92	28
2003	19	0	85	20
Average	**22**	**0**	**33**	**22**

Effects of the Proposal

The effects of adopting this proposal would be to allow the retention of sockeye by non-Federally qualified users in the Kutlaku Lake watershed. This change would allow all sport fishers and all State subsistence fishers to retain sockeye harvested in the areas under Federal jurisdiction in the Kutlaku Lake watershed.

Due to limitation of the state-wide harvest survey, it is unlikely that the estimate of sockeye taken from Kutlaku Lake in the sport fishery will be known in future years; whether the retention of sockeye by non-Federally qualified users is allowed or not.

LITERATURE CITED

ADF&G 2004. Alexander, Commercial harvest database. updated May 2004.

ADF&G 2004. Alexander, Subsistence and personal use harvest database. updated May 2004.

USDA Forest Service 2004. Petersburg Ranger District, Outfitter-guide actual use database. updated April 2004

FP05-27 Executive Summary	
General Description	Remove annual harvest limit & prohibition on retaining incidentally-caught trout or sockeye salmon. (Originator: Southeast Regional Advisory Council)
Proposed Regulation	**Southeastern Alaska Area – Coho Salmon** *§___.27(I)(13)(v)* ~~In the Southeastern Alaska Area, except for Sections 3A, 3B, and 3C and the Stikine and Taku Rivers, y~~*You may take coho salmon under the terms of a subsistence fishing permit* ***except in the Stikine and Taku Rivers****. There is no closed season. The daily harvest limit is 20 coho salmon per household.~~, and the annual limit is 40 coho salmon per household.~~ Only dipnets, spears, gaffs, and rod and reel may be used. Bait may only be used from September 15 through November 15.* ~~You may not retain incidentally caught trout and sockeye salmon unless taken by gaff or spear.~~ ~~§___.27(I)(13)(vi) You may take coho salmon in Subdistricts 3(A), (B), and (C) only under the terms of a Federal subsistence fishing permit. There is no closed season. The daily harvest limit is 20 fish per household. Only spears, dipnet, and rod and reel may be used. Bait may be used only from September 15 through November 15.~~
Region 1 - Southeast Regional Council Recommendation	**Support.**
Interagency Staff Committee Recommendation	**Support.**
ADF&G Comments	The Federal Subsistence Board meeting book is being published prior to development of final recommendations and comments by the Alaska Department of Fish and Game. This information will be available on the Department's website by January 4, 2005. See the ADF&G homepage, under the headings of "highlights" and "regulations", at http://www.adfg.state.ak.us. For those without computer access, please call 1-907- 267-2360 for further information.
Written Public Comments	**None.**

REGIONAL ADVISORY COUNCIL RECOMMENDATIONS

SOUTHEAST REGIONAL COUNCIL

Support the proposal. This proposal does not raise conservation concerns. The staff analysis supports this regulatory change. It may help subsistence users by clarifying and simplifying regulations. We do not believe that adoption will affect non-subsistence users.

INTERAGENCY STAFF COMMITTEE RECOMMENDATION

Support the proposal, consistent with the recommendation of the Southeast Regional Advisory Council.

Justification

In the two years during which current regulations have been in effect, subsistence fishers in the Southeast Alaska region have not reported any coho salmon harvested under Federal subsistence fishing regulations outside of Prince of Wales Island. If adopted, this proposal would benefit subsistence users by standardizing Federal subsistence fishing regulations. The proposed regulation does not raise any conservation issues at this time. Any concerns that may arise in the future can be addressed via specific conditions stipulated on the required subsistence fishing permit.

COMMENTS

ADF&G

The Federal Subsistence Board meeting book is being published prior to development of final recommendations and comments by the Alaska Department of Fish and Game. This information will be available on the Department's website by January 4, 2005. See the ADF&G homepage, under the headings of "highlights" and "regulations", at http://www.adfg.state.ak.us. For those without computer access, please call 1-907- 267-2360 for further information.

PUBLIC

None.

STAFF ANALYSIS
FP05-27

ISSUES

Proposal FP05-27, submitted by the Southeast Alaska Subsistence Regional Advisory Council, addresses the area's Federal subsistence coho salmon fishery. If adopted, this proposal would remove the annual harvest limit for coho salmon and delete the prohibition on retaining incidentally-caught trout and sockeye salmon in the Southeastern Alaska Area, other than Sections 3-A, 3-B and 3-C while fishing for coho salmon.

The intent of this proposal is to standardize the Federal regulations for subsistence coho salmon fishing in Southeast Alaska. There is no restriction on incidental harvest of other species while targeting coho salmon in Sections 3-A, 3-B and 3-C and there have been no enforcement or conservation concerns identified with that fishery. Removing the prohibition on incidental harvest of other species in the Federal subsistence coho fishery would align State and Federal regulations. Proposal FP05-22 (recommend oppose) provides a general restriction to incidental harvest and Proposal FP05-23 (recommend support) provides a two fish incidental harvest level for Chinook salmon. Removing the annual harvest limit from the Federal subsistence fishery would provide for a single Federal subsistence coho fishing regulation but would not align Federal and State regulations because State regulations specify a 40 coho annual harvest cap.

DISCUSSION

Existing Federal Regulation

§___.27(I)(13)(v) In the Southeastern Alaska Area, except for sections 3A, 3B, and 3C and the Stikine and Taku Rivers, you may take coho salmon under the terms of a subsistence fishing permit. There is no closed season. The daily harvest limit is 20 coho salmon per household, and the annual limit is 40 coho salmon per household. Only dipnets, spears, gaffs, and rod and reel may be used. Bait may only be used from September 15 through November 15. You may not retain incidentally caught trout and sockeye salmon unless taken by gaff or spear.

(vi) You may take coho salmon in Subdistricts 3(A), (B), and (C) only under the terms of a Federal subsistence fishing permit. There is no closed season. The daily harvest limit is 20 fish per household. Only spears, dip net, and rod and reel may be used. Bait may be used only from September 15 through November 15.

Proposed Federal Regulation

§___.27(I)(13)(v) ~~In the Southeastern Alaska Area, except for Sections 3A, 3B, and 3C and the Stikine and Taku Rivers, y~~You may take coho salmon under the terms of a subsistence fishing permit except in the Stikine and Taku Rivers. There is no closed season. The daily harvest limit is 20 coho salmon per household.~~, and the annual limit is 40 coho salmon per household.~~ Only dipnets, spears, gaffs, and rod and reel may be used. Bait may only

be used from September 15 through November 15. ~~You may not retain incidentally caught trout and sockeye salmon unless taken by gaff or spear.~~

~~§___.27(I)(13)(vi) You may take coho salmon in Subdistricts 3(A), (B), and (C) only under the terms of a Federal subsistence fishing permit. There is no closed season. The daily harvest limit is 20 fish per household. Only spears, dipnet, and rod and reel may be used. Bait may be used only from September 15 through November 15.~~

Extent of Federal Public Waters

This regulation, if adopted, would apply to all Federal public waters in the Southeastern Alaska Area, between a line projecting southwest from the westernmost tip of Cape Fairweather and Dixon Entrance. However, subsistence uses are not permitted in the following National Park Service waters: Glacier Bay National Park, Klondike Gold Rush National Historical Park and Sitka National Historical Park.

Note: For purposes of this discussion, the phrase "Federal public waters" is defined as those waters described under 50 CFR 100.3(b).

Customary and Traditional Use Determinations

Customary and Traditional Use Determinations for the Southeastern Alaska Area apply and are listed in Appendix A at the end of the Fisheries Regulatory Review and Recommendation section.

Regulatory History

Regulatory restrictions governing the harvest of coho salmon in Sections 3-A, 3-B and 3-C (the west coast of Prince of Wales Island) were in effect during the 2001 fishing season. The subsequent year, the 2002 season, similar regulations were adopted for the remainder of the Southeastern Alaska Area. Neither of the coho salmon subsistence fishing regulations restricted open areas or provided for a closed season but they did severely restrict allowable gear by specifying only spears, gaffs, dipnets and rod and reel. A prohibition on the retention of sockeye and trout was applied to all areas except Sections 3-A, 3-B and 3-C due to concerns expressed by the Alaska Department of Fish and Game (ADF&G) concerning the lack of a fishing season and the use of rod and reel.

There are specific harvest limits for sockeye in only the mainstem of the Stikine River and six stream systems in the Southeastern Alaska Area (Salmon Bay, Virginia Lake, Thoms Creek, Falls Lake, Gut Bay and Pillar Bay) in Federal regulations. There are no specific restrictions on gear, season and harvest levels for all other sockeye systems or any chum or pink systems. There is no cap on the incidental harvest of any species while fishing for sockeye, pink or chum salmon (including coho and Chinook).

The State adopted subsistence coho fishing regulations effective in the 2003 season. These regulations were valid in both freshwater and marine waters and generally allowed the use of gillnets, seines, dipnets, spears, and gaffs. The season opening date was August 15 but there was

no restriction on the incidental harvest of other salmon or trout. State sport fishing regulations provide for the retention of two Chinook (marine waters only), six coho, six sockeye, six chum, six pink salmon, ten Dolly Varden char and two trout (between 11- and 22-inches). State personal use fishing regulations prohibit the directed harvest of Chinook or coho but allow the same gear as the subsistence fishery. The incidental harvest limit for coho in the personal use fishery is six coho salmon.

Current Events Involving the Species

The Federal subsistence fishing regulations for coho salmon were unchanged in 2004. The Pacific Salmon Commission on April 9, 2004, did not authorize a Federal subsistence coho salmon fishery on the Stikine River.

Biological Background

With few exceptions, the abundance of all species of salmon in the Southeastern Alaska Area is at healthy levels and support significant commercial, sport and subsistence fisheries.

Harvest History

The Federal subsistence salmon harvest in the Southeastern Alaska Area is closely monitored with almost 100 percent of subsistence permits returned to the USDA Forest Service. Harvest patterns in 2002 and 2003 were very similar. All of the coho salmon harvested from Southeast Alaska were taken from Prince of Wales Island in both 2002 and 2003. There were only seven sockeye taken from Sections 3-A, 3-B and 3-C in 2002 and no sockeye were taken from these Sections in 2003. There were no trout reported on Federal permits, (other than the directed steelhead fishery on Prince of Wales Island), from Southeast Alaska in either year. During the 2003 season, there were no Chinook, 21 sockeye, 206 coho, 13 pink and no chum reported by permit in the Federal subsistence fishery (**Table 1**).

During 2003, the first year of the State's subsistence coho fishery, there were 185 Chinook, 46,829 sockeye, 874 coho, 2,787 pink and 3,125 chum salmon taken during the subsistence (hatchery areas excluded) fishery from streams throughout Southeast Alaska (ADF&G 2004).

Table 1. Federal Subsistence Salmon Harvest, Southeastern Alaska Area

2002

Area	Sockeye	Coho	Pink	Chum
Section 3-A, 3-B, 3-C	7	333	0	0
Remainder of Prince of Wales	38	63	11	0
Remainder of Southeast Area	124	0	0	4
Total Southeast Alaska Area	169	396	11	4

2003

Area	Sockeye	Coho	Pink	Chum
Section 3-A, 3-B, 3-C	0	142	10	0
Remainder of Prince of Wales	10	64	3	0
Remainder of Southeast Area	11	0	0	0
Total Southeast Alaska Area	21	206	13	0

Effects of the Proposal

This change would streamline Federal regulations and provide users with consistent regulations for the harvest of coho salmon in the Southeastern Alaska Area this would include the use of gaffs in Sections 3-A, 3-B, and 3-C. This proposed regulation would not change recent harvest practices nor will it affect conservation of any species. The proposal would not align Federal and State regulations regarding the annual harvest limit as specified in State regulations.

LITERATURE CITED

ADF&G 2004. Subsistence and personal use database updated May 2004.

FP05-29 Executive Summary	
General Description	Require a 36-inch minimum size & harvest limit of 2 per year. (Originator: William Welton)
Proposed Regulation	**Southeastern Alaska Area, Prince of Wales Island - Steelhead** *§___.27(i)(13)(iv) You may take steelhead trout on Prince of Wales Island only under the terms of Federal Subsistence fishing permits. You must obtain a separate permit for the winter and spring seasons.* ***For all streams on Prince of Wales Island, the minimum size limit is 36" with an annual household limit of 2 fish.*** *(A) The winter season is December 1 through the last day of February, ~~with a harvest limit of 2 fish per household~~. You may use only a dip net, spear, or rod and reel with artificial lure or fly. You may not use bait. The winter season may be closed when the harvest level cap of 100 steelhead for Prince of Wales Island has been reached. You must return your winter season permit within 15 days of the close of the season and before receiving another permit for a Prince of Wales steelhead subsistence fishery. The permit conditions and systems to receive special protection will be determined by the local Federal fisheries manager in consultation with ADF&G.* *(B) The spring season is March 1 through May 31, ~~with a harvest limit of 5 fish per household~~. You may use only a dip net, spear, or rod and reel with artificial lure or fly. You may not use bait. The spring season may be closed prior to May 31 if the harvest quota of 600 fish minus the number of steelhead harvested in the winter subsistence steelhead fishery is reached. You must return your spring season permit within 15 days of the close of the season and before receiving another permit for a Prince of Wales steelhead subsistence fishery. The permit conditions and systems to receive special protection will be determined by the local Federal fisheries manager in consultation with ADF&G.*
Region 1 - Southeast Regional Council Recommendation	**Oppose.**
Interagency Staff Committee Recommendation	**Oppose**
ADF&G Comments	The Federal Subsistence Board meeting book is being published prior to development of final recommendations and comments by the Alaska Department of Fish and Game. This information will be available on the Department's website by January 4, 2005. See the ADF&G homepage, under the headings of "highlights" and "regulations", at http://www.adfg.state.ak.us. For those without computer access, please call 1-907- 267-2360 for further information.
Written Public Comments	**None**

REGIONAL ADVISORY COUNCIL RECOMMENDATIONS

SOUTHEAST REGIONAL COUNCIL

Oppose the proposal. This proposal would require a 36-inch size limit and a two fish annual limit for steelhead on Prince of Wales Island. Public testimony from Prince of Wales Island communities strongly supported keeping the present regulation in effect. The proposal does not address a real management concern or conservation issue. It is not supported by substantial data and would adversely affect subsistence steelhead fishers. The proposal would have no effect on non-subsistence harvesters.

In its discussion of this proposal the Council noted that small road accessible steelhead streams on Prince of Wales Island had been closed by the Federal in-season manager in 2003 and spring 2004. Since these closures were made without a demonstrated conservation concern, they were in direct conflict with the Council recommendation and with the Federal regulation passed at the winter 2002 fisheries meeting. Perhaps by oversight, Council members from Prince of Wales and the Council Chair were not consulted before the Federal manager closed the small road accessible streams. The Council notes that Federal in-season managers are required to consult with affected Regional Advisory Council members and the Council Chair before undertaking any in-season management action. We trust that Prince of Wales Island streams will not be closed to Federal subsistence fishing in the winter 2004 and spring and winter 2005 seasons unless there are indications that excessive Federal subsistence harvest poises a threat to local stocks and without consultation with the Council. The Council further notes that ANILCA would appear to require closure of streams for non-subsistence harvests, including sport fishing, before Federal subsistence fishing opportunities were curtailed. We request that staff insure better implementation of Federal subsistence steelhead regulations on Prince of Wales in the coming season

INTERAGENCY STAFF COMMITTEE RECOMMENDATION

Oppose the proposal, consistent with the recommendation of the Southeast Regional Advisory Council.

Justification

Following two years of Federal regulation implementation for the harvest of steelhead, no apparent conservation concern has been detected for Prince of Wales Island. Reported harvest during the 2003 spring fishery was 24 steelhead, and during the 2004 spring fishery was 26 steelhead. All steelhead were taken from the larger systems on Prince of Wales Island, with harvest from each system being well below a 10% annual exploitation rate. Based on permit data, there has been no reported harvest from any of the small steelhead drainages regardless of access.

Concern over fall run stocks was addressed between State and Federal staff prior to action by the Federal Subsistence Board in December 2002. To provide harvest opportunity while protecting fall steelhead from excessive harvest, an annual harvest cap of 100 fish was placed on the winter season fishery, with the winter harvests included in the total cap for both seasons (FSB 2002). Reported harvest during the winter 2003 fishery was two steelhead harvested from the Klawock River.

An annual household limit of two fish over 36-inches does not meet subsistence users documented use of seven steelhead per household for the households who reported using them (Paige 2002). This would be an unnecessary restriction to subsistence users. Although reported harvests have been low, permit returns have indicated that some households have harvested an annual limit of five steelhead per household in the spring fishery (USDA Forest Service 2004).

Information from the Alaska Department of Fish and Game indicates that some steelhead harvest may not be documented through Federal subsistence harvest permits. With the current regulation in place, it is more likely that users will comply with the regulations than if the 36-inch minimum, two fish household limit were put into regulation.

Based on the low reported harvests from the Federal subsistence fisheries, little or no effects are anticipated for other user groups by restricting the fishery nor would conservation be served.

COMMENTS

ADF&G

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PUBLIC

None.

STAFF ANALYSIS
FP05-29

ISSUES

Proposal FP05-29, submitted by William Welton, requests a 36-inch minimum size limit and a two fish annual harvest limit for the Prince of Wales (POW) and Kosciusko Island (Kosciusko) Federal subsistence steelhead (*Oncorhynchus mykiss*) fishery. This proposal indicates no restriction on gear types.

DISCUSSION

The proponent of FP05-29 is concerned that the existing Federal subsistence regulation may allow too much steelhead harvest for populations to handle, so he requests a change to a minimum size restriction of 36-inches, along with a two fish annual harvest limit as exists in state regulation. The proponent also feels that the Federal Subsistence Board's (Board) previous decision was based more on emotion rather than biology. Lastly, the proponent feels that steelhead have not been an important subsistence resource since other salmon are available in larger numbers to fulfill subsistence users needs.

Existing Federal Regulation

The existing Federal Subsistence Regulation is:

§___.27(i)(13)(iv) You may take steelhead trout on Prince of Wales and Kosciusko Islands under the terms of Federal Subsistence fishing permits. You must obtain a separate permit for the winter and spring seasons.

(A) The winter season is December 1 through the last day of February, with a harvest limit of 2 fish per household. You may use only a dip net, spear, or rod and reel with artificial lure or fly. You may not use bait. The winter season may be closed when the harvest level cap of 100 steelhead for Prince of Wales/Kosciusko Islands has been reached. You must return your winter season permit within 15 days of the close of the season and before receiving another permit for a Prince of Wales/Kosciusko steelhead subsistence fishery. The permit conditions and systems to receive special protection will be determined by the local Federal fisheries manager in consultation with ADF&G.

(B) The spring season is March 1 through May 31, with a harvest limit of 5 fish per household. You may use only a dip net, spear, or rod and reel with artificial lure or fly. You may not use bait. The spring season may be closed prior to May 31 if the harvest quota of 600 fish minus the number of steelhead harvested in the winter subsistence steelhead fishery is reached. You must return your spring season permit within 15 days of the close of the season and before receiving another permit for a Prince of Wales/Kosciusko steelhead subsistence fishery. The permit conditions and systems to receive special protection will be determined by the local Federal fisheries manager in consultation with ADF&G

Proposed Federal Regulation

The proposed Federal Subsistence Regulation would read:

§___.27(i)(13)(iv) You may take steelhead trout on Prince of Wales Island only under the terms of Federal Subsistence fishing permits. You must obtain a separate permit for the winter and spring seasons. ***For all streams on Prince of Wales and Kosciusko Islands, the minimum size limit is 36" with an annual household limit of 2 fish.***

(A) The winter season is December 1 through the last day of February~~, with a harvest limit of 2 fish per household~~. You may use only a dip net, spear, or rod and reel with artificial lure or fly. You may not use bait. The winter season may be closed when the harvest level cap of 100 steelhead for Prince of Wales/Kosciusko Islands has been reached. You must return your winter season permit within 15 days of the close of the season and before receiving another permit for a Prince of Wales/Kosciusko steelhead subsistence fishery. The permit conditions and systems to receive special protection will be determined by the local Federal fisheries manager in consultation with ADF&G.

(B) The spring season is March 1 through May 31~~, with a harvest limit of 5 fish per household~~. You may use only a dip net, spear, or rod and reel with artificial lure or fly. You may not use bait. The spring season may be closed prior to May 31 if the harvest quota of 600 fish minus the number of steelhead harvested in the winter subsistence steelhead fishery is reached. You must return your spring season permit within 15 days of the close of the season and before receiving another permit for a Prince of Wales/Kosciusko steelhead subsistence fishery. The permit conditions and systems to receive special protection will be determined by the local Federal fisheries manager in consultation with ADF&G.

Extent of Federal Public Waters

Federal public waters involved are those of the Tongass National Forest, excluding marine waters, on POW and Kosciusko (**Map 1**).

Note: For purposes of this discussion, the phrase "Federal public waters" is defined as those waters described under 50 CFR 100.3(b).

Customary and Traditional Use Determinations

Action by the Board on proposals FP04-23 through FP04-28 during its December 2003 meeting resulted in a change to the Customary and Traditional use determinations for POW and Kosciusko. Residents living south of Sumner Strait and west of Clarence Strait and Kashevaroff Passage have a positive determination for salmon, Dolly Varden, trout, smelt, and eulachon in Districts 2, 3, and 5 and waters draining into those districts. Residents living south of Sumner Strait and west of Clarence Strait and Kashevaroff Passage; residents of drainages flowing into District 6 north of the latitude of Port Alexander (Mitkof Island); residents of drainages flowing into Districts 7 and 8, including the communities of Petersburg and Wrangell; and residents of the communities of Meyers Chuck and Kake have a positive determination for salmon, Dolly Varden, trout, smelt, and eulachon in District 6 and waters draining into that district.

Map 1 – Prince of Wales Island and communities

Regulatory History

State Regulatory History

Prior to the Federal subsistence fishery for steelhead that was created three years ago, all steelhead harvest on POW and Kosciusko occurred under State of Alaska sport fish regulations, and was taken incidentally in subsistence or commercial fisheries.

In 1989, the Alaska Board of Fisheries recognized customary and traditional use of steelhead in Section 3-B in waters east of a line from Point Ildefonso to Tranquil Point and in waters of Warm Chuck Inlet north of a line from a point on Heceta Island at 55ø 44' N. lat., 133ø 25' W. long. to Bay Point, and in Section 3-C in waters of Karheen Passage north of 55ø 48' N. lat. and east of 133ø 20' W. long. and in waters of Sarkar Cove and Sarkar Lakes.

In Southeast Alaska, including both POW and Kosciusko, State regulations prohibit the issuance of subsistence permits for steelhead but allow steelhead taken incidentally by gear operated under the terms of a subsistence permit for salmon to be legally retained for subsistence purposes. Permit holders are required to report on permit calendars any steelhead incidentally taken.

During the 1993/94 regulatory cycle for Southeast Alaska, the Alaska Board of Fisheries changed sport and commercial fishing regulations. Region wide sport fishing regulations were changed to allow a harvest of one fish per day and two fish per year, 36-inches or greater in length. However, the bag limit is two fish if at least one has a clipped adipose fin, as evidenced by a healed scar, and there is no size limit for steelhead with a clipped adipose fin. The Alaska Board of Fisheries also prohibited the use of bait from November 16 through September 14. Lastly, the Alaska Board of Fisheries also prohibited the sale of steelhead caught in commercial net fisheries. In commercial purse seine and gillnet fisheries of Southeast Alaska, Commercial Fisheries Entry Commission permit holders may now steelhead for personal use, but not sell them. Steelhead caught in the commercial troll fishery may be sold.

During the 2003 Alaska Board of Fisheries cycle, the region wide sport regulation for steelhead was revised. The revision was a regulatory "housekeeping" action, submitted by the Alaska Department of Fish and Game (ADF&G), to specify that the two fish daily bag limit would only apply to the Klawock River and Ketchikan Creek; the only two locations where adipose clipped steelhead are found.

In March 2004, ADF&G issued an emergency order effective April 1 through June 15, 2004 that closed all but seven specific drainages on POW and Kosciusko to the harvest of steelhead. With exception of the Thorne River, Klawock River, Karta River, Staney Creek, Hunter Bay Creek, Eagle/Luck Creek, and Harris River drainages, any steelhead caught by sport anglers from other drainages must immediately be released, regardless of size, without removing the fish from the water.

Federal Regulatory History

During the FY2001 fisheries regulatory cycle, the Board allowed fishing for steelhead on POW

(modification of FP01-23) under the terms of a Federal permit. The Board modified the proposal as to methods, means, harvest limit, and size limit (FSB 2000). During the FY2002 fisheries regulatory cycle, the Board rejected FP02-40. The Board rejected the proposal feeling that the increased harvest, as requested by the proponent, would cause conservation concerns (FSB 2001).

During the FY2003 fisheries regulatory cycle, the Southeast Regional Advisory Council modified FP03-25 to a season of December through May, one fish per week per household, with restrictions on small, road-side systems and an annual harvest cap of 600 steelhead (SERAC 2002). Following discussion between Federal and State staff to effectively address the Southeast Council's recommendation, the Board further modified FP03-25 to provide for the regulation currently in effect (FSB 2002). The Board's modification changed the harvest limit from weekly to annually to allow orderly management of the fishery, provide documented harvests, and to avoid exceeding the harvest cap. After two years of experience with the fishery, staff is to report to both the Southeast Council and the Board. Any modification of permit requirements, seasons, bag limits, harvest caps, and other regulations concerning the fishery could be accommodated at that time.

During the FY2004 fisheries regulatory cycle, both the Southeast Council and the Board opposed proposals FP04-31, -32, -34, -35, -36, and –37. These proposals dealt with mandatory weekly and monthly reporting requirements (FP04-31 and -32), mandatory fin clipping of subsistence harvested steelhead (FP04-34), and implementation of 36-inch minimum size limits on Fall steelhead systems, small steelhead systems, and the overall fishery (FP04-35, -36, and –37). All of these proposals were opposed due to low participation in the fishery and the low number of steelhead reported harvested on Federal permits. (FSB 2003, SERAC 2003) Both the Southeast Council and the Board supported FP04-33 to add Kosciusko to the current fishery. Based on testimony at the Council meeting in Craig that some harvest on Kosciusko has occurred, and by allowing a Federal fishery to occur, this harvest could be documented by permit. (FSB 2003, SERAC 2003)

Biological Background

Steelhead are the anadromous form of rainbow trout. Steelhead are known to return to 331 freshwater systems in Southeast Alaska (ADF&G 2002a). There are 74 drainages known to contain steelhead on POW, and 4 on Kosciusko. The life cycle of steelhead is complicated and each year adult returns consist of both first time and repeat spawners (referred to as kelts), each consisting of multiple age classes. Individual streams can contain populations with mature first time spawning fish 3, 4, and 5 years old (Gayeski 2001). Steelhead commonly spawn more than once during their lifetimes and fish over 28-inches are almost always kelts. (ADF&G 2000b) In addition, kelts, as noted during steelhead research conducted on the Karta River, represented up to one third of the returning fish and as many as 10 different age classes. Of the ten age classes, two (3.2 and 3.3) comprised between 58 and 68.5 percent of the kelts. (Harding and Jones 1993, Jones 1984) Lohr & Bryant (1999) based on a review of past steelhead studies, indicate that the number of spawning runs made by kelts, based on scale analysis, ranged from one to four in spring run stocks. The number of kelts decreased in each successive run, with numbers dropping dramatically following the second run.

Peak numbers of steelhead occur in streams in late April and May. Fall and spring run fish (freshwater or ocean maturing) generally spawn at the same time but residence time in streams is longer for fall run (freshwater maturing) fish. Spring run fish (ocean maturing) are most abundant in Southeast Alaska, but it is not uncommon for the same streams to contain a smaller fall run (Lohr & Bryant 1999). Thirteen drainages on POW are known to contain fall run stocks. None of the drainages on Kosciusko are identified as containing fall run stocks. Although both stocks immigrate at different times, emigration typically occurs from mid-May through June (Didier et al. 1990). **Appendix A** lists remote POW/Kosciusko steelhead systems and **Appendix B** lists systems with road access on POW.

Actual population numbers for POW/Kosciusko steelhead, by individual system, are not known. Tentative estimates of escapement, primarily based on professional judgment, were made for the 331 Southeast Alaska steelhead streams. These estimates were best guesses by ADF&G Sport Fish Division area management biologists and are not scientifically defensible.

The small size of most steelhead stocks can make them susceptible to extirpation through habitat degradation or over fishing (Lohr & Bryant 1999). No predictive models have been developed to identify years when harvestable surplus of steelhead may be available. Begich (1998) estimated sustainable annual exploitation rates ranging from 9.8 percent to 28.9 percent for Karluk River (Kodiak Island) steelhead. His model also showed that harvest rates greater than 37.5 percent could not be sustained. Given lower abundance and productivity for POW/Kosciusko steelhead, sustainable exploitation is likely near the lower end of the Karluk model at approximately 10 percent.

The amount of available information for steelhead on POW/Kosciusko is limited. Long-term estimates of adult steelhead abundance on POW/Kosciusko are unavailable, but other information may be useful to provide an index of abundance on POW/Kosciusko. Important information for POW/Kosciusko steelhead includes: accurate identification of “small” (average abundance in low hundreds/under one hundred) runs; and stock assessment of larger runs that could potentially sustain increased directed harvest including estimates of abundance and length structure.

ADF&G ran combination weir and creel census projects at the Karta River in 1983, 1989, and 1992. Two other POW systems, the Thorne (1988/90) and Klawock Rivers (1987/88), have had creel census projects. Since these projects, ADF&G has initiated cabin user surveys, every three years, to registered users of USDA Forest Service cabins. Both ADF&G and the USDA Forest Service have initiated annual index count snorkel surveys. Craig Ranger District began index snorkel counts in numerous streams on southern POW in 1994; ADF&G began a similar program on two POW systems in 1997; and Thorne Bay Ranger District began their counts on northern POW in 1999.

Although, there are no programs currently funded by the Office of Subsistence Management, Fisheries Information Services (FIS) program to improve assessment of steelhead on POW/Kosciusko, the USDA Forest Service funded and worked cooperatively with ADF&G biologists, during the spring of 2004, on a pilot population study of 12 Mile Creek. 12 Mile Creek is a system that is typical of many the small to moderate-sized streams on POW. The pilot study evaluated the effectiveness of proposed study designs for assessing steelhead populations on the

streams of POW, particularly testing the effectiveness of capture methods for steelhead and using the index snorkel counts for recapture efforts. The pilot project was done in preparation for an FIS project that may be funded starting in FY2005.

Steelhead were captured using both a weir and other sampling methods (seining, rod and reel, and dip nets), sampled for length and scales, tagged with one of two different color Floy spaghetti tags to differentiate capture method (white for weir capture; yellow for other methods), and sampled twice weekly by index snorkel surveys. Although an unknown number of steelhead moved upstream because of a high flow event during weir construction, 82 steelhead were passed upstream following completion of the weir from early April through early June.

Excellent visibility and lower water conditions allowed for successful snorkel surveys, which yielded both marked and unmarked steelhead through the entirety of the run. While visual sightings via snorkeling were found to be successful for "re-captures", a weir proved to be necessary for tagging a sufficient number of fish during the initial marking sessions to obtain a reliable population estimate. The pilot study on 12 Mile Creek indicated that mark-recapture using only seines and angling methods was largely unsuccessful, inefficient, and ineffective. When these techniques are combined with visual sightings as a re-capture method, the resulting population estimates had large variances and low precision. ADF&G biometricians indicated that a minimum number of seven re-captures were necessary to calculate a population estimate with any degree of statistical reliability.

Index counts normally begin mid to late April. These surveys are conducted weekly during the peak of the spawning season and peak counts are assumed to be indices of steelhead abundance. Each system is normally surveyed until counts drop below the highest count observed. If conditions are unsafe for survey, then the system is surveyed as soon as it is deemed safe enough to do so. **Table 1** shows that steelhead index escapement counts are highly variable from one year to the next. ADF&G surveys yield similar results but occurred over a shorter time period. It is not uncommon for index escapement counts to unpredictably double or to drop to half of the prior year level in consecutive years. Weather and water conditions, along with observer bias, can affect these surveys. Annual index counts, many of which record fewer than 50 fish, suggest that steelhead returns to a number of systems on POW are small.

How well these counts indicate trends in abundance for the majority of POW systems surveyed remains in question because very little data has been gathered to relate the peak counts obtained by snorkel survey teams to the total number of steelhead in the spawning run. Index counts from the pilot study on 12 Mile Creek ranged from 15% to 86% of the actual number of tagged fish above the weir. With large numbers of steelhead (84% to 97% of the total index counts from late April through most of May) being observed in a 100 yard area upstream of the weir, held up by low flows during their downstream migration, these index percentages are most likely higher than they would be if the steelhead were more able to move through the lower drainage.

Studies were also conducted at Sitkoh Creek (located on Chichagof Island) during 2003 to compare the number of adult steelhead observed during snorkel survey counts to the corresponding weir count. The regularly scheduled snorkel team from Sitka conducted four surveys after the weir was installed and on average saw 42% of the upstream weir count. For comparison purposes an additional survey team from Juneau conducted a survey one day

Table 1 – Forest Service and ADF&G peak index counts for select steelhead systems on Prince of Wales Island.[1]

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Harris	94	151	127	104	156	192	80	100	188	196	122
Trocadero	18	30	21	18	4	28	22	9	43	21	15
Cable	34	52	24	26	10	31	7	8	30	37	20
Maybeso	6	19	17	6	19	13	1	13	6	14	6
Dog Salmon	50	13	6	15	14	17	14	16	ns	36	ns
12 Mile		40	33	28	20	42	5	23	47	52	66
Nutkwa				32	42						
Black Bear						51	24	ns	18	35	ns
Eagle/Luck				90	56	118	82	ns	34	ns	67
Big Ratz								17	19	ns	45
Shaheen							33	34	32	ns	33
Sal							3	4	21	ns	0
Rio Beaver											28
Staney[2]											39
Little Ratz											2

[1] Note: Harris River is jointly surveyed by Craig Ranger District and ADF&G. Eagle/Luck is surveyed by ADF&G. Big and Little Ratz, Shaheen, Sal, Rio Beaver, and Staney all surveyed by Thorne Bay Ranger District. All other systems listed surveyed by Craig Ranger District. (ns=not surveyed)

[2] This survey was only on a portion of South Fork Staney, which is a tributary draining into upper Staney Creek.

following the Sitka Team and saw 62% of the weir count during their snorkel survey. The differences between these two surveys can in part be explained by the larger estimate made by the Juneau team of steelhead holding immediately above the weir. Like 12 Mile, these percentages may be higher than percentages for systems without weirs, due to large numbers of steelhead holding immediately above the weir (Harding 2004).

With a minimum size restriction of 36-inches, very few steelhead are available for harvest. **Table 2** displays the percentage breakout by length of steelhead sampled from the Karta River and 12 Mile Creek on POW. The percentage of steelhead (n = 1,125) 36-inches and larger is only 0.7%. Since these lengths come only from two drainages on POW, the actual length composition may not be fully representative for the other POW/Kosciusko systems.

Although information on abundance is limited, stock status of POW/Kosciusko steelhead appears stable over the past decade. Prior to 1994, steelhead abundance throughout southeast, including POW/Kosciusko, was in decline.

Table 2 – This table is a summary of the length composition for 1,125 steelhead sampled from the Karta River (n = 1,031) and 12 Mile Creek (n = 94) on Prince of Wales Island. Lengths are rounded to the nearest inch. (Harding & Jones 1993; Hoffman et al 1990)

Length (inches)	Number	Percent	Cumulative Percent
19	4	0.4	0.4
20	3	0.3	0.7
21	0	0.0	0.7
22	0	0.0	0.7
23	1	0.1	0.8
24	5	0.4	1.2
25	23	2.0	3.2
26	96	8.5	11.8
27	111	9.9	21.6
28	87	7.7	29.4
29	108	9.6	39.0
30	119	10.6	49.6
31	193	17.2	66.7
32	189	16.8	83.5
33	88	7.8	91.3
34	56	5.0	96.3
35	34	3.0	99.3
36 and greater	8	0.7	100.0
Total	1125	100.0	

Harvest History

POW is the third largest island in the United States and the second largest island in Alaska (7,174 square kilometers). There are 11 communities spread out across the northern three-quarters of POW (Map 1). According to the 2000 census, a total of 3,907 people reside on POW and Kosciusko. The communities vary in population from 35 persons living in Point Baker to 1,397 persons residing in the island's largest community Craig. (DCED 2002) Logging activity over the past 50 years has resulted in the construction of the most extensive road system in Southeast Alaska. The POW road system includes over 1,609 kilometers of road and enters every major drainage on the northern two-thirds of the island. The current road system has opened up areas formerly without roads that were rarely fished. In addition, this road system is connected to the Alaska State Marine Highway Transportation System with a ferry terminal facility located at Hollis. (Hoffman et al. 1990) Currently, the Inter-island Ferry Authority provides twice daily, round trip service between Hollis and Ketchikan, with plans for another ferry to provide daily service between Coffman Cove and Petersburg/Wrangell in 2006.

Kosciusko is located off the northwestern shore of POW. There is only one community, Edna Bay, located on Kosciusko (Map 1). Edna Bay was first settled as a logging camp in 1943. Following the completion of timber harvest, along with the sale of state selected lands during

the 1980s, the small community has become more tied to commercial fishing than logging. According to the 2000 census, a total of 49 people, reside in 19 households, in Edna Bay (DCED 2002). Construction of a road system, located on the southwestern portion of Kosciusko, resulted from the logging activity of the early 1940s through the late 1960s. The Kosciusko road system includes approximately 69 kilometers of road.

Both non-native and indigenous people have harvested trout and steelhead throughout the region. Prior to state regulatory changes in 1994, statewide harvest surveys estimated relatively large steelhead harvests across Southeast. Goldschmidt and Haas (1998) documented use of trout by Tlingit all the way from Skagway to Saxman. The Tlingit name for steelhead is *Aashat* (written *ah shut* in Emmons [1991]). Trout fishing occurred at least in the winter, spring, and fall and was accomplished using a variety of gear, including weirs, spears, baskets/traps, lines with small wooden hooks, and nets. (Emmons 1991, Goldschmidt & Haas 1998)

Subsistence Harvest:

No steelhead have been reported on ADF&G subsistence permits from 1985 to 2001 (Zadina 2002). There was no reported harvest of steelhead on POW during the 2002 Federal subsistence fishery. The spring 2003 POW Federal steelhead fishery resulted in 76 Federal permits issued and a reported harvest of 24 steelhead from POW systems. Twelve permits reported harvesting steelhead with one permit reporting the harvest of a household limit (five steelhead). The winter 2003 POW Federal steelhead fishery resulted in ten permits issued. Only two permits reported fishing effort with a reported harvest of two steelhead. The 2004 POW/Kosciusko Federal steelhead fishery resulted in 40 permits issued with a reported harvest of 26 steelhead. Nine permits reported harvesting steelhead with three permits reporting the harvest of a household limit. Permit returns have been one hundred percent for these fisheries. (USDA Forest Service 2004)

During the spring 2003 Federal fishery, all of the reported harvest came from the three largest producing road accessible river systems (Thorne, Klawock and Staney). The winter 2003 fishery only reported harvest from the Klawock River. Following the Customary and Traditional use determinations revision for POW waters by the Board during December 2003, some harvest was reported during the Spring 2004 fishery from other larger road accessible systems (Harris River, Eagle/Luck Creek, and Karta River) as well as those reported in past fisheries. All harvest from each system was well below the ten percent annual exploitation rate as suggested by Begich (1998).

Based on concerns expressed by ADF&G Division of Sportfish managers, the local Federal manager restricted harvest in 21 small road accessible steelhead streams by setting the following permit conditions: 36-inch minimum size limit, two fish annual limit per household, and prohibiting the use of spears. These restrictions were maintained on two drainages during the 2003 winter fishery, and three more drainages were added during the 2004 spring fishery. No harvest was reported from any small road accessible or small remote systems during any of the three fisheries.

Table 3 shows a breakdown of permits issued and harvest by community. It is unknown why there are discrepancies between numbers reported through the household harvest surveys

and reported harvest on Federal permits. Factors may include: changes in the communities' population following the survey, the availability of access to alternate resources (i.e., subsistence halibut fishery), and some illegal harvests by households within the communities which harvest regardless of permit requirement (Turek 2004). A study by ADF&G Subsistence Division (led by Mike Turek) is currently attempting to delineate reasons for the differences between reported harvest and the household survey reports.

Table 3 – This table lists Prince of Wales Island communities, number of households potentially harvesting steelhead, estimated harvest of steelhead by community, year each community was surveyed, number of Federal steelhead permits issued for each fishery by community, and the number of steelhead harvested with a Federal permit by community.

Community	Estimated Houses Harvesting[1]	Estimated Steelhead Harvest[1]	Survey Year	Permits Spring 2003	Reported Harvest	Permits Winter 2003	Reported Harvest	Permits Spring 2004	Reported Harvest
Coffman Cove	11	69	1998	3	0	2	0	1	0
Craig	33	211	1997	25	9	4	0	10	10
Edna Bay	0	0	1998	2	0	0	0	2	0
Hollis	1	1	1998	3	2	1	1	2	6
Hydaburg	21	172	1997	1	0	0	0	2	0
Kasaan	1	3	1998	4	0	0	0	1	1
Klawock	29	226	1997	20	7	2	1	6	7
Naukati	1	1	1998	2	0	0	0	0	0
Point Baker	5	34	1996	0	0	0	0	1	0
Port Protection	5	37	1996	0	0	0	0	0	0
Thorne Bay	10	16	1998	16	6	1	0	16	2

[1] ADF&G 2000a

Sport Harvest:

From 1978 through 1982, the daily bag limit and possession limit was one steelhead per day. Beginning with the 1983 season, the possession limit was increased to two steelhead (Jones 1984). Steelhead sport harvests on POW generally increased from the late 1970s through 1991, and then began to decline. Harvest on POW peaked in 1987 at 1,950 fish. (Didier et al. 1990; Howe et al. 2001) **Table 4** shows the yearly estimated harvests of steelhead for POW and for Southeast Alaska as estimated by the statewide harvest survey (SWHS).

As fishery managers and participants reported lower escapements, regulations prohibiting steelhead harvests in the Situk River started in 1991. In 1992, steelhead harvest was prohibited in 24 popular systems (12 of which are located on POW) by Emergency Order, and in 1993, the Situk and 47 other systems were closed to steelhead harvest. In 1994, the Alaska Board of Fisheries enacted conservative regulations for steelhead in Southeast Alaska, and since 1994, anglers have been limited region wide to an annual harvest limit of two steelhead with a minimum size limit of 36-inches (Johnson and Jones 2000). Under the new regulations, the estimated sport harvest on POW has been less than the estimated 136 steelhead harvested in 1994. Total estimated catch has increased and was estimated at 4,104 steelhead during 2000 (Walker et al. 2003).

The prohibition against bait has likely reduced mortality from catch-and-release fishing.

Table 4 – Steelhead harvest by year for Prince of Wales sport fishery, Southeast Alaska sport fishery, and southeast Alaska commercial fishery. (PSCNBTC 1991; Didier et al 1990; Howe et al 2001; Walker et al *In prep*)

Year	Estimated POW Sport Harvest	SE AK Sport Harvest	Percent of Total SE sport harvest by POW	Commercial Harvest[1]	Commercial Harvest for Districts 1-6	Percent Total Commercial Harvest
1969				2414	1876	78
1970				2401	1354	56
1971				1802	914	51
1972				1653	747	45
1973				1836	1163	63
1974				1940	1371	71
1975				533	410	77
1976				1027	431	42
1977	357	1750	20	963	520	54
1978	660	1618	41	1610	1116	69
1979	373	1424	26	1031	754	73
1980	1445	2769	52	1412	1122	79
1981	362	1537	24	934	625	67
1982	618	2368	26	1989	1408	71
1983	1115	3469	32	4074	3741	92
1984	1698	4160	41	5390	4716	87
1985	1108	3088	36	7112	6558	92
1986	1834	4722	39	11540	10806	94
1987	1950	4677	42	3621	3205	89
1988	831	4309	19	4339	3786	87
1989	1277	5409	24	3209	2685	84
1990	773	4274	18	3309		
1991	1510	4632	33			
1992	436	2439	18			
1993	127	1249	10			
1994	114	685	17			
1995	82	233	35			
1996	0	159	0			
1997	39	243	16			
1998	32	119	27			
1999	56	319	18			
2000	12	180	7			
2001	39	258	15			

[1] Since 1994, reported steelhead by-catch has been approximately 50 each year from the troll fishery. Numbers taken in net fisheries are unknown, as these fish may only be retained for personal use and are not required to be off-loaded and counted.

Published mortality studies suggest a 2% to 3% mortality rate for catch and release fishing with artificial lures. This rate may vary, dependent on the anatomical location where the fish was hooked, how long the fish was played, how the fish was handled by the angler, how long the fish was kept out of the water, as well as how long the fish has been in the system (i.e., kelts tended to have lower mortality rates than fish just entering from estuarine areas). To be conservative, managers commonly assume a hooking mortality of 5% for fish caught with artificial lures (Hooten 2001, ADF&G 2002a).

Commercial Harvest:

Commercial fishing by-catch of steelhead occurs, and the reported harvest has ranged from a low of 533 in 1975 to a high of 11,540 in 1986 for all of Southeast Alaska. The majority of the catch, 65%, has occurred in the gillnet fisheries and the least, 1%, in the troll fisheries (PSCNBTC 1991, Lynch 2002). Table 4 shows commercial harvests of steelhead in Southeast Alaska and Districts 1-6 (all surround POW) by year. These values are conservative because they were reported by fish buyers and do not include steelhead that were caught but not sold or sold and misidentified as other species (PSCNBTC 1991, Lohr & Bryant 1999). Since 1994, the commercial sale of purse seine caught steelhead has been prohibited, but the fish may be retained for personal use. Steelhead caught in the commercial troll fishery can legally be sold. Fewer than 50 recorded landings per year have occurred in the troll fisheries since 1997 (Lynch, 2002). There is uncertainty with these recent estimates, as net-caught steelhead retained for personal use are not documented.

Based on coded wire tag data, from all recovered tags (about 250 recovered from nearly 800 heads sent into the Juneau tag lab), it is suggested that steelhead by-catch is composed of mixed stocks, mainly British Columbia fish (ADF&G 2002b). Since 1980, British Columbia, Washington, Oregon, Idaho, California, and Alaska have clipped all hatchery reared steelhead, but have not coded wire tagged all fish (Lynch 2002). For non-clipped steelhead or those with a clipped adipose fin, but no tag, exact origin is not known. There have been no attempts to systematically tag wild fish in Southeast Alaska systems, so Alaskan stocks may not be accurately represented by the coded wire tag data (Jones 1994). Origin can possibly be assumed by run timing. Since the majority of steelhead runs in Southeast occur in the spring and the majority of Southeast commercial fisheries occur in the summer, it is assumed that local steelhead may not be as susceptible to catch during their spawning migration (Lynch 2002). The majority of the commercial harvest is from Districts 1, 4, and 6. While harvest for Districts 1 and 4 have tended to be highest in mid to late August, harvest in District 6 is highest in June, which may suggest the interception of out-migrant kelts from POW and other nearby Southeast systems (PSCNBTC 1991).

Effects of the Proposal

This proposal would restrict the Federal subsistence harvest of steelhead on POW/Kosciusko, and reverse the Board's decision establishing the current regulation.

Prior to the Federal regulatory change, steelhead harvest was identified by community harvest surveys. In order to improve harvest assessment information and document this harvest, the minimum size limit was removed under the terms of a Federal permit to track previously "non-legal" subsistence steelhead harvest. The Board's action in December 2002 was designed to accommodate harvests as documented in the community harvest surveys. An annual household limit of two fish over 36-inches does not meet subsistence users documented use of seven steelhead per household for the households who reported using them (Paige 2002). This would be an unnecessary restriction to subsistence users. Although reported harvests have been low, permit returns have indicated that some households have harvested an annual limit in the spring fishery (USDA Forest Service 2004).

With a minimum size limit of 36-inches, only 0.7% of the steelhead population would be available for harvest, which would not provide for subsistence uses (SERAC 2000, 2001, 2002, 2003). Harvest opportunity for Federally qualified subsistence users would be greatly reduced, and catch and release mortality may increase with a minimum size limit. Based on the low reported harvests from the Federal fisheries, little or no effects would result for other user groups by restricting the fishery.

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Appendix A – Remote PWI/Kosciusko steelhead systems, with Fall steelhead systems italicized.

Remote systems	
Nichols Creek	Monie Creek
Maclean Arm	Tlevak Str. System
Hessa Bay systems	*Karta River*
Johnson Cove/Lake system	*Old Franks Creek*
Essowah Inlets	Indian Creek
Kugel Creek	Chuck Creek
Miller Creek	Mabel Creek
Paul Creek	Karta Saltchuck Creeks
Klakas Inlet/Creek	*Salmon Bay Creek*
Nutkwa	Trout Creek
Hetta Inlet/Creek	Shipley Creek
W. Arm Cholmondley	Sutter Creek
Kasook Inlet/Creek	Calder Bay System
Devil Lake Creek	Survey Creek
Clover Bay/Creek	Manhattan Creek
Sunny Cove/Creek	Waterfall Creek
Old Tom Creek	Paul Young Creek
Cabin Creek	*Hunter Bay Creek*
Kegan Lake/Creek	Eek Creek
Creek N. of Ulloha	Lagoon Creek

Appendix B – PWI steelhead drainages accessible by road, with Fall steelhead systems italicized.

Road access small (no estimate or estimate <150 returning adults)	Road access large (estimate of >150 returning adults)
Dog Salmon Creek	12 Mile Creek
Rock Creek	Harris River
Maybeso Creek	Natzahini Creek
Crab Creek	Cable/Trocadero Creeks
Black Bear Creek	*Klawock River/Lake*
Little Ratz Creek	*Eagle Creek/Luck Creek*
Port Saint Nicholas Creek	*Sweetwater Lake Drainages (Includes Logjam, Hatchery, and Sweetwater Outlet)*
Shaheen Creek	*Staney Creek*
Big Ratz Creek	*Sarkar Rapids*
Naukati Creek	Steelhead Creek
Flicker Creek	Hydaburg River
Alder Creek	*Thorne River*
Buster Creek	Shinaku Creek
108 Creek	
Turn Creek	
El Cap Creek	
Red Lake/Creek	
Yatuk Creek	
Exchange Creek	
Big Creek	
Sal Creek	

FP05-30 Executive Summary	
General Description	Liberalize harvest regulations. (Originator: John Littlefield)
Proposed Regulation	**Southeastern Alaska Area – Trout, Dolly Varden & Grayling** *§___.27(i)(13)~~(xvi) In Baranof Lake, Florence Lake, Hasselborg Lake and River, Mirror Lake, Virginia Lake, and Wilson Lake, in~~* ***In*** *addition to the requirement for a ~~Federal~~ subsistence fishing permit, the following restrictions for the harvest of Dolly Varden, cutthroat trout,* ***brook trout, grayling,*** *and rainbow trout apply:* *(A) ~~The daily harvest and possession limit is 10~~* ***For the harvest of*** *Dolly Varden****, there is no harvest limit, closed season, or size limit.*** *~~of any size~~.* *(B)* ***For the harvest of cutthroat and rainbow trout*** *~~The~~ the daily harvest ~~and possession~~ limit is six* ***and the possession limit is 12*** *~~cutthroat or rainbow trout~~ in combination.* ***There is no size limit or closed season. A rainbow trout is defined as a fish of the species (Oncorhyncus mykiss) with an overall length less than 22".*** *~~You may only retain fish between 11" and 22". You may only use a rod and reel without bait.~~* ***(C) For the harvest of brook trout, the daily harvest limit is 20 per day with a possession limit of 40. There is no size limit or closed season.*** *(D) For the harvest of grayling, the daily harvest limit is 20 per day with a possession limit of 40. There is no size limit or closed season.* *(E) You may only use a rod and reel without bait unless the use of bait is specifically permitted in 5 AAC47.* *~~(xvii) In all waters, other than those identified in paragraph (i)(13)(xvi) of this section, in addition to the requirement for a subsistence fishing permit, you may harvest Dolly Varden and cutthroat and rainbow trout in accordance with the seasons and harvest limits delineated in the Alaska Administrative Code, 5 AAC 47. You may only use a rod and reel without bait unless the use of bait is specifically permitted in 5 AAC 47.~~*

FP05-30 Executive Summary	
Region 1 - Southeast Regional Council Recommendation	**Support with modification** to provide a harvest limit for Dolly Varden, and reduce possession limits for grayling and brook trout.
Interagency Staff Committee Recommendation	The Interagency Staff Committee did not reach consensus, resulting in a majority and minority recommendation. Option A: **Support with modification**, consistent with the recommendation of the Southeast Regional Advisory Council, to provide a harvest limit for Dolly Varden, and reduce possession limits for grayling and brook trout. Option B: **Oppose** the proposal, contrary to the recommendation of the Southeast Regional Advisory Council.
ADF&G Comments	The Federal Subsistence Board meeting book is being published prior to development of final recommendations and comments by the Alaska Department of Fish and Game. This information will be available on the Department's website by January 4, 2005. See the ADF&G homepage, under the headings of "highlights" and "regulations", at http://www.adfg.state.ak.us. For those without computer access, please call 1-907- 267-2360 for further information.
Written Public Comments	**None.**

REGIONAL ADVISORY COUNCIL RECOMMENDATIONS

SOUTHEAST REGIONAL COUNCIL

Support with modification to provide a harvest limit for Dolly Varden and to reduce possession limits for grayling and brook trout. Similar to proposal FP05-28, this proposal would recognize existing subsistence harvests of Dolly Varden, cutthroat trout, brook trout, grayling, and rainbow trout and establish Federal subsistence harvest and possession limits for these species. The Council reviewed harvest data from ADF&G Division of Subsistence household surveys. These data show that communities throughout the region make subsistence use of these species. As we would expect, harvest levels for Dolly Varden, cutthroat and rainbow trout, were higher than the less widely distributed and less abundant brook trout and grayling. The Council reviewed sport harvest and catch data for recent years. Sport harvest and catch and release mortality is significant in the region and may be much higher than subsistence harvests in many areas. A number of Council members were concerned with wasteful catch and release practices; for these Council members catch and release, since fish are killed but not eaten, is not an ethical practice.

The Council agreed with the suggested staff modification of the original proposal to provide a harvest and possession limit for Dolly Varden for conservation purposes.

The Council believes that the modified proposal presents no conservation concerns. If adopted, it will recognize existing subsistence practice. The data presented strongly support adoption of this modified proposal. This proposal will benefit subsistence users by allowing take of these species. There will be no significant effects on non-subsistence harvesters. The Council is aware that there may be management situations where additional harvest restrictions are needed to protect these fish species. These may be established through in-season management with consultation with the Council. The modified proposed regulation should read:

> *§___.27(i)(13)(xvi) ~~In Baranof lake, Florence Lake, Hasselborg Lake and River, Mirror Lake, Virginia Lake, and Wilson Lake, you may~~* ***In*** *addition to the requirement for a Federal subsistence fishing permit, the following restrictions for the harvest of Dolly Varden, cutthroat trout,* ***brook trout, grayling,*** *and rainbow trout apply:*
>
> *(A) The daily household harvest and possession limit is ~~10~~ 20 Dolly Varden,* ***there is no*** *~~harvest limit,~~* ***closed season or size limit.*** *~~of any size.~~*
>
> *(B) The daily household harvest and possession limit is 20* ***brook trout; there is no*** *~~size limit or closed season~~* ***closed season or size limit.***
>
> *(C) The daily household harvest and possession limit is 20* ***grayling; there is no*** *~~size limit or closed season~~* ***closed season or size limit.***
>
> *(D)* ***For the harvest of cutthroat and rainbow trout*** *~~The~~ the* ***household*** *daily harvest ~~and possession~~ limit is six* ***and the household possession limit is 12*** *~~cutthroat or rainbow~~ trout in combination.* ***There is no size limit or closed season. A rainbow trout is defined as a fish of the species (Oncorhnyncus mykiss) with an overall length less than 22".*** *~~You may only retain fish between 11" and 22". You may only use a rod and reel without bait.~~*

(E) You may only use a rod and reel without bait unless the use of bait is specifically permitted in 5 AAC 47.

~~*(xvii) In all waters, other than those identified in paragraph xxx of this section, in addition ot the requirement for a subsistence fishing permit, you may harvest Dolly Varden and cutthroat and rainbow trout in accordance with the seasons and harvest limits delineated in the Alaska Administrative Code, 5 AAC 47. You may only use a rod and reel without bait unless the use of bait is specifically permitted in 5 AAC 47.*~~

INTERAGENCY STAFF COMMITTEE RECOMMENDATION

The Interagency Staff Committee did not reach consensus, resulting in a majority and minority recommendation.

Option A:

Support with modification, consistent with the recommendation of the Southeast Regional Advisory Council, to provide a harvest limit for Dolly Varden, and reduce possession limits for grayling and brook trout.

The modified proposed regulation should read:

§___.27(i)(13)(xvi) In ~~Baranof Lake, Florence Lake, Hasselborg Lake and River, Mirror Lake, Virginia Lake, and Wilson Lake,~~ addition to the requirement for a Federal subsistence fishing permit, the following restrictions for the harvest of Dolly Varden, ***brook trout, grayling,*** *cutthroat trout, and rainbow trout apply:*

(A) The daily ***household*** *harvest and possession limit is ~~1~~20 Dolly Varden ~~of any size~~****, there is no closed season or size limit;***

(B) ***The daily household harvest and possession limit is 20 brook trout, there is no closed season or size limit;***

(C) The daily household harvest and possession limit is 20 grayling, there is no closed season or size limit;

(D) For the harvest of cutthroat and rainbow trout, ~~T~~*the daily* ***household*** *harvest ~~and possession~~ limit is six* ***and the household possession limit is 12*** *~~cutthroat or rainbow trout~~ in combination****. There is no size limit or closed season. A rainbow trout is defined as a fish of the species (Oncorhyncus mykiss) with an overall length less than 22". You may only retain fish between 11" and 22".*** *~~You may only use a rod and reel without bait.~~*

(E) You may only use a rod and reel without bait unless the use of bait is specifically permitted in 5 AAC 47.

~~*(xvii) In all waters, other than those identified in paragraph (i)(13)(xvi) of this section, in addition to the requirement for a subsistence fishing permit, you may harvest Dolly Varden and cutthroat and rainbow trout in accordance with the seasons and harvest limits delineated in the Alaska Administrative Code, 5 AAC 47. You may only use a rod and reel without bait unless the use of bait is specifically permitted in 5 AAC 47.*~~

Justification

The majority recommendation would legalize the opportunity for Federally-qualified subsistence users to harvest the quantities of Dolly Varden, brook trout, grayling, rainbow and cutthroat trout they need for subsistence purposes. The modified harvest limits will more closely resemble long-term customary and traditional use patterns. Unlimited harvest of Dolly Varden, as requested by the proponent, could lead to conservation concerns for that species. The modified harvest limit for this species is consistent with the proposed limits for brook trout and grayling.

Considerable concern has been expressed over the potential effects of eliminating the size slot limit for cutthroat trout. Under current State and Federal regulations, only fish 11-22 inches in length may be retained. Although studies have documented reduced cutthroat populations at a number of Southeast Alaska localities, the influence of subsistence harvest in such declines is unclear, as many systems have been targeted by resident and non-resident sport anglers. The mortality rate associated with cutthroat trout catch and release sport angling is estimated at 5% of the total sport catch in Southeast Alaska [1996-2002 ADF&G annual cutthroat trout catch estimates for Southeast Alaska ranged from 29,736-46,938 fish (Brookover, 2004)]. Therefore, if harvest of fish less than 11 inches is a concern, the substantial sport fishery must be curtailed before restricting the take by Federally-qualified subsistence users.

The Council is aware that there may be management situations where additional harvest restrictions are needed to protect these fish species. The Council agrees that these protections may be established through in-season management action following consultation with the Council.

Option B

Oppose the proposal, contrary to the recommendation of the Southeast Regional Advisory Council.

Justification

The minority view is to oppose this regulatory change because liberalizing subsistence harvests of resident fish on a region-wide basis could place small populations at risk from over-harvest. Small populations of rainbow and cutthroat trout reside in many streams and lakes throughout Southeast Alaska that could not support the harvest limits contained in this proposal. The small introduced populations of grayling and brook trout may also be over-harvested with adoption of this regulation. Past regulatory actions by the Federal Subsistence Board in 2001 indicated there were conservation concerns with a region-wide approach to liberalizing subsistence harvests of

resident trout due to insufficient baseline data for these species. There is currently very little population monitoring of resident fish populations in Southeast Alaska by either the State or Federal agencies. It is unclear how in-season management adjustments would be accomplished in the absence of an active fishery monitoring program on these species.

It is recommended that adjustments to subsistence harvests of resident fish should be approached in smaller geographic or area specific units to provide greater safeguards to protecting small stocks and allow greater flexibility in setting harvest limits. This may require conducting projects designed to gather local traditional knowledge about harvest practices and could provide insights on setting appropriate harvest levels for these species. In areas where non-subsistence harvests conflict with meeting local subsistence needs then appropriate regulatory actions should be considered as well.

COMMENTS

ADF&G

The Federal Subsistence Board meeting book is being published prior to development of final recommendations and comments by the Alaska Department of Fish and Game. This information will be available on the Department's website by January 4, 2005. See the ADF&G homepage, under the headings of "highlights" and "regulations", at http://www.adfg.state.ak.us. For those without computer access, please call 1-907- 267-2360 for further information.

PUBLIC

None.

STAFF ANALYSIS
FP05-30

ISSUES

Proposal FP05-30, submitted by John Littlefield of Sitka, requests changes to the existing Federal subsistence regulations for trout, char, and grayling in the Southeastern Alaska Area. Changes are proposed for harvest and size limits. The proponent states that subsistence users have a long history of utilizing trout and that the existing regulations do not provide for their needs.

DISCUSSION

This proposal was submitted out of concern that existing regulations do not provide enough opportunity for rural residents of Southeastern Alaska to harvest trout, char and grayling for subsistence purposes. The Federal subsistence fishing regulations allow for the taking of trout and char with a subsistence permit. Except for six lakes mentioned in the Federal regulations (see below), the Federal harvest limits mirror the existing State sport fishing harvest limits. The proponent is concerned that subsistence users have a long history of utilizing trout and their needs are greater than the existing limits. The proponent states that many want to eat trout, and that the best trout for eating are not the larger fish in the slot limits. Most subsistence users prefer the smaller trout of about 12-inches. The proponent is concerned that subsistence users who smoke or dry trout need to have limits in place that more closely reflect their use and need. The proponent states that the proposed limits will more closely resemble contemporary use patterns that have been based on long term customary and traditional use.

Under Federal regulations, a subsistence fishing permit is not required for harvesting fish other than salmon, trout, char, and eulachon in Subdistricts 1-C and 1-D . Since grayling are not a member of those genera, then Federally qualified users may harvest grayling without a subsistence fishing permit under the existing Federal regulations in the Southeastern Alaska management area. There are general Federal regulations regarding methods and means, seasons and harvest limits for grayling in Southeastern Alaska and are displayed below [.27 (17) i, ii]

Brook Trout (*Salvelinus fontinalis*) are a char, and are not native to Alaska. All populations in Southeastern Alaska were introduced in the last century. Since they are a char, Federally qualified users are required to have a Federal permit to harvest them, there are general Federal regulations regarding methods and means, seasons or harvest limits[.27. (17) i, ii] Grayling (*Thymallus articus*) are native to Alaska except for Southeast Alaska where they were introduced. All grayling and brook trout populations in Southeastern Alaska were introduced in the last century.

Existing Federal Regulation

> *§___.27 (17) Unless specified otherwise in this section, you may use a rod and reel to take fish without a subsistence fishing permit. Harvest limits applicable to the use of rod and reel to take fish for subsistence uses shall be as follows:*

(i) If you are required to obtain a subsistence fishing permit for an area, that permit is required to take fish for subsistence uses with rod and reel in that area. The harvest and possession limits for taking fish with a rod and reel in those areas are the same as indicated on the permit issued for subsistence fishing with other gear types;

(ii) Except as otherwise provided for in this section, if you are not required to obtain a subsistence fishing permit for an area, the harvest and possession limits for taking fish for subsistence uses with a rod and reel are the same for taking fish under State of Alaska subsistence fishing regulations in those same areas. If the State does not have a specific subsistence season and / or harvest limit for that particular species, the limit shall be the same as for taking fish under State of Alaska sport fishing regulations.

§___.27(i)(13) (xvi) In Baranof Lake, Florence Lake, Hasselborg Lake and River, Mirror Lake, Virginia Lake, and Wilson Lake, in addition to the requirement for a Federal subsistence fishing permit, the following restrictions for the harvest of Dolly Varden, cutthroat, and rainbow trout apply:

(A) The daily harvest and possession limit is 10 Dolly Varden of any size;

(B) The daily harvest and possession limit is six cutthroat or rainbow trout in combination. You may only retain fish between 11" and 22". You may only use a rod and reel without bait.

(xvii) In all waters, other than those identified in paragraph (i)(13)(xvi) of this section, in addition to the requirement for a subsistence fishing permit, you may harvest Dolly Varden and cutthroat and rainbow trout in accordance with the seasons and harvest limits delineated in the Alaska Administrative Code, 5 AAC 47. You may only use a rod and reel without bait unless the use of bait is specifically permitted in 5 AAC 47.

The existing customary and traditional use determinations for Southeastern Alaska can be found in Appendix A. There are no specific C&T determinations for brook trout or grayling in the Southeastern Alaska Management Area. Therefore any rural resident of the State may harvest grayling and brook trout in the Southeastern Alaska Area.

Proposed Federal Regulation

§___.27 (17) Unless specified otherwise in this section, you make use a rod and reel to take fish without a subsistence fishing permit. Harvest limits applicable to the use of rod and reel to take fish for subsistence uses shall be as follows:

(i) If you are required to obtain a subsistence fishing permit for an area, that permit is required to take fish for subsistence uses with rod and reel in that area. The harvest and possession limits for taking fish with a rod and reel in those areas are the same as indicated on the permit issued for subsistence fishing with other gear types;

(ii) Except as otherwise provided for in this section, if you are not required to obtain a subsistence fishing permit for an area, the harvest and possession limits for taking fish

for subsistence uses with a rod and reel are the same for taking fish under State of Alaska subsistence fishing regulations in those same areas. If the State does not have a specific subsistence season and/or harvest limit for that particular species, the limit shall be the same as for taking fish under State of Alaska sport fishing regulations.

§___.27(i)(13)~~(xvi) In Baranof Lake, Florence Lake, Hasselborg Lake and River, Mirror Lake, Virginia Lake, and Wilson Lake, in~~ ***In*** *addition to the requirement for a ~~Federal~~ subsistence fishing permit, the following restrictions for the harvest of Dolly Varden, cutthroat trout,* ***brook trout, grayling,*** *and rainbow trout apply:*

(A) ~~The daily harvest and possession limit is 10~~ ***For the harvest of*** *Dolly Varden****, there is no harvest limit, closed season, or size limit.*** *~~of any size~~.*

(B) ***For the harvest of cutthroat and rainbow trout*** *~~The~~ the daily harvest ~~and possession~~ limit is six* ***and the possession limit is 12*** *~~cutthroat or rainbow trout~~ in combination.* ***There is no size limit or closed season. A rainbow trout is defined as a fish of the species (Oncorhyncus mykiss) with an overall length less than 22".*** *~~You may only retain fish between 11" and 22". You may only use a rod and reel without bait.~~*

(C) For the harvest of brook trout, the daily harvest limit is 20 per day with a possession limit of 40. There is no size limit or closed season.

(D) For the harvest of grayling, the daily harvest limit is 20 per day with a possession limit of 40. There is no size limit or closed season.

(E) You may only use a rod and reel without bait unless the use of bait is specifically permitted in 5 AAC47.

~~(xvii) In all waters, other than those identified in paragraph (i)(13)(xvi) of this section, in addition to the requirement for a subsistence fishing permit, you may harvest Dolly Varden and cutthroat and rainbow trout in accordance with the seasons and harvest limits delineated in the Alaska Administrative Code, 5 AAC 47. You may only use a rod and reel without bait unless the use of bait is specifically permitted in 5 AAC 47.~~

Extent of Federal Public Waters

Federal public waters involved are waters of the Tongass National Forest excluding marine waters.

Note: For purposes of this discussion, the phrase "Federal public waters" is defined as those waters described under 50 CFR 100.3(b).

Customary and Traditional Use Determinations

Customary and Traditional Use Determinations for the Southeastern Alaska Area apply and are listed in Appendix A at the end of the Fisheries Regulatory Review and Recommendation section.

Regulatory History

State Regulatory History

There are no directed State subsistence fisheries for trout, Dolly Varden, brook trout or grayling, although these species incidentally caught in other permitted subsistence fisheries may be kept. Current State sport fishing regulations generally allow ten Dolly Varden char with no size restriction. Rainbow and steelhead trout are different life forms of the same species (*Oncorhynchus mykiss*). In order to differentiate between them for regulatory purposes, the State sport fishing regulations list different size limits. Current State sport fishing regulations generally allow two cutthroat / rainbow trout a day between 11 and 22-inches in length and prohibit the use of bait. Trout larger than 22-inches are regarded as steelhead for regulatory purposes.

In areas of high use (on larger community road systems or heavily used lakes) the harvest limit for Dolly Varden char is reduced to two per day and the minimum size limit for cutthroat and rainbow trout is increased to 14 inches.

Brook trout and grayling have a daily harvest limit of 10 fish and 10 in possession with no minimum size limit under State sportfishing regulations for Southeastern Alaska. Bait is allowed in most systems that support grayling and brook trout.

Alaska Department of Fish and Game (ADF&G) biologists believe that a minimum size restriction for trout is needed to ensure that the majority of trout is able to spawn at least once prior to harvest. This is the rationale used to establish the size slot currently in the State regulations for cutthroat and rainbow trout, 11 to 22 inches.

Federal Regulatory History

The existing Federal regulation displayed above was put into place during the December 2001 Federal Subsistence Board (Board) meeting after deliberating FP01-22. The proposal requested liberalized harvest limits of six trout and ten Dolly Varden per day with no minimum size limits. The Board was concerned that insufficient data existed to liberalize trout harvest limits on a region-wide basis. However the harvest limits for trout were increased in the six lakes based on available data showing large populations. At that time, the Board approved the proposed harvest limit for Dolly Varden, since the requested harvest limit for Dolly Varden was consistent with State regulations. The Board used the State sport fishing regulation for trout in all of the remaining areas as a conservation measure. The Board also required a Federal subsistence permit system to allow harvest to be tracked and evaluated at a finer scale than is currently possible under the State sport fishing harvest survey.

Biological Background

In Alaska the brook trout is an introduced species. Between 1917 and 1950, many rivers, streams, and lakes were stocked in Southeastern Alaska. As far as is known, none of the fish survived in any of the rivers and streams, and few survived in any anadromous lakes. However, the brook trout did survive in a few barren sub-alpine lakes with relatively low food supply, marginal spawning, and year-round low water temperatures. They seem to be well adapted to

these marginal conditions and probably are better suited for these waters than any other fish species. Brook trout are found in Upper and Lower Dewey lakes near Skagway; Salmon Creek Reservoir near Juneau; Green, Heart, Thimbleberry, and Long lakes near Sitka; Crystal Lake near Petersburg; Grace, Ketchikan, Shelocum, and Perseverance lakes in the Ketchikan area; and Emerald Lake (Texas Lake) near Hyder (ADF&G 2004a).

The brook trout populations in several Southeastern Alaska lakes have been evaluated in recent years. Maximum age of fish sampled is nine years. The majority of individuals are younger, with numbers of fish declining rapidly after age five. Populations of brook trout are relatively low in the lakes studied, ranging from estimates of 500 catchable fish in Thimbleberry Lake (10 acres) to about 1,500 fish in Salmon Creek Reservoir (192 acres). The larger reservoirs had 6.4 to 8.4 fish per acre. Stomach content analysis of brook trout indicates they eat everything available, including aquatic and terrestrial insects, zooplankton, snails, and leeches. Brook trout spawn in autumn when temperatures and day length are decreasing. Peak spawning activity in Green Lake was observed in mid-October, with spawning completed by early November (ADF&G 2004a).

Grayling are native to Alaska but are introduced in Southeastern Alaska. Like the brook trout in Southeastern Alaska, they were introduced widely but only seem to have persisted in sub-alpine, non-anadromous lakes. Grayling have evolved many strategies to meet the needs of life in what are often harsh and uncertain environments. Grayling can complete their entire life cycle without leaving a short section of stream or lake (ADF&G 2004b). The following Southeastern Alaska lakes have grayling populations (Brookover 2004): Antler, Beaver, Herman, Chamberlain, Goat, Halfmoon, Tyee, Kane Peak, Little Goat, Manzoni, Marge, Mellen, Minne, Orton, Patching, Snow, and Summit Lakes.

Dolly Varden, rainbow, and cutthroat trout are more widespread throughout Southeast Alaska than brook trout and grayling. There is very limited information of the status of cutthroat and rainbow trout and Dolly Varden populations in Southeastern Alaska. **Table 1** below displays the limited amount of cutthroat, rainbow trout, and Dolly Varden population data from Southeastern Alaska.

Harvest History

Historically, there has been a pattern of year-round trout harvest in many communities throughout Southeastern Alaska. The pattern of Dolly Varden harvest has been less than year-round, but extended at least as early as January and as late as September. Trout continues to be an important subsistence resource, even though it has had to be harvested under sport regulations. In the 1987 harvest study, for instance, approximately 33% of all rural households had a member who harvested trout that year (ADF&G 1989; ADF&G 1991).

Subsistence Harvest

No trout, char, or grayling have been reported harvested on Federal permits since they have been issued for Federal public waters in Southeastern Alaska. **Table 2** (ADF&G 2004) displays the results of household use surveys for trout and char conducted by ADF&G – Subsistence Division for various communities in Southeastern Alaska. Dolly Varden, cutthroat trout, rainbow trout, brook trout, and grayling were all reported to be used by rural households in Southeastern Alaska.

Table 1. Trout Population Estimates from Southeast Alaska (Jones 2000)

System	Species	Year	Abundance	SE*	Comments**	Estimate Type (if known)
Alexander Lake	Cutthroat	1995	2,180	633		In-season mark/recapture
Auke Lake Sea-run	Cutthroat	1999	350	0	**Weir count**	
Baranof Lake	Cutthroat	1994	12,186	888		Multi-year (Jolly-Seber)
Buck Lake (Sitka)	Cutthroat	1993	441	52		In-season mark/recapture
Florence Lake	Cutthroat	1994	10,787	674		Multi-year (Jolly-Seber)
Harvey Lake	Cutthroat	1979	669			Schumacher-Eshmeyer
Hasselborg	Cutthroat	1991	10,413	1,588		Multi-year (Jolly-Seber)
Jims Lake	Cutthroat	1988	2,816			
Lake Eva	Cutthroat	1995	2,154	274		Multi-year (Jolly-Seber)
Lake Eva Sea-run	Cutthroat	1995	2,562	0	**Weir count**	
Little Lake Eva	Cutthroat	1993	380	28		In-season mark/recapture
Lower Wolf Lake	Cutthroat	1987	196		95% CI 125-287	
Margaret Lake	Cutthroat	1996	1,709		95% CI 31%	
McKinney Lake	Cutthroat	1996	3,756	298		In-season mark/recapture
Mirror Lake	Cutthroat	1985	5,633		95% CI 5118-6263	Schumacher-Eshmeyer
Neck Lake	Cutthroat	1998	2,742	243		Multi-year (Jolly-Seber)
Sitkoh Lake	Cutthroat	1997	1,260	221		Multi-year (Jolly-Seber)
Sitkoh Lake Sea-run	Cutthroat	1996	1,442	0	**Weir count**	
Turner Lake	Cutthroat	1994	2,107	148		Multi-year (Jolly-Seber)
Upper Wolf	Cutthroat	1993	1,233	113		In-season mark/recapture
Virginia Lake	Cutthroat	1979	5,631		95% CI 4710-6998	Schumacher-Eshmeyer
Virginia Lake (recent)	Cutthroat	1996	3,620	415		Multi-year (Jolly-Seber)
Wilson Lake	Cutthroat	1993	7,314	807		In-season mark/recapture
Windfall Lake Sea-run	Cutthroat	1997	616	0	**Weir count**	
Young Lake	Cutthroat	1994	1,562	185		In-season mark/recapture
Auke Lake Sea-run	Dolly Varden	1999	6,393	-	**Weir count**	
Lake Eva Sea-run	Dolly Varden	1995	117,821	-	**Weir count**	
Margaret Lake	Dolly Varden	1997	2,866		95% CI 61%	
Mirror Lake	Dolly Varden	1985	10,596		95% CI 9272-12360	Schumacher-Eshmeyer
Sitkoh Lake Sea-run	Dolly Varden	1996	48,252		**Weir count**	
Windfall Lake Sea-run	Dolly Varden	1997	34,074	0	**Weir count**	
Blue Lake (Sitka)	Rainbow	1992	4,708		95% CV 17%	In-season mark/recapture
Second Waterfall (Ktn)	Rainbow	1987	257		95% CI 243-271	In-season mark/recapture

* SE refers to the standard error (one standard deviation)

** CI = Confidence limit; CV = coefficient of variation. These are measures of variation around a mean.

Sport Harvest

Table 3 (Brookover 2004) displays the recent harvest and catch under State sport fishing regulations for the five species in question for Southeastern Alaska. The "catch" columns refer to the total number of fish caught (fish released and fish harvested). The "harvest" columns refer to the total of number of fish kept as harvest. Current records do not show how much of the harvest is by Federally qualified subsistence users, nor from which particular water bodies these harvests come from.

Table 2: Community Harvests in Southeastern Alaska trout, char, and grayling

Community Name	Harvest Year	Resource	Estimated Total Number	Estimated Total Pounds	Mean Pounds per Household	Pounds per Capita	Numbers per Capita	Households in the Community
Angoon	1996	Dolly Varden	213	576	3.58	0.99	0.37	161
Angoon	1996	Cutthroat	33	49	0.30	0.08	0.06	161
Angoon	1996	Grayling	52	37	0.23	0.06	0.09	161
Coffman Cove	1998	Dolly Varden	240	648	8.64	3.04	1.13	75
Coffman Cove	1998	Cutthroat	614	920	12.27	4.32	2.88	75
Coffman Cove	1998	Rainbow	246	492	6.56	2.31	1.15	75
Coffman Cove	1998	Brook Trout	30	42	0.56	0.2	0.14	75
Craig	1997	Dolly Varden	1877	5067	8.33	2.87	1.06	608
Craig	1997	Cutthroat	1560	2341	3.85	1.33	0.88	608
Craig	1997	Rainbow	1093	2186	3.60	1.24	0.62	608
Craig	1997	Brook Trout	204	285	0.47	0.16	0.12	608
Craig	1997	Grayling	35	25	0.04	0.01	0.02	608
Edna Bay	1998	Dolly Varden	62	168	9.90	3.21	1.18	17
Edna Bay	1998	Cutthroat	74	110	6.50	2.11	1.41	17
Edna Bay	1998	Rainbow	11	23	1.33	0.43	0.21	17
Edna Bay	1998	Brook Trout	3	4	0.23	0.08	0.06	17
Elfin Cove	1987	Dolly Varden	208	560	29.49	9.36	3.47	19
Game Creek	1996	Dolly Varden	375	1012	67.50	15.88	5.88	15
Game Creek	1996	Cutthroat	32	49	3.25	0.76	0.50	15
Gustavus	1987	Dolly Varden	760	2051	31.80	13.46	4.99	65
Haines	1996	Dolly Varden	6507	17570	22.30	8.16	2.99	787
Haines	1996	Cutthroat	856	1284	1.63	0.6	0.39	787
Haines	1996	Rainbow	203	407	0.52	0.19	0.09	787
Haines	1996	Grayling	813	569	0.72	0.26	0.37	787
Hollis	1998	Dolly Varden	139	374	6.34	2.41	0.90	59
Hollis	1998	Cutthroat	50	75	1.27	0.48	0.32	59
Hollis	1998	Rainbow	18	36	0.61	0.23	0.12	59
Hollis	1998	Brook Trout	38	54	0.91	0.35	0.24	59
Hoonah	1996	Dolly Varden	2436	6578	23.49	7.38	2.73	280
Hoonah	1996	Cutthroat	376	565	2.02	0.63	0.42	280
Hoonah	1996	Rainbow	62	124	0.44	0.14	0.07	280
Hydaburg	1997	Dolly Varden	198	534	4.08	1.32	0.50	131
Hydaburg	1997	Cutthroat	105	158	1.21	0.39	0.26	131
Hydaburg	1997	Rainbow	223	447	3.41	1.11	0.56	131
Hyder	1987	Dolly Varden	651	1758	45.08	22.57	8.36	39
Kake	1996	Dolly Varden	447	1206	4.85	1.62	0.60	249
Kake	1996	Cutthroat	130	194	0.78	0.26	0.17	249
Kake	1996	Rainbow	24	48	0.19	0.06	0.03	249
Kake	1996	Brook Trout	10	14	0.06	0.02	0.01	249
Kasaan	1998	Dolly Varden	50	135	7.52	3.1	1.14	18
Kasaan	1998	Cutthroat	12	17	0.96	0.4	0.27	18
Klawock	1997	Dolly Varden	1166	3149	10.39	3.72	1.38	303
Klawock	1997	Cutthroat	434	652	2.15	0.77	0.51	303

Table 2 –cont'd-: Community Harvests in Southeastern Alaska trout, char, and grayling

Community Name	Harvest Year	Resource	Estimated Total Number	Estimated Total Pounds	Mean Pounds per Household	Pounds per Capita	Numbers per Capita	Households in the Community
Klawock	1997	Rainbow	177	354	1.17	0.42	0.21	303
Klawock	1984	Grayling	22	33	0.25	0.07	0.03	303
Klukwan	1996	Dolly Varden	386	1041	28.92	9.34	3.57	36
Klukwan	1996	Cutthroat	69	103	2.85	0.92	0.64	36
Klukwan	1996	Rainbow	58	116	3.23	1.04	0.54	36
Klukwan	1996	Brook Trout	7	10	0.27	0.09	0.06	36
Klukwan	1996	Grayling	7	5	0.14	0.04	0.06	36
Metlakatla	1987	Dolly Varden	1072	2893	6.92	1.86	0.69	418
Meyers Chuck	1987	Dolly Varden	460	1242	124.20	41.4	15.33	10
Naukati Bay	1998	Dolly Varden	158	428	6.48	2.92	1.08	66
Naukati Bay	1998	Cutthroat	403	604	9.15	4.12	2.75	66
Naukati Bay	1998	Rainbow	145	290	4.40	1.98	0.99	66
Pelican	1987	Dolly Varden	1887	5095	61.87	21.28	7.88	82
Petersburg	2000	Dolly Varden	2,448.16	6,610.03	6.18	2.24	0.83	1070
Petersburg	2000	Cutthroat	1,266.88	1,900.32	1.78	0.65	0.43	1070
Point Baker	1996	Dolly Varden	99	266	14.01	5.6	2.08	19
Point Baker	1996	Cutthroat	12	18	0.94	0.38	0.25	19
Point Baker	1996	Rainbow	33	66	3.50	1.4	0.69	19
Point Baker	1996	Brook Trout	24	33	1.75	0.7	0.51	19
Port Alexander	1987	Dolly Varden	312	844	22.89	7.92	2.93	37
Port Protection	1996	Dolly Varden	197	531	13.28	5.44	2.02	40
Port Protection	1996	Cutthroat	134	202	5.04	2.07	1.37	40
Port Protection	1996	Rainbow	112	224	5.60	2.3	1.15	40
Port Protection	1996	Brook Trout	24	34	0.84	0.34	0.25	40
Saxman	1999	Dolly Varden	174.79	471.95	4.29	1.24	0.46	110
Saxman	1999	Cutthroat	110	165	1.50	0.43	0.29	110
Saxman	1999	Rainbow	55.75	111.51	1.01	0.29	0.15	110
Sitka	1996	Dolly Varden	4301	11612	3.80	1.36	0.50	3053
Sitka	1996	Cutthroat	1528	2292	0.75	0.27	0.18	3053
Sitka	1996	Rainbow	2455	4911	1.61	0.58	0.29	3053
Sitka	1996	Brook Trout	825	1154	0.38	0.14	0.10	3053
Skagway	1987	Dolly Varden	1132	3057	15.00	5.25	1.94	204
Tenakee	1987	Dolly Varden	471	1272	28.58	13.44	4.98	44
Thorne Bay	1998	Dolly Varden	612	1652	8.10	3.19	1.18	204
Thorne Bay	1998	Cutthroat	770	1155	5.66	2.23	1.49	204
Thorne Bay	1998	Rainbow	309	619	3.03	1.19	0.60	204
Thorne Bay	1998	Brook Trout	57	80	0.39	0.15	0.11	204
Thorne Bay	1998	Grayling	9	6	0.03	0.01	0.02	204
Whale Pass	1987	Dolly Varden	206	556	30.90	10.9	3.77	20
Whale Pass	1998	Cutthroat	49	74	3.70	1.35	0.90	20
Whitestone	1996	Dolly Varden	257	694	16.93	4.9	1.81	41
Whitestone	1996	Cutthroat	129	193	4.72	1.36	0.91	41
Wrangell	2000	Dolly Varden	899.45	2,428.51	1.20	1.24	0.46	747
Wrangell	2000	Rainbow	907.07	1,814.14	2.43	0.93	0.46	747
Wrangell	2000	Cutthroat	3,963.67	5,945.51	7.96	3.04	2.02	747
Wrangell	2000	Brook Trout	91.47	128.06	0.17	0.07	0.05	747
Yakutat	2000	Cutthroat	37	56	0.24	0.09	0.06	234
Yakutat	2000	Dolly Varden	419	1258	5.37	1.98	0.66	234

Table 2 –cont'd-: Community Harvests in Southeastern Alaska trout, char, and grayling

Community Name	Harvest Year	Resource	Estimated Total Number	Estimated Total Pounds	Mean Pounds per Household	Pounds per Capita	Numbers per Capita	Households in the Community
Yakutat	2000	Rainbow	56	111	0.47	0.18	0.09	234
Yakutat	2000	Brook Trout	59	82	0.35	0.13	0.09	234
Yakutat	2000	Grayling	17	17	0.07	0.03	0.03	234
ADF&G. 2004. Community Profile Database (CPDB). Microcomputer database. Internet: www.state.ak.us/adfg/subsist/geninfo/publctns/cpdb.htm. Alaska Department of Fish and Game, Division of Subsistence, Anchorage.								

TABLE 3. Southeast Alaska Regional Sport Harvest and Catch* for Cutthroat trout, Rainbow Trout, Dolly Varden, Grayling, and Brook Trout (Brookover, 2004)

Year	Cutthroat		Rainbow Trout		Dolly Varden		Grayling		Brook Trout	
	Harvest	Catch	Harvest	Catch	Harvest	Catch	Harvest	Catch	Harvest	Catch
1996	4,946	40,918	1,911	13,425	22,447	70,939	303	1,645	223	1,390
1997	3,927	42,197	2,126	27,476	21,772	70,240	0	459	167	767
1998	4,842	42,406	2,542	26,232	21,751	77,924	58	1,712	10	3,445
1999	4,604	29,736	2,196	16,854	16,441	56,092	228	1,206	112	1,294
2000	4,958	46,938	3,029	27,984	25,952	79,717	10	104	153	646
2001	6,391	45,624	1,298	14,095	16,258	65,253	26	35	123	2,040
2002	3,851	38,829	1,559	19,026	15,720	76,430	14	43	387	1,814

*In general, the catch estimates are more prone to error than the harvest estimates. Harvest limits tend to constrain reported harvest but don't have the same effect on catch; people tend to round up versus down, and literature indicates that people tend to exaggerate their catch, particularly for non-memorable fish caught in large numbers. All of these tend to inflate catch estimates to varying degrees.

Commercial Harvest

There are no directed commercial harvests of trout, char or grayling in Southeastern Alaska.

Effects of the Proposal

The effect of this proposal will recognize existing subsistence harvest for grayling, brook trout, Dolly Varden, rainbow, and cutthroat trout in Southeastern Alaska that has not been permitted in the past. It is unclear what effect this proposal will have on harvest opportunities for grayling and brook trout since the existing Federal regulations do not specify methods and means, seasons or harvest limits and are not clear for those species. Brook trout and grayling are found only in a handful of locations in Southeastern Alaska. Having no harvest limit for Dolly Varden could lead to conservation concerns for the species in some locations. Federal in-season managers would have the ability to adjust regulations as needed for conservation and to ensure the Federal subsistence priority.

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FP05-11 Executive Summary	
General Description	Establish C&T use determination for eulachon in the Bering River area. (Originator: Native Village of Eyak)
Proposed Regulation	**Prince William Sound Area - Eulachon** ***Waters of the Bering River Area from Point Martin to Cape Suckling*** ***Eulachon*** ***Residents of Cordova***
Region 2 - Southcentral Regional Council Recommendation	**Support.**
Interagency Staff Committee Recommendation	**Support**
ADF&G Comments	The Federal Subsistence Board meeting book is being published prior to development of final recommendations and comments by the Alaska Department of Fish and Game. This information will be available on the Department's website by January 4, 2005. See the ADF&G homepage, under the headings of "highlights" and "regulations", at http://www.adfg.state.ak.us. For those without computer access, please call 1-907- 267-2360 for further information.
Written Public Comments	**None.**

FP05-12 Executive Summary	
General Description	Establish C&T use determination for the Copper River Delta. (Originator: Native Village of Eyak)
Proposed Regulation	**Prince William Sound Area - Eulachon** ***Waters of the Copper River Delta, from the Eyak River to Point Martin.*** ***Eulachon*** ***Residents of Cordova***
Region 2 - Southcentral Regional Council Recommendation	**Support with modification** to add residents of Chenega Bay and Tatitlek.
Interagency Staff Committee Recommendation	**Support with modification** to add the residents of Chenega Bay and Tatitlek. **Proposed Federal Regulation** *.24(a)(2) Prince William Sound Area* ***Waters of the Copper River Delta, from the Eyak River to Point Martin*** ***Eulachon*** ***Residents of Cordova, Chenega Bay, and Tatitlek***
ADF&G Comments	The Federal Subsistence Board meeting book is being published prior to development of final recommendations and comments by the Alaska Department of Fish and Game. This information will be available on the Department's website by January 4, 2005. See the ADF&G homepage, under the headings of "highlights" and "regulations", at http://www.adfg.state.ak.us. For those without computer access, please call 1-907- 267-2360 for further information.
Written Public Comments	**None.**

REGIONAL ADVISORY COUNCIL RECOMMENDATIONS

SOUTHCENTRAL REGIONAL COUNCIL

FP05-11. Establish a C&T Use Determination for eulachon in the Bering River area.

Support. The Council recommended supporting FP05-11 after discussion of historical ties and knowledge of the Bering River area. Some Cordova residents regularly use this area during the eulachon season. The Council discussed the proposed modification to include residents of Chenega Bay and Tatitlek and decided to oppose this proposed modification stating that the Bering River area is too far to access by the residents of Chenega Bay and Tatitlek. There is not enough data available to support recommending a C&T Use finding for these two communities in the Bering River area.

FP05-12. Establish a C&T Use Determination for eulachon in the Copper River Delta area.

Support with modification to add residents of Chenega Bay and Tatitlek. The Council members provided additional information about the interaction of residents of Chenega Bay and Tatitlek with Cordova residents and their use of the Copper River Delta for the harvest of eulachon.

The modified proposed regulation should read:

.24(a)(2) Prince William Sound Area

Waters of the Copper River Delta from the Eyak River to Point Martin	***Eulachon***	***Residents of Cordova, Chenega Bay, and Tatitlek***

INTERAGENCY STAFF COMMITTEE RECOMMENDATION

FP05-11

Support the proposal, consistent with the recommendation of the Southcentral Regional Advisory Council.

FP05-12

Support with modification, consistent with the recommendation of the Southcentral Regional Advisory Council, to add the residents of Chenega Bay and Tatitlek.

The modified proposed regulation should read:

.24(a)(2) Prince William Sound Area

Waters of the Copper River Delta from the Eyak River to Point Martin	***Eulachon***	***Residents of Cordova, Chenega Bay, and Tatitlek***

Justification

Household surveys, technical reports, and historical accounts provide documentation of the use of eulachon by residents of these three communities on a long term basis. These accounts also describe the harvest by residents of all three communities in the Copper River Delta. The documentation for the harvest of eulachon in the Bering River Area by Cordova residents was provided by the proponents via testimony at the Southcentral Council meeting in October 2004. There was no documentation or testimony about use of the Bering River area by residents of Chenega Bay or Tatitlek.

COMMENTS

ADF&G

The Federal Subsistence Board meeting book is being published prior to development of final recommendations and comments by the Alaska Department of Fish and Game. This information will be available on the Department's website by January 4, 2005. See the ADF&G homepage, under the headings of "highlights" and "regulations", at http://www.adfg.state.ak.us. For those without computer access, please call 1-907- 267-2360 for further information.

PUBLIC

None.

STAFF ANALYSIS
FP05-11/12

ISSUES

Proposals FP05-11 and FP05-12, submitted by the Copper River/Prince William Sound Native Fishers's Association and the Native Village of Eyak Traditional Council, Cordova, request a customary and traditional use determination for eulachon in the Bering River Area (FP05-11) and the Copper River Delta (FP05-12) for the residents of Cordova.

DISCUSSION

The proposals request positive determinations for residents of Cordova in the Copper River Delta and the Bering River Area. The proponent was contacted to determine if these requests were meant to be exclusively for Cordova residents. They indicated that the proposals were not intended to be exclusive; they had not been able to contact residents in Chenega Bay or Tatitlek to determine if they would also like to be included in the request (McCall 2004 pers. comm.). Contact was made with the tribal offices of both Chenega Bay (Evanoff 2004 pers. comm.) and Tatitlek (Kompkoff 2004 pers. comm.). Representatives from both communities indicated that they would want their communities to be included in the request, as their residents have harvested eulachon in the area requested.

Existing Federal Regulation

.24(a)(2) Prince William Sound Area

No current determination for eulachon, therefore all rural residents are eligible.

Proposed Federal Regulation

FP05-11: *.24(a)(2) Prince William Sound Area*

Waters of the Bering River Area from Point Martin to Cape Suckling	*Eulachon*	*Residents of Cordova*

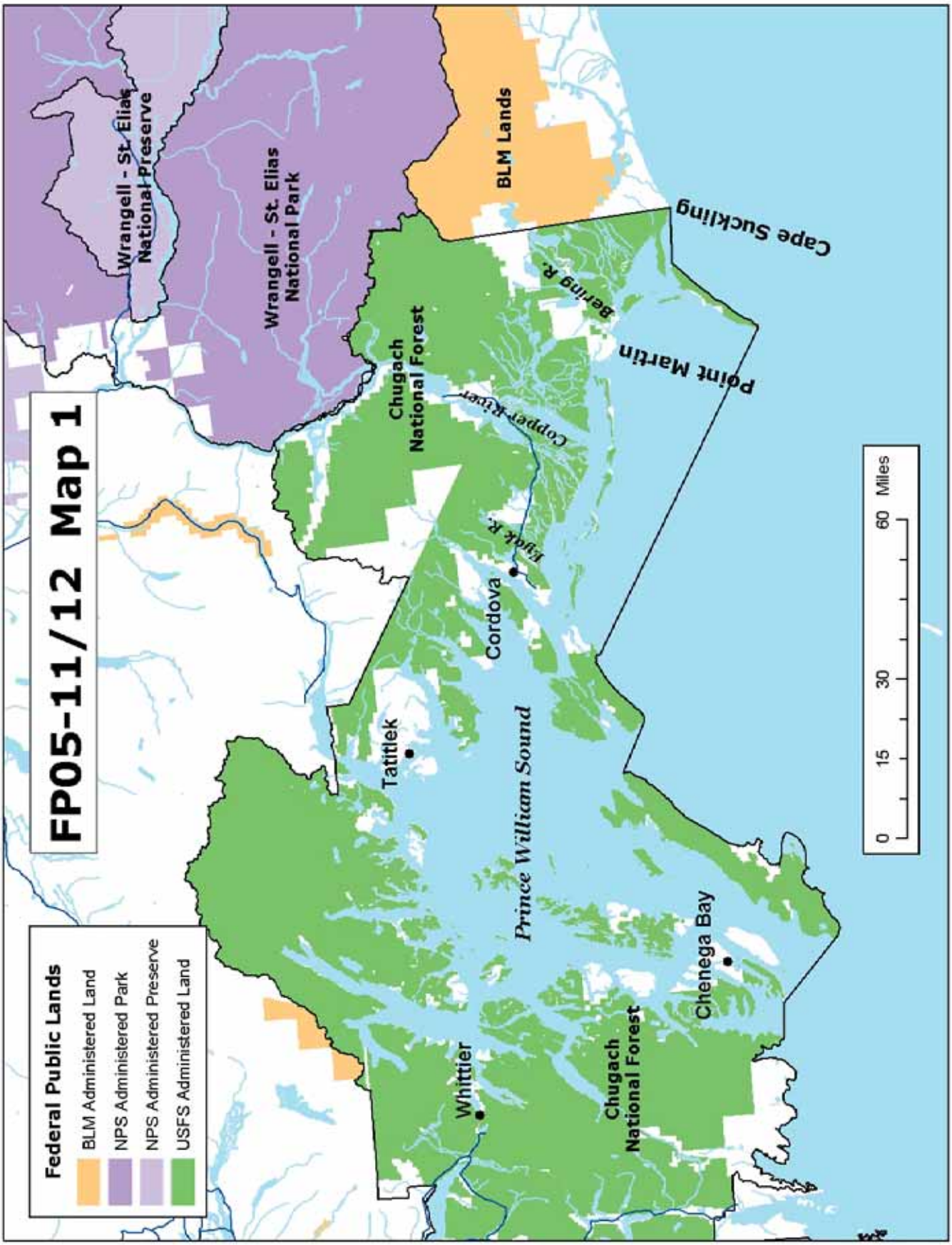
FP05-12: *.24(a)(2) Prince William Sound Area*

Waters of the Copper River Delta from the Eyak River to Point Martin	***Eulachon***	***Residents of Cordova***

Extent of Federal Public Waters

Federal public waters of the Prince William Sound Area include all waters within the exterior boundaries of the Gulkana Wild and Scenic River, the Wrangell-St. Elias National Park and Preserve, and the Chugach National Forest, excluding marine waters, and inland waters adjacent to these exterior boundaries, and all non-navigable waters on lands managed by the Bureau of Land Management. Federal public waters relevant to this proposal are shown in **Map 1.**

Note: For purposes of this discussion, the phrase "Federal public waters" is defined as those waters described under 50 CFR 100.3(b).


FP05-11/12 Map 1
Federal Public Lands
BLM Administered Land
NPS Administered Park
NPS Administered Preserve
USFS Administered Land
Wrangell - St. Elias National Preserve
Wrangell - St. Elias National Park
BLM Lands
Cape Suckling
Chugach National Forest
Bering R.
Point Martin
Copper River
Eyak R.
Cordova
Tatitlek
Prince William Sound
Chenega Bay
Whittier
Chugach National Forest
0 15 30 60 Miles

Background

Eulachon are one of seven species of smelt found in Alaska (Mecklenburg et al. 2002). Recent eulachon commercial test fisheries in the Cordova area raised concerns about potential impacts to subsistence uses. The Native Village of Eyak initiated two studies in collaboration with the Chugach National Forest, Cordova Ranger District, and the Alaska Department of Fish and Game (ADF&G) Division of Subsistence (Joyce et al. 2002, Joyce et al. 2004). Based on information gathered in these studies, the Native Village of Eyak along with the Copper River/ Prince William Sound Native Fishers' Association requested positive customary and traditional use determinations for eulachon in two areas, the Copper River Delta and the Bering River. Besides seeking recognition in the Federal Subsistence Management Program for subsistence use of this resource, they are working with other users and ADF&G on developing a management plan for eulachon that recognizes subsistence use amounts (Joyce et al. 2004:2).

Regulatory History

In the Federal Subsistence Management Program, there are no customary and traditional use determinations for eulachon in the Prince William Sound Area, therefore all rural Alaska residents are eligible to harvest the resource. The Alaska Board of Fisheries has made a customary and traditional use determination for smelt in the Prince William Sound Area, but has not made a determination of the amounts necessary for subsistence (Joyce et al. 2004:2).

Community Characteristics

When a positive customary and traditional use determination has not been made, it is the standard procedure to look at all potential users of the requested resource, since a positive determination will result in a more restricted pool of users. The coastal area of Prince William Sound has four rural communities, Chenega Bay, Cordova, Tatitlek, and Whittier. In the subsistence resource use study completed for Whittier, surveys showed that households used eulachon (Seitz et al. 1992:71). In the discussion of non-salmon harvesting practices for Whittier households, the general pattern involved harvesting during day trips (Seitz et al. 1992: 120). The areas identified in these proposals are over 110 miles from Whittier, which would indicate that a day trip to harvest eulachon in these areas is unlikely. In light of this information, Whittier was not included in this analysis.

In Prince William Sound, from west to east, three major culture groups, the Chugach Alutiiq, the Eyak, and the Tlingit, inhabited the region before settlement by the Russians and Americans in the late 19th century. At one time, the Copper River Delta was the core of a much larger homeland of the Eyaks. About two hundred years ago, the Tlingits living in the Yakutat area to the east began to dominate the Eyaks. Eyaks living along the Pacific Gulf coast were especially subject to "Tlingitization" of their culture, while others were pushed to the Copper River Delta area (de Laguna 1990:189). Using language ability and blood quantum as criteria, academics concluded decades ago that there are only a few Eyaks left, some of whom live in Cordova (de Laguna 1990). The Native Village of Eyak, based in Cordova, is a federally recognized Tribe with a membership of more than 500. The Native Village of Eyak represents an Alaska Native sociocultural system that combines Native people from different Native cultural groups, including Eyak, Tlingit, Alutiiq, and Athabaskan (BLM 2002:4.3-96)."

Cordova has a relatively large population, 2,454 and is a predominantly non-Native community of which 15% are Alaska Native (ADCED 2004). Current settlement history is closely tied to mineral development and the building of the Copper River and Northwestern Railroad and a shipping port in 1906. Chenega Bay and Tatitlek are contemporary villages located in traditional settlement areas of Chugach Alutiiqs. Tatitlek is the longest continuously occupied community in Prince William Sound. Chenega Bay, located on Evans Island, was resettled in 1983 by residents from the original community of Chenega, located on Chenega Island. The original settlement in Chenega was destroyed by a tsunami in the 1964 earthquake (Fall et al. 1996:11). Survivors were relocated to Cordova and Tatitlek. Before this event, some Chenega families had lived temporarily in Cordova to allow their children to attend high school (Stratton and Chisum 1986:13). The population of Chenega Bay was 86 in the 2000 census, 78% Alaska Native, and in Tatitlek the population was 182, of which 85% were Alaska Native (ADCED 2004).

Eight Factors for Determining Customary and Traditional Uses

A community or area must generally exhibit the following eight factors, which exemplify customary and traditional use. The Board will make customary and traditional use determinations based on an application of these eight factors (50 CFR 100.16(b) and 36 CFR 242.16(b)). In addition, the Board will take into consideration the reports and recommendations of any appropriate Regional Advisory Council (Council) regarding customary and traditional use of subsistence resources (50 CFR100.16(c) and 36 CFR 242.16(c)).

1. A long-term, consistent pattern of use, excluding interruptions beyond the control of the community or area

The importance of fish other than salmon in the diets of the indigenous people of Prince William Sound was recognized in the customary and traditional use worksheet prepared by the ADF&G Division of Subsistence (1999). Eulachon was described as part of the traditional resources used by Chugach Alutiiq people (Clark 1984:190) and eulachon harvesting activities were described for the Eyak (Birket-Smith and De Laguna 1938:121).

The ADF&G Division of Subsistence has conducted a number of household surveys in these three communities. The data relating to eulachon is presented in **Table 1.** For Chenega Bay, in the six years of surveys, the use of eulachon occurred in every year except one, 1990. The *Exxon Valdez* oil spill in 1989 may account for this disruption, as noted by residents surveyed in 1989/1990, 70.4% of the households gave fear of contamination as a reason for the reduction in harvest and use of fish other than salmon (Fall et al. 1996:150). In Cordova, use of eulachon is shown in each of the five years of household surveys, as also in each of the four years the surveys were conducted in Tatitlek. Harvest of eulachon is also shown in every year surveyed for residents of Cordova. In Chenega Bay and Tatitlek, harvest is shown in only one year in each community, 1984 and 1997 respectively. This level of use fits with the pattern described by both community representatives when contacted about the proposals; each person indicated that their harvest occurred when the opportunity was present (Evanoff 2004 pers. comm., Kompkoff 2004 pers. comm.).

Table 1. FP05-11/12. Use and harvest data for eulachon (ADF&G 2001)

Community	Year	Percentage of Households			Pounds Harvested	
		Using	Receiving	Giving	Community	Per Capita
Chenega Bay	1984	12.5	12.5	0.0	10	0.18
	1990	0.0	0.0	0.0	0	0.00
	1991	5.6	5.6	5.6	0	0.00
	1992	8.7	8.7	4.3	0	0.00
	1993	8.7	8.7	4.3	0	0.00
	1997	6.7	6.7	6.7	0	0.00
Cordova	1988	21.7	8.5	10.2	1,889	0.78
	1991	22.8	8.9	7.9	3,865	1.69
	1992	19.5	12.2	12.2	1,243	.046
	1993	12.5	8.7	5.8	503	0.17
	1997	16.2	7.5	8.3	4,769	1.90
Tatitlek	1990	11.8	11.8	5.9	0	0.00
	1991	36.8	36.8	26.3	0	0.00
	1993	25.0	25.0	5.0	0	0.00
	1997	6.3	6.3	6.3	42	0.15

In the recent study conducted in these three communities, residents were asked to estimate the amount of eulachon in gallons that their "households normally harvest in one year." Those estimates are presented in **Table 2.** While these data do not represent actual harvests, they do provide an indication of use of eulachon for the different communities. In Cordova, 54 of the 98 households surveyed indicated harvests; in Chenega Bay, 7 of the 13 households indicated harvests, and in Tatitlek, 4 of the 17 households indicated harvests. This survey also asked residents if they used eulachon for food, bait, oil, or trade (**Table 3)**. A household could have identified more than one use. Use as food was identified by a majority of the households in each community.

Table 2. FP05-11/12. Typical amounts of eulachon harvested (Joyce et al. 2002)

Gallons	Pounds	Cordova (98 households)	Chenega Bay (13 households)	Tatitlek (17 households)
.5 – 5	1.625 – 16.25	37	4	3
5 – 10	16. 25 – 32.50	8	2	0
10-20	32.50 – 65.0	5	1	1
20+	65.0+	4	0	0

Table 3. FP05-11/12. Type of use (Joyce et al. 2002)

Community	Households surveyed (total households)	Use of Eulachon			
		food	bait	oil	trade
Cordova	98 (958)	68	11	5	2
Chenega Bay	13 (22)	11	3	0	3
Tatitlek	17 (38)	13	1	0	0

2. A pattern of use recurring in specific seasons for many years

In the historic period, harvest of eulachon was reported from February to April (Birket-Smith and De Laguna 1938:121). More recent accounts describe harvesting of eulachon and smelt in January and February (Stratton 1989:99). The most recent study of eulachon in the Cordova area indicated variability in the runs of eulachon, with eulachon present from January to June (Joyce et al. 2004:14).

3. A pattern of use consisting of methods and means of harvest which are characterized by efficiency and economy of effort and cost, conditioned by local characteristics

Traditional methods of harvest by Eyak involved night fishing with the use of a dip net or fish spear and fire carried in a canoe to attract the fish (Birket-Smith and De Laguna 1938). Set nets, dip nets, and jigging have been described as contemporary methods of harvesting eulachon (Stratton 1989:99). In the recent study undertaken in Chenega Bay, Cordova, and Tatitlek, when respondents were asked about the past three years, dip nets and gillnets were the primary methods identified (Joyce et al. 2002). In the later study of harvest opportunities for eulachon, a key point was brought out, "Variability in weather conditions and run timing may greatly affect the subsistence harvest of eulachon on the Copper River (Joyce et al. 2004: 15)." This statement related to timing and location of the eulachon runs, factors contributing to variability in the activities of Cordova residents that also affect the opportunities for Chenega Bay and Tatitlek residents to participate in harvest activities.

4. The consistent harvest and use of fish or wildlife as related to past methods and means of taking: near, or reasonably accessible from the community or area

In the Prince William Sound Area, the Copper River Delta is considered to be the major spawning area for eulachon (Joyce et al. 2002:3). Eulachon harvest areas for residents of Chenega Bay (Stratton and Chisum 1986:77) and Tatitlek (Stratton 1990:104-105) were identified as the Cordova area or the Alaganik Slough, located in the Copper River Delta. These areas were also described as harvest areas for Cordova in the 1985-1986 household surveys (Stratton 1989:99). Recent studies in the area focused on the Copper River Delta and showed harvests by all three communities (Joyce et al. 2002; Joyce et al. 2004). The proponents indicated harvest of eulachon in the Bering River area and described uses parallel to those in the Copper River Delta (OSM 2004). When the proponent was asked why two separate customary and traditional use determinations were requested, the response was that they were aware of the lack of documentation of the use of the Bering River Area and they wanted to ensure recognition of their use of eulachon in the Copper River Delta. Residents of Cordova, Chenega Bay, and Tatitlek have positive customary and traditional use determinations for black bear, goat, and moose in the Bering River Area, Unit 6(A). At the October 2004 Southcentral Council meeting, members from this area supplied information about the use of the Bering River area by Cordova residents. It was noted that the historic village of Katalla is located in the Bering River area and descendants of this village now reside in Cordova. These families are known to fish on a regular basis in the Bering River area. These Council members were not aware of residents from Chenega Bay and Tatitlek traveling to the Bering River area to harvest eulachon (SCRAC 2004).

5. A means of handling, preparing, preserving, and storing fish or wildlife which has been traditionally used by past generations, including consideration of alteration of past practices due to recent technological advances, where appropriate

In the 1985-1986 surveys, in Cordova residents reported that, "Smelt were most commonly eaten fresh, and not preserved for later use (Stratton 1989:99)." Data gathered specifically about eulachon in the most recent household surveys in all three communities identified freezing, pickling, salting, smoking, drying, frying, baking, boiling, and steaming as methods of preservation and preparing (Joyce et al. 2002).

6. A pattern of use which includes the handing down of knowledge of fishing and hunting skills, values, and lore from generation to generation

The recent surveys undertaken in these three communities specifically asked how they learned about the harvest and use of eulachon and how they currently carry out harvest activities. The survey data showed that in most households, "members of their family taught them how to harvest eulachon and now harvest eulachon with their family (Joyce et al. 2002:24)."

7. A pattern of use in which the harvest is shared or distributed within a definable community of persons

The level of sharing is indicated in the percentages of households giving and receiving in the data shown in **Table 1**. For each year, in each community where there is use of eulachon, giving and receiving is shown. It is significant that in the communities of Chenega Bay and Tatitlek regular use of eulachon occurs, but harvesting occurred in only one year of the years surveyed for each of these communities.

8. A pattern of use which relates to reliance upon a wide diversity of fish and wildlife resources of the area and which provides substantial cultural, economic, social, and nutritional elements to the community or area

Data from household surveys conducted in 1997 are available for all three communities and shown in **Table 4.** In Chenega Bay and Tatitlek, 100% of the households used subsistence resources and in Cordova 97.6% of the households used subsistence resources. Chenega Bay showed the highest diversity of resources used with an average of 23.2, Tatitlek ranked second with 18.8, and Cordova showed an average of 12.8 resources used.

Table 4. FP05-11/12. Overall subsistence household use, annual per capita harvest, and diversity of resources used (Fall and Utermohle 1999).

Community	% Household Use	Per Capita Pounds	Diversity of Resources
Chenega Bay	100.0	577	23.2
Cordova	97.6	179	12.8
Tatitlek	100.0	406	18.8

Effects of the Proposal

If modifications to include the residents of Chenega Bay and Tatitlek are adopted along with these proposals, the customary and traditional use of eulachon by residents of Cordova, Chenega Bay, and Tatitlek would be recognized in the Copper River Delta and Bering River Area. This recognition would help to ensure the provision of continuing subsistence use of eulachon in the Prince William Sound Area. This would also somewhat parallel a determination made by the State of Alaska recognizing smelt as a subsistence resource in the Prince William Sound Area.

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FP05-13 Executive Summary	
General Description	Establish limits on amount of customary trade allowed in the Upper Copper River District. (Originator: Ahtna, Copper River Native Association, & Chitina Native Corporation)
Proposed Regulation	**Prince William Sound Area – Salmon** *§___.27(i)(11) Transactions between rural residents. ...* ***(ii) Upper Copper River District – The total number per household of salmon taken within Federal jurisdiction in the Upper Copper River District and exchanged in customary trade to rural residents may not exceed 50% of the annual catch of salmon by the household. There is no monetary limit for cash sales of salmon between rural residents. Cash sale of salmon processed using customary and traditional methods is allowed.*** *(12) Transactions between a rural resident and others. ...****(ii) Upper Copper River District – The total cash value per household of salmon taken within Federal jurisdiction in the Upper Copper River District and exchanged in customary trade between rural residents and individuals other than rural residents may not exceed $100.00 annually. No more than 50% of the annual catch of the household may be sold. These customary trade sales must be immediately recorded on a customary trade recordkeeping form. The recording requirement and the responsibility to ensure the household limit is not exceeded rests with the seller. Cash sale of salmon processed using customary and traditional methods is allowed.***
Region 2 - Southcentral Regional Council Recommendation	**Support with modification** to increase the cash limit from $100, between rural residents and other individuals, to $500 and required a reporting requirement for all customary trade transactions in the Upper Copper River District.
Region 9 - Eastern Interior Regional Council Recommendation	**Support**

FP05-13 Executive Summary	
Interagency Staff Committee Recommendation	**Support with modification**, consistent with the recommendation of the Southcentral Regional Advisory Council. The modifications would increase the limit of exchanges between rural residents and other individuals to $500 and require that all customary trade transactions of salmon harvested in the Upper Copper River District be recorded on a form. The modifications would also remove those portions of the proposal pertaining to "no monetary limit for cash sales of salmon between rural residents" and that "cash sale of salmon processed using customary and traditional methods be allowed." The remaining modifications are mostly editorial, to remove the reference to Federal jurisdiction and to replace the word "catch" with "harvest". See proposed regulation wording in the Interagency Staff Committee Recommendation section.
ADF&G Comments	The Federal Subsistence Board meeting book is being published prior to development of final recommendations and comments by the Alaska Department of Fish and Game. This information will be available on the Department's website by January 4, 2005. See the ADF&G homepage, under the headings of "highlights" and "regulations", at http://www.adfg.state.ak.us. For those without computer access, please call 1-907- 267-2360 for further information.
Written Public Comments	**1 Support** **1 Support with modification**

REGIONAL ADVISORY COUNCIL RECOMMENDATIONS

SOUTHCENTRAL REGIONAL COUNCIL

Support with modification. The Council modified the cash limit from $100, between rural residents and other individuals, to $500 and required a reporting requirement for all customary trade transactions in the Upper Copper River District. The Council received testimony from the local users and two of the three proponents in support of an increased limit to $500 for transactions between rural residents and other individuals.

The modified proposed regulation should read:

§___.27(i)(11) Transactions between rural residents. Rural residents may exchange in customary trade subsistence-harvested fish, their parts, or their eggs, legally taken under the regulations in this part, for cash from other rural residents. The Board may recognize regional differences and define customary trade differently for separate regions of the State.

(i) Bristol Bay Fishery Management Area – The total cash value per household of salmon taken within Federal jurisdiction in the Bristol Bay Fishery Management Area and exchanged in customary trade to rural residents may not exceed $500.00 annually.

(ii) Upper Copper River District – The total number of salmon per household taken within the Upper Copper River District and exchanged in customary trade to rural residents may not exceed 50% of the annual harvest of salmon by the household. These customary trade sales must be immediately recorded on a customary trade recordkeeping form. The recording requirement and the responsibility to ensure the household limit is not exceeded rests with the seller.

(12) Transactions between a rural resident and others. In customary trade, a rural resident may trade fish, their parts, or their eggs, legally taken under the regulations in this part, for cash from individuals other than rural residents if the individual who purchases the fish, their parts, or their eggs uses them for personal or family consumption. If you are not a rural resident, you may not sell fish, their parts, or their eggs taken under the regulations in this part. The Board may recognize regional differences and define customary trade differently for separate regions of the State.

(i) Bristol Bay Fishery Management Area – The total cash value per household of salmon taken within Federal jurisdiction in the Bristol Bay Fishery Management Area and exchanged in customary trade between rural residents and individuals other than rural residents may not exceed $400.00 annually. These customary trade sales must be immediately recorded on a customary trade recordkeeping form. The recording requirement and the responsibility to ensure the household limit is not exceeded rests with the seller.

(ii) Upper Copper River District – The total cash value of salmon per household taken within the Upper Copper River District and exchanged in customary trade between rural residents and individuals other than rural residents may not exceed $500.00 annually and no more than 50% of the annual household harvest may be sold. These customary trade sales must be immediately recorded on a customary trade recordkeeping form. The recording requirement and the responsibility to ensure the household limit is not exceeded rests with the seller.

EASTERN INTERIOR REGIONAL COUNCIL

Support. The Regional Council supported the staff recommendation, with approval of the Southcentral Regional Council, on pages 80 & 81 of the meeting. The Regional Council supports the general concept, the proponent and subsistence users along the Copper River.

INTERAGENCY STAFF COMMITTEE RECOMMENDATION

Support with modification, consistent with the recommendation of the Southcentral Regional Advisory Council. The modifications would increase the limit of exchanges between rural residents and other individuals to $500 and require that all customary trade transactions of salmon harvested in the Upper Copper River District be recorded on a form. The modifications would also remove those portions of the proposal pertaining to "no monetary limit for cash sales of salmon between rural residents" and that "cash sale of salmon processed using customary and traditional methods be allowed." The remaining modifications are mostly editorial, to remove the reference to Federal jurisdiction and to replace the word "catch" with "harvest".

The modified proposed regulation should read:

§___.27 (i) (11) Transactions between rural residents. Rural residents may exchange in customary trade subsistence-harvested fish, their parts, or their eggs, legally taken under the regulations in this part, for cash from other rural residents. The Board may recognize regional differences and define customary trade differently for separate regions of the State.

(i) Bristol Bay Fishery Management Area – The total cash value per household of salmon taken within Federal jurisdiction in the Bristol Bay Fishery Management Area and exchanged in customary trade to rural residents may not exceed $500.00 annually.

(ii) Upper Copper River District – The total number of salmon per household taken within the Upper Copper River District and exchanged in customary trade to rural

residents may not exceed 50% of the annual harvest of salmon by the household. These customary trade sales must be immediately recorded on a customary trade recordkeeping form. The recording requirement and the responsibility to ensure the household limit is not exceeded rests with the seller.

(12) Transactions between a rural resident and others. In customary trade, a rural resident may trade fish, their parts, or their eggs, legally taken under the regulations in this part, for cash from individuals other than rural residents if the individual who purchases the fish, their parts, or their eggs uses them for personal or family consumption. If you are not a rural resident, you may not sell fish, their parts, or their eggs taken under the regulations in this part. The Board may recognize regional differences and define customary trade differently for separate regions of the State.

(i) Bristol Bay Fishery Management Area – The total cash value per household of salmon taken within Federal jurisdiction in the Bristol Bay Fishery Management Area and exchanged in customary trade between rural residents and individuals other than rural residents may not exceed $400.00 annually. These customary trade sales must be immediately recorded on a customary trade recordkeeping form. The recording requirement and the responsibility to ensure the household limit is not exceeded rests with the seller.

(ii) Upper Copper River District – The total cash value of salmon per household taken within the Upper Copper River District and exchanged in customary trade between rural residents and individuals other than rural residents may not exceed $500.00 annually and no more than 50% of the annual household harvest may be sold. These customary trade sales must be immediately recorded on a customary trade recordkeeping form. The recording requirement and the responsibility to ensure the household limit is not exceeded rests with the seller.

Justification

Establishing a limit on the dollar amount and percentage of harvest that could be sold through customary trade and requiring sales to be recorded should provide additional control and accountability, but will place a burden of recording these transactions on the seller.

There is no reason to adopt the statement about no monetary limit between rural residents because that is currently provided for through the statewide customary trade regulations.

The portion of the proposal that speaks to the sales of salmon processed using customary and traditional methods is outside the authority of the Federal subsistence program. Food health issues, including fish processing, are regulated by the State of Alaska. The proposed language could be misleading if people do not realize they are also required to comply with processing health standards.

Current customary trade regulations are challenging to communicate effectively. This regulatory change would benefit from a focused outreach effort to clarify the regulatory changes to the users.

COMMENTS

ADF&G

The Federal Subsistence Board meeting book is being published prior to development of final recommendations and comments by the Alaska Department of Fish and Game. This information will be available on the Department's website by January 4, 2005. See the ADF&G homepage, under the headings of "highlights" and "regulations", at http://www.adfg.state.ak.us. For those without computer access, please call 1-907- 267-2360 for further information.

PUBLIC

Support. The Ahtna Tene Nene' Subsistence Committee supports Proposal FP05-13 to establish limits on the amount of customary trade allowed in the Upper Copper River District. We support customary trade for Salmon among rural residents without a limit on the amount of cash, as long as 50% of the annual catch is kept by the household. We support customary trade with a cash value that does not exceed $100 between rural residents and non-residents, to allow no more than 50% of the annual catch to be sold, and to have the seller be responsible to keep a customary trade record keeping form.

Ahtna Tene Nene' Subsistence Committee

Support with modification. The Wrangell-St. Elias National Park Subsistence Resource Commission unanimously supports the proposal with modification. The commission voted to amend the proposal as follows: The monetary limit on customary trade between rural and urban residents would be increased from $100 to $500. In addition, a reporting requirement should apply to customary trade between rural residents. The $100 limit on customary trade with urban residents unnecessarily restricts customary trade, and thus a $500 limit would better allow the continuation of customary trade by subsistence users. The reporting requirement on customary trade with rural as well as urban residents will help develop baseline information on the extent and nature of customary trade that takes place.

Additionally, the SRC voted unanimously to recommend to the Federal Subsistence Board that a study be initiated of the current and historic level of customary trade. They feel that additional information on this practice is needed and that this information would be of use to them in decision making.

Wrangell-St. Elias National Park
Subsistence Resource Commission

STAFF ANALYSIS
FP05-13

ISSUES

Proposal FP05-13, submitted by Ahtna Inc., the Copper River Native Association, and the Chitina Native Corporation, requests regional modifications to the customary trade regulations. The proponents request that customary trade of salmon to individuals other than rural residents in the Upper Copper River District be limited by dollar value and percentage of catch, that there be a reporting requirement, and that sales of processed salmon using customary and traditional methods be allowed. They also request that customary trade of salmon between rural residents be limited to no more than 50% of the annual household catch and that sales of processed salmon using customary and traditional methods be allowed.

DISCUSSION

The proposed changes are intended to limit the amount of salmon sold for customary trade in the upper Copper River area. The proponents feel that the upper Copper River area has a high level of opportunity for increased customary trade activity since people are now more aware of the regulation and the area is on the road system. They want to continue to allow for customary and traditional practices but do not want subsistence harvests to increase in the upper Copper River basin due to customary trade of salmon. The proposed changes are intended to keep customary trade at traditional levels for the Upper Copper River District.

If adopted, customary trade with individuals other than rural residents would be limited to no more than 50% of their annual household harvest and an annual household limit of $100, and all such transactions would need to be recorded on a form. Customary trade of salmon between rural residents would be limited to no more than 50% of their annual household harvest. In addition, the customary trade of salmon processed using customary and traditional methods would be allowed for all sales in the Upper Copper River District.

Existing Federal Regulation

Prince William Sound Area – Salmon

§___.27(i)(11) Transactions between rural residents. Rural residents may exchange in customary trade subsistence-harvested fish, their parts, or their eggs, legally taken under the regulations in this part, for cash from other rural residents. The Board may recognize regional differences and define customary trade differently for separate regions of the State.

(i) Bristol Bay Fishery Management Area - The total cash value per household of salmon taken within Federal jurisdiction in the Bristol Bay Fishery Management Area and exchanged in customary trade to rural residents may not exceed $500.00 annually.

(ii) [Reserved]

(12) Transactions between a rural resident and others. In customary trade, a rural resident may trade fish, their parts, or their eggs, legally taken under the regulations in this part, for cash from individuals other than rural residents if the individual who purchases the fish, their parts, or their eggs uses them for personal or family consumption. If you are not a rural resident, you may not sell fish, their parts, or their eggs taken under the regulations in this part. The Board may recognize regional differences and define customary trade differently for separate regions of the State.

(i) Bristol Bay Fishery Management Area – The total cash value per household of salmon taken within Federal jurisdiction in the Bristol Bay Fishery Management Area and exchanged in customary trade between rural residents and individuals other than rural residents may not exceed $400.00 annually. These customary trade sales must be immediately recorded on a customary trade recordkeeping form. The recording requirement and the responsibility to ensure the household limit is not exceeded rests with the seller.

(ii) [Reserved]

Proposed Federal Regulation

Prince William Sound Area – Salmon

§___.27(i)(11) Transactions between rural residents. Rural residents may exchange in customary trade subsistence-harvested fish, their parts, or their eggs, legally taken under the regulations in this part, for cash from other rural residents. The Board may recognize regional differences and define customary trade differently for separate regions of the State.

(i) Bristol Bay Fishery Management Area – The total cash value per household of salmon taken within Federal jurisdiction in the Bristol Bay Fishery Management Area and exchanged in customary trade to rural residents may not exceed $500.00 annually.

(ii) Upper Copper River District – The total number per household of salmon taken within Federal jurisdiction in the Upper Copper River District and exchanged in customary trade to rural residents may not exceed 50% of the annual catch of salmon by the household. There is no monetary limit for cash sales of salmon between rural residents. Cash sale of salmon processed using customary and traditional methods is allowed.

(12) Transactions between a rural resident and others. In customary trade, a rural resident may trade fish, their parts, or their eggs, legally taken under the regulations in this part, for cash from individuals other than rural residents if the individual who purchases the fish, their parts, or their eggs uses them for personal or family consumption. If you are not a rural resident, you may not sell fish, their parts, or their eggs taken under the regulations in this part. The Board may recognize regional differences and define customary trade differently for separate regions of the State.

(i) Bristol Bay Fishery Management Area – The total cash value per household of salmon taken within Federal jurisdiction in the Bristol Bay Fishery Management Area and exchanged in customary trade between rural residents and individuals other than rural residents may not exceed $400.00 annually. These customary trade sales must be immediately recorded on a customary trade recordkeeping form. The recording requirement and the responsibility to ensure the household limit is not exceeded rests with the seller.

(ii) Upper Copper River District – The total cash value per household of salmon taken within Federal jurisdiction in the Upper Copper River District and exchanged in customary trade between rural residents and individuals other than rural residents may not exceed $100.00 annually. No more than 50% of the annual catch of the household may be sold. These customary trade sales must be immediately recorded on a customary trade recordkeeping form. The recording requirement and the responsibility to ensure the household limit is not exceeded rests with the seller. Cash sale of salmon processed using customary and traditional methods is allowed.

Extent of Federal Public Waters

Federal public waters of the Upper Copper River District include all waters within and adjacent to the exterior boundaries of the Wrangell-St. Elias National Park and Preserve.

The Upper Copper River District is comprised of the Chitina Subdistrict and the Glennallen Subdistrict. The Chitina Subdistrict consists of all waters of the mainstem Copper River downstream of the downstream edge of the Chitina-McCarthy Road Bridge to an east-west line crossing the Copper River approximately 200 yards upstream of Haley Creek, as designated by Alaska Department of Fish & Game (ADF&G) regulatory markers, a distance of approximately 10 miles. The Glennallen Subdistrict consists of all waters of the mainstem Copper River from the mouth of the Slana River downstream to the downstream edge of the Chitina-McCarthy Road Bridge, a distance of approximately 120 miles.

Note: For purposes of this discussion, the phrase “Federal public waters” is defined as those waters described under 50 CFR 100.3(b).

Customary and Traditional Use Determination

The customary and traditional (C&T) use determination for the take of salmon in the Glennallen Subdistrict consists of residents of the Prince William Sound Area and residents of Cantwell, Chisana, Dot Lake, Healy Lake, Northway, Tanacross, Tetlin, Tok, and those individuals living along the Alaska Highway from the Alaska/Canadian border to Dot Lake, along the Tok cutoff from Tok to Mentasta Pass, and along the Nabesna Road. The C&T use determination for the Chitina Subdistrict consists of residents of Cantwell, Chisana, Chistochina, Chitina, Copper Center, Dot Lake, Gakona, Gakona Junction, Glennallen, Gulkana, Healy Lake, Kenny Lake, Lower Tonsina, McCarthy, Mentasta Lake, Nabesna, Northway, Paxson-Sourdough, Slana, Tanacross, Tazlina, Tetlin, Tok, Tonsina, and those individuals that live along the Tok cutoff from Tok to Mentasta Pass, and along the Nabesna Road.

Regulatory History

Title VIII of ANILCA specifically identifies customary trade as a legitimate subsistence use (ANILCA Sec. 803). The term "customary trade" is defined by regulation as the "…exchange for cash of fish and wildlife resources regulated in this part, not otherwise prohibited by Federal law or regulation, to support personal or family needs, and does not include trade which constitutes a significant commercial enterprise" (50 C.F.R. 100.4). While the exchange of subsistence resources as customary trade may involve fish, shellfish or wildlife resources, this proposal addresses only the customary trade of salmon.

Prior to October 1, 1999, Federal subsistence regulations applied only to subsistence fisheries in non-navigable waters. The regulations in effect at that time contained the same definition for "customary trade" cited above, but also included the following prohibition: "No person may buy or sell fish, their parts, or their eggs which have been taken for subsistence uses, unless, prior to the sale, the prospective buyer or seller obtains a determination from the Federal Subsistence Board that the sale constitutes customary trade" [50 C.F.R. 100.26(c)(1) (1995)].

The Federal Subsistence Board (Board) recognized that the Federal regulations regarding customary trade would need to be further refined. Most notably, the term "significant commercial enterprise" was not defined in the regulations. This had the potential to cause confusion for subsistence users and law enforcement personnel when determining if a particular transaction is permissible customary trade or a significant commercial enterprise. Additionally, there was a concern that allowing customary trade without further regulatory clarification would create a loophole permitting valuable subsistence resources to become a commodity on the commercial market for monetary gain by those who wish to take wrongful advantage of the system. Without a more specific definition of "significant commercial enterprise" or other regulatory modification, law enforcement personnel concluded that the regulation was unenforceable.

In January 2003, the Board adopted a revised set of customary trade regulations in order to provide a more enforceable regulatory framework for this long-standing subsistence practice. When adopting the rule, the Board sought to accommodate customary and traditional practices to the extent reasonably practicable, while preventing abuses of the subsistence preference in the form of significant commercial transactions. The Board also recognized that it would probably be necessary to make future modifications to the final rule to accommodate regional differences in permissible customary trade between rural residents and others. This proposal represents such a regional context.

Except for herring roe-on-kelp in Southeast Alaska, State regulations do not allow the exchange of subsistence-caught fish for cash. However, this is not actively enforced for small-scale traditional exchanges.

Under Federal regulations, exchange of subsistence-caught fish for cash is allowed as described in the regulations beginning on page one of this analysis. If fish are processed (i.e. headed, filleted, frozen, dried, salted, smoked, canned, etc.), State health regulations require that the processing meets State government food health standards. The customary trade regulations do not exempt those involved from complying with regulations on the processing of foods. However, both State and Federal authorities recognize that rural residents not licensed as

fisheries businesses have historically processed and sold subsistence fish in limited non-commercial quantities. Small-scale sales of processed subsistence fish have not been the focus of law enforcement. The priority for Federal enforcement of these provisions is intended for large-scale cash sales that are not consistent with customary and traditional practices. It would be rare, but technically possible, for a subsistence user to meet the State government food health standards and hold the necessary processing permits, and yet not be a licensed fishery business. Licensed fishery businesses are excluded from participating in customary trade under Federal regulations.

A subsistence-fishing permit is required to harvest salmon for subsistence purposes in the Upper Copper River District under both Federal and State regulations. The State issues the required State subsistence permits while the National Park Service issues the required Federal subsistence permits. Only rural residents who reside in an area with a positive C&T use determination for salmon in the Upper Copper River District qualify for a Federal permit. The annual subsistence harvest limit for salmon in the Upper Copper River District for a household of one person is 30 salmon (no more than 5 Chinook salmon by dip net and 5 by rod and reel), however upon request, permits for additional salmon can be issued for up to 200 salmon, although the Chinook salmon limit does not change (OSM 2004). The annual subsistence harvest limit for salmon in the Upper Copper River District for a household of 2 or more people is 60 salmon (no more than 5 Chinook salmon by dip net and 5 by rod and reel), however upon request permits for additional salmon can be issued for up to 500 salmon with the Chinook salmon limit remaining unchanged. Legal gear includes fishwheels, dip nets, and rod and reel.

Harvest History

Federal subsistence salmon fishing permits have been required since 2002. **Table 1** summarizes the number of Federal permits issued and reported harvest by subdistrict and species. The majority of permits issued and salmon harvested in the Upper Copper River District continues to occur under State issued subsistence and personal use permits.

Table 1. Federal subsistence permits and reported salmon harvests for the Upper Copper River District in 2002 and 2003 (ADF&G 2004 and Veach pers. comm. 2004).

Subdistrict/Year	Permits Issued	Sockeye	Chinook	Total
Glennallen 2002	201	7,950	564	8,514
Chitina 2002	122	713	33	746
Glennallen 2003	221	13,900	554	14,454
Chitina 2003	100	717	18	735

To engage in customary trade, subsistence harvested fish must be harvested under Federal regulations and thus would need to be harvested using the Federal permit available for the Upper Copper River District. Customary trade exchanges of salmon for cash are allowed in §___.27(i)(11) and (12) only if *"...legally taken under the regulations in this part."* For the Upper Copper River District a Federal permit is required to harvest salmon legally under Federal regulations, including customary trade regulations.

Traditional Salmon Processing Methods

Simeone and Kari (2002) reported that traditionally both men and women fished for salmon, but it was left to the women to process the harvest. Today both men and women process fish. Modern Ahtna use various methods for preparing salmon. Traditional methods include drying, smoking, and fermenting, while modern methods include freezing, salting, and canning in addition to continuing to use traditional methods. A primary salmon product traditionally prepared by the Ahtna was a whole dried sockeye salmon, that has been split, scored, spread flat with spreader sticks, and smoked just the right amount in the smokehouse on a baling pole. The Ahtna also have a system of storing and counting these traditionally prepared salmon in bales of forty-two fish. This was historically a basic unit of exchange, both for the family's store of dry fish and as an item for barter (Simeone and Kari 2002).

There are no records of the amounts of salmon exchanged in customary trade in the Upper Copper River District or the amounts of cash involved. Historically, there was some level of exchange of traditionally prepared salmon for barter and possibly some more recent exchanges of traditionally prepared salmon for cash, but it has not been documented.

Effects of the Proposal

In the Upper Copper River District, Federal subsistence permits are available and required to harvest salmon under Federal regulations. Any salmon sold under the Federal customary trade regulations must be harvested using an Upper Copper River District Federal subsistence salmon fishing permit.

The proposed changes to customary trade of salmon in the Upper Copper River District would apply to both exchanges between rural residents and exchanges with individuals other than rural residents. Customary trade between rural residents would be limited to no more than 50% of their annual household salmon harvest. Customary trade of salmon with individuals other than rural residents would be restricted to an annual limit of $100 per household and no more than 50% of the annual household harvest. Also, any salmon sold under the customary trade regulation to individuals other than rural residents would be required to be recorded on a customary trade form for enforcement. The proposed recording requirement could be added to the Federal subsistence salmon permit for the Upper Copper River District.

Regional modifications were made to the customary trade regulations in the Bristol Bay Area last year with dollar limits and a requirement that sales to individuals other than rural residents be recorded on a form. Six recording forms have been issued to date.

The dollar value limit being proposed in the Upper Copper River District is not directly related

to current or historical amounts of salmon exchanged for cash, but is a limit intended to prevent exchanges which could be perceived as excessive or an abuse.

The language included by the proponent that there be *"no monetary limit for cash sales of salmon between rural residents"* currently is allowed under the statewide customary trade regulations.

The portion of the proposal that would allow the sales of salmon processed using customary and traditional methods falls outside the auspices of the Federal subsistence program. Food health issues, including fish processing, are controlled by the State of Alaska. The customary trade regulations do not exempt anyone from complying with State health regulations for processing foods for sale. The portion of the proposed language to allow the sale of processed salmon could mislead users to think that they could sell processed fish without meeting the required health standards.

Customary trade has been a long-standing practice that includes fish and fish products in many forms. Few if any Federal subsistence users hold the necessary food processing permits independent from a licensed fisheries business. Processing, under State law, includes any activity which would change the physical condition of the fish. This includes butchering, thermal processing, cooking, dehydrating, freezing, pickling, salting, or smoking (OSM 2004). Ironically, processed fish probably accounts for most of the customary trade that takes place, since fresh fish are subject to rapid spoilage during transport as compared to processed products.

The amount of customary trade occurring in the Upper Copper River District that complies with all applicable regulations is probably a small portion of the overall practice, taking into account health regulations. Further rule making does raise additional issues. The cash limit would apply only to the customary trade of salmon taken with a Federal permit that complies with health requirements. This would place the burden on users who do not hold the required health permits to record cash exchanges for unprocessed salmon only. Any processed salmon sold would still fall under the current category of an illegal small scale sale, unless the required health regulations were adhered to. Without a recording requirement for sales between rural residents and a limit of no more than 50% of the annual household harvests of salmon, only large scale abuses would likely be subject to any enforcement.

There is not a need to include the wording "within Federal jurisdiction" in the regulatory language since all Federal regulations only apply within waters subject to Federal jurisdiction. Also, using the term catch in regulation could be misleading and a more appropriate term to use would be the "harvest" of salmon.

Testimony from two of the three proponents during the Southcentral Regional Advisory Council meeting in Soldotna on October 12, 2004, suggested that the customary trade limit between Federally qualified rural residents of the Upper Copper River District and other individuals be increased from $100 as originally proposed to $500 per household annually. Regional council member comments during the public meeting helped frame the issue in a regional context. They agreed that a $100 limit would not allow the trade of many salmon and they also felt that all customary trade transactions should be recorded on a form.

Current customary trade regulations are challenging to effectively communicate. There would need to be a focused outreach effort to help avoid further confusing this complex area of regulation. Users would need to understand that allowed customary trade is limited to salmon harvested with a Federal permit, and that they must remain within dollar limits, the percentage of their annual harvest, and that all transactions must be recorded. A common misconception about the customary trade regulations, that also needs to be clarified at every opportunity, is that they do not provide an exemption from health permit requirements.

LITERATURE CITED

ADF&G. 2004. Upper Copper River District subsistence harvest data. Alaska Department of Fish and Game, Division of Sport Fish. Glennallen, Alaska.

OSM (Office of Subsistence Management). 2004. Management regulations for the harvest of fish and shellfish on Federal public lands and waters in Alaska, March 1, 2004 to March 31, 2005, pages 9-10. Anchorage, Alaska.

Simeone, William E. and James Kari. 2002. Copper River subsistence evaluation 2000 & traditional knowledge project, part one. Alaska Department of Fish and Game, Division of Subsistence, Final Report No. FIS 00-040, Anchorage, Alaska.

Veach, E. 2004. Fishery Biologist. Wrangell-St. Elias National Park and Preserve, Glennallen, AK. Personal Communication.

FP05-14 Executive Summary	
General Description	Revise C&T use determination for the Chitina Subdistrict of the Upper Copper River District. (Originator: Chickaloon Village Traditional Council)
Proposed Regulation	**Prince William Sound Area - Salmon** *Chitina Subdistrict of the Upper Copper River District.* — *Salmon* — *Residents of Cantwell,* ***Chickaloon,*** *Chisana, Chistochina, Chitina, Copper Center, Dot Lake, Gakona, Gakona Junction, Glennallen, Gulkana, Healy Lake, Kenny Lake, Lower Tonsina, McCarthy, Mentasta Lake, Nabesna, Northway, Slana, Tanacross, Tazlina, Tetlin, Tok, Tonsina, and those individuals that live along the Tok Cutoff from Tok to Mentasta Pass, and along the Nabesna Road.*
Region 2 - Southcentral Regional Council Recommendation	**Support.**
Region 9 - Eastern Interior Regional Council Recommendation	**Defer to home region.**
Interagency Staff Committee Recommendation	**Support.**
ADF&G Comments	The Federal Subsistence Board meeting book is being published prior to development of final recommendations and comments by the Alaska Department of Fish and Game. This information will be available on the Department's website by January 4, 2005. See the ADF&G homepage, under the headings of "highlights" and "regulations", at http://www.adfg.state.ak.us. For those without computer access, please call 1-907- 267-2360 for further information.
Written Public Comments	**Support.**

FP05-15 Executive Summary	
General Description	Revise C&T use determination for the Glennallen Subdistrict of the Upper Copper River District. (Originator: Chickaloon Village Traditional Council)
Proposed Regulation	**Prince William Sound Area - Salmon** *Glennallen Subdistrict of the Upper Copper River District.* — *Salmon* — *Residents of the Prince William Sound Area and residents of Cantwell, **Chickaloon**, Chisana, Dot Lake, Healy Lake, Dot Lake, Northway, Tanacross, Tetlin, Tok and those individuals living along the Alaska Highway from the Alaska/Canadian border to along the Tok Cutoff from Tok to Mentasta Pass, and along the Nabesna Road.*
Region 2 - Southcentral Regional Council Recommendation	**Support.**
Region 9 - Eastern Interior Regional Council Recommendation	**Defer to home region.**
Interagency Staff Committee Recommendation	**Support.**
ADF&G Comments	The Federal Subsistence Board meeting book is being published prior to development of final recommendations and comments by the Alaska Department of Fish and Game. This information will be available on the Department's website by January 4, 2005. See the ADF&G homepage, under the headings of "highlights" and "regulations", at http://www.adfg.state.ak.us. For those without computer access, please call 1-907- 267-2360 for further information.
Written Public Comments	**2 Support.**

REGIONAL ADVISORY COUNCIL RECOMMENDATIONS

SOUTHCENTRAL REGIONAL ADVISORY COUNCIL

Support. The Council unanimously supported the proposal based on evidence from the draft analysis, public testimony, and written comments presented at the meeting.

EASTERN INTERIOR REGIONAL ADVISORY COUNCIL

Defer to the home region. The home region will have a better perspective on this issue.

INTERAGENCY STAFF COMMITTEE RECOMMENDATION

Support the proposals, consistent with the recommendation of the Southcentral Regional Advisory Council.

Justification

Data from the ADF&G Subsistence Division household survey, community studies, and permit returns show that salmon is a resource used by Chickaloon in the Chitina and Glennallen Subdistricts, at levels comparable to other communities with a positive customary and traditional use determination for these Copper River fish species.

COMMENTS

ADF&G

The Federal Subsistence Board meeting book is being published prior to development of final recommendations and comments by the Alaska Department of Fish and Game. This information will be available on the Department's website by January 4, 2005. See the ADF&G homepage, under the headings of "highlights" and "regulations", at http://www.adfg.state.ak.us. For those without computer access, please call 1-907- 267-2360 for further information.

PUBLIC

Support. We support FP05-14 and FP05-15 to allow the community of Chickaloon to have a positive customary and traditional use determination for salmon in the Upper Copper River District and in the Chitina Subdistrict. They have used salmon historically in the Copper River, and should be allowed to have a positive C&T.

Ahtna Tene Nene' Subsistence Committee

Support. The Wrangell-St. Elias National Park Subsistence Resource Commission unanimously supports these two proposals as written. They know that there are kinship ties between residents of Chickaloon and the Copper Basin area and that Chickaloon residents have traditionally used salmon as well as other resources in the area of the park.

Wrangell-St. Elias National Park
Subsistence Resource Commission

STAFF ANALYSIS
FP05-14/15

ISSUES

Proposals FP05-14 and FP05-15 were submitted by the Chickaloon Village Traditional Council, Chickaloon. Proposal 14 requests a customary and traditional use determination for salmon in the Chitina Subdistrict for the residents of Chickaloon. Proposal 15 requests the positive determination in the Glennallen Subdistrict.

DISCUSSION

The Chickaloon Village Traditional Council submitted these proposals to include the residents of Chickaloon in salmon determinations for the Chitina and Glennallen Subdistricts of the Upper Copper River District.

Existing Federal Regulation

Prince William Sound Area

Chitina Subdistrict of the Upper Copper River District - Salmon –

Residents of Cantwell, Chisana, Chistochina, Chitina, Copper Center, Dot Lake, Gakona, Gakona Junction, Glennallen, Gulkana, Healy Lake, Kenny Lake, Lower Tonsina, McCarthy, Mentasta Lake, Nabesna, Northway, Paxson-Sourdough, Slana, Tanacross, Tazlina, Tetlin, Tok, Tonsina, and those individuals that live along the Tok Cutoff from Tok to Mentasta Pass, and along the Nabesna Road.

Glennallen Subdistrict of the Upper Copper River District - Salmon –

Residents of the Prince William Sound Area and residents of Cantwell, Chisana, Dot Lake, Healy Lake, Northway, Tanacross, Tetlin, Tok, and those individuals living along the Alaska Highway from the Alaska/Canadian border to Dot Lake, along the Tok Cutoff from Tok to Mentasta Pass, and along the Nabesna Road.

Proposed Federal Regulation

Chitina Subdistrict of the Upper Copper River District - Salmon –

Residents of Cantwell, ***Chickaloon,*** *Chisana, Chistochina, Chitina, Copper Center, Dot Lake, Gakona, Gakona Junction, Glennallen, Gulkana, Healy Lake, Kenny Lake, Lower Tonsina, McCarthy, Mentasta Lake, Nabesna, Northway, Paxson-Sourdough, Slana, Tanacross, Tazlina, Tetlin, Tok, Tonsina, and those individuals that live along the Tok Cutoff from Tok to Mentasta Pass, and along the Nabesna Road.*

Glennallen Subdistrict of the Upper Copper River District - Salmon –

Residents of the Prince William Sound Area and residents of Cantwell, ***Chickaloon,*** *Chisana, Dot Lake, Healy Lake, Northway, Tanacross, Tetlin, Tok, and those individuals living along the Alaska Highway from the Alaska/Canadian*

border to Dot Lake, along the Tok Cutoff from Tok to Mentasta Pass, and along the Nabesna Road.

Extent of Federal Public Waters

Federal public waters of the Copper River include all waters within the exterior boundaries of the Wrangell-St. Elias National Park and Preserve and the Chugach National Forest, and inland waters adjacent to these exterior boundaries. The Upper Copper River District is comprised of the Chitina Subdistrict and the Glennallen Subdistrict. The Chitina Subdistrict consists of all waters of the mainstem Copper River downstream of the downstream edge of the Chitina-McCarthy Road Bridge to an east-west line crossing the Copper River approximately 200 yards upstream of Haley Creek, as designated by Alaska Department of Fish and Game (ADF&G) regulatory markers, a distance of approximately 10 miles **(Map 1)**. The Glennallen Subdistrict consists of all waters of the mainstem Copper River from the mouth of the Slana River downstream to the downstream edge of the Chitina-McCarthy Road Bridge, a distance of approximately 120 miles.

For the Federal public waters involving the use of the Wrangell-St. Elias National Park, National Park Service regulations identify qualified local rural subsistence users within National Parks by 1) identifying communities or areas which include a significant concentration of rural residents who have customarily and traditionally engaged in subsistence uses within a park or monument, and 2) identifying and issuing subsistence eligibility permits (36 CFR 13.44 permits) to individuals who reside in rural areas outside of a resident zone but who have a personal and family history of use of the park or monument.

Note: For purposes of this discussion, the phrase "Federal public waters" is defined as those waters described under 50 CFR 100.3(b).

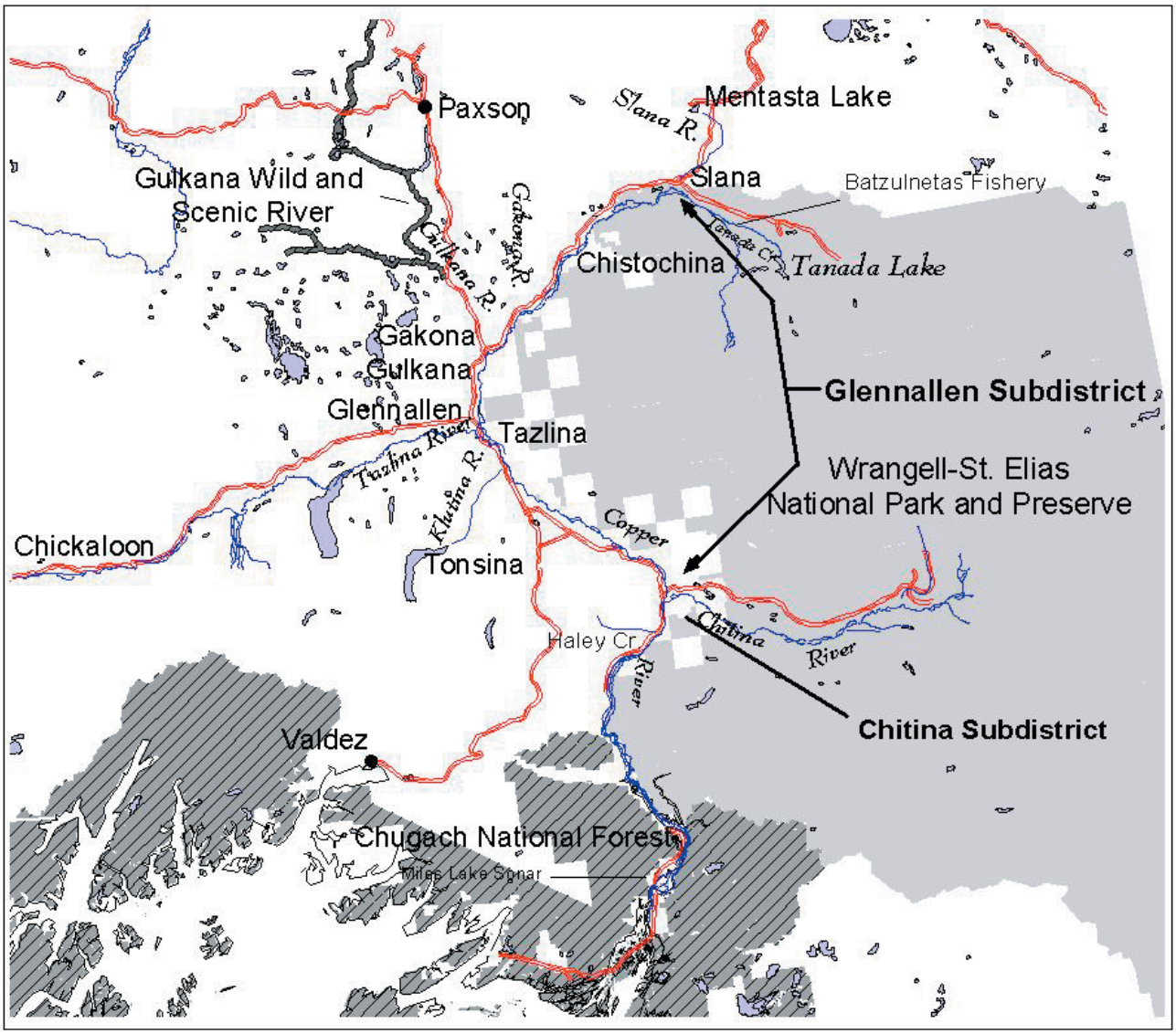
Regulatory History

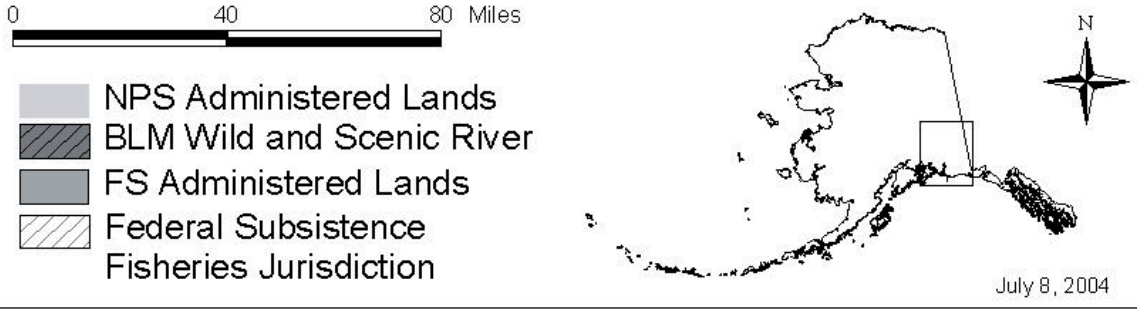
On October 1, 1999, Federal subsistence fishery management began with regulations largely adopted from the relevant sections of the State subsistence fishery regulations. At that time, in the Upper Copper River District, the State recognized the Glennallen Subdistrict as a subsistence fishery and classified the Chitina Subdistrict as a personal use fishery. In the Federal regulations, residents of the Prince William Sound Area were listed as having a positive customary and traditional use of salmon in the Glennallen Subdistrict only. Since December 2000, the Federal Subsistence Board (Board) has made positive customary and traditional use determinations for salmon in the Chitina Subdistrict adding the 26 communities and areas listed above and established season and harvest regulations for the Chitina Subdistrict. In the Glennallen Subdistrict, since December 2000, the Board has added the 11 communities and areas listed above to the original customary and traditional use determination for the residents of the Prince William Sound Area.

The Data

The data used in this analysis were obtained from a 1982 ADF&G Division of Subsistence household survey of the Copper River basin area, which included Chickaloon. The 1982

Proposal FP05-14/15
Map 1
Upper Copper River District





household surveys were further supplemented by a 1984 technical report by Stratton and Georgette. Additional data for the communities with a positive customary and traditional use determination was obtained from the household surveys conducted in 1987 and synthesized in a report prepared by McMillan and Cuccarese in 1988 for the Alaska Over-The-Horizon Backscatter Radar System. The 1987 household surveys did not include Chickaloon. Other Copper Basin information was obtained from the 2002 traditional ecological knowledge study by Simeone and Kari, the ADF&G Division of Subsistence customary and traditional worksheet for the Chitina Subdistrict prepared in 1999, the 1996 Simeone and Fall comprehensive study of the Upper Copper River subsistence salmon fishery, and two 1983 reports by Holly Reckord for the National Park Service.

Community Characteristics

Chickaloon is a community with 213 residents in 87 households (ADCED 2004). For the purposes of comparison, a summary of the 2000 census population data and background information for the communities with positive customary and traditional use determinations can be found in **Table 1**, along with the data relating to Chickaloon. In the 1982 study period, the Chickaloon study area involved all residents living on the highway between miles 68-84 of the Glenn Highway (Stratton and Georgette 1984:44). In the 1980 census, Chickaloon had a population of 136 living in 53 households (Stratton and Georgette 1984:45). Currently, Chickaloon residents have representation from two different community organizations, the traditional council for the Federally recognized tribe, Chickaloon Native Village, and a non-profit organization, the Chickaloon Community Council (ADCED 2004).

The community of Chickaloon, within the Matanuska River drainage, begins at mile 72 of the Glenn Highway (ADCED 2004). The Glenn Highway was constructed in the early 1940s (Stratton and Georgette 1984). Chickaloon is located at the boundary of the Ahtna and Dena'ina Athabaskan traditional territories. Until the late nineteenth century a settlement called *Nuk'din'itnu* was populated by Dena'ina Athabaskans. This settlement was eventually named 'Chickaloon' after the last chief of the village, *Chiklu*. The entire Dena'ina population of this community relocated to Point Possession. Ahtna from Tyone Lake moved into the area and their descendants are still living there (Fall 1981: 400).

The first recorded non-Native settlement in the area dates to 1916 and is associated with the mining of coal and the completion of the Alaska Railroad to Chickaloon in October 1917. Thousands of tons of coal were transported from Chickaloon to Anchorage until the mid 1960s (ADCED 2000, Stirling 1981:13).

The area affected by this proposal includes the traditional territory of the Ahtna Athabaskans, which extends from the Copper River basin westward to Cantwell. Ahtna make up the majority or a significant portion of many of the communities in the Copper River basin area. Dispersed within the Ahtna traditional territory are communities settled by non-Natives. The varied cultural and social components of Chickaloon and the other communities with customary and traditional use determinations for salmon in the Upper Copper River District influence the nature and level of subsistence uses.

Table 1. FP05-14/15. Community Characteristics (ADCED 2004; unless noted in footnote).

Community	Time Depth	2000 Population	Percent Native
Existing Chitina Subdistrict			
Cantwell	Ahtna Traditional	222	27.0%
Chisana	1913	12	0.0%
Chistochina	Ahtna Traditional	93	63.4%
Chitina	Ahtna Traditional	123	48.8%
Copper Center	Ahtna Traditional	362	50.6%
Dot Lake	1940s	19	5.3%
Dot Lake Village	Upper Tanana Traditional	38	57.9%[4]
Gakona	Ahtna Traditional	215	17.7%
Gakona Junction	1940s[1]	ND	ND
Glennallen	1940s	554	12.1%
Gulkana	Ahtna Traditional	88	73.9%
Healy Lake	Upper Tanana Traditional	37	73.0%
Kenny Lake	1960s	410	13.4%
Lower Tonsina	1890/1950-60s	ND	ND
McCarthy	1908	42	0.0%
Mentasta Lake	Ahtna Traditional	142	71.1%
Nabesna Road	1933[2]	37[3]	14.7%[3]
Nabesna	1909[1]	ND	ND
Northway	1940s	95	82.1%
Northway Junction	1940s	72	58.3%
Northway Village	Upper Tanana Traditional	107	95.3%
Paxson	1906	43	0.0%
Slana	1923/1980s	124	15.3%
Tanacross	Upper Tanana Traditional	140	90.0%
Tazlina	Ahtna Traditional	149	30.2%
Tetlin	Upper Tanana Traditional	117	97.4%
Tok	1942	1,393	19.0%
Tok Cutoff	1940s[1]		
Tonsina	1902	92	9.8%
Additional Communities Glennallen Subdistrict			
Chenega Bay	Alutiiq Traditional	86	77.9%
Cordova	Traditional/1790/1906	2,454	15.0%
Tatitlek	Alutiiq Traditional	107	85.0%
Whittier	1940s	182	12.6%
Community in the C&T Request			
Chickaloon	Traditional/1916	213	16.9%

[1]Reckford 1983b
[2]Case 1986
[3]CPDB 1982 Nabesna Road
[4]US Census Bureau PL 94-171 Redistricting, ADOL&WD 2001
ND = No Data

Eight Factors for Determining Customary and Traditional Uses

A community or area must generally exhibit the following eight factors, which exemplify customary and traditional use. The Board will make customary and traditional use determinations based on an application of these eight factors (50 CFR 100.16(b) and 36 CFR 242.16(b)). In addition, the Board will take into consideration the reports and recommendations of any appropriate Regional Advisory Council (Council) regarding customary and traditional use of subsistence resources (50 CFR 100.16(c) and 36 CFR 242.16(c)).

Information presented for Factors 2, 5, and 6 was available in summary materials of studies of the Copper River basin communities, not on a specific community level. These materials are included in this analysis since the residents of Chickaloon were included in the 1982 ADF&G Division of Subsistence household studies, and the tribal component of the Chickaloon community has it roots in Ahtna culture (Stratton and Georgette 1984, Fall 1981).

1. A long-term, consistent pattern of use, excluding interruptions beyond the control of the community or area

For communities with a customary and traditional use determination in the Chitina Subdistrict, data from ADF&G household surveys show that from 23% to 100% of those households used salmon (**Table 2**). The estimated amount of salmon harvested on a community basis ranges from 46 to 51,006 pounds. The annual harvest of salmon on a per capita basis ranges from 2 to 239 pounds. For Chickaloon, based on these data, 67% of the households used salmon, an estimated 2,697 pounds of salmon were harvested by the whole community, and 39 pounds were estimated to be harvested on a per capita basis. This level of salmon use reflects levels by other communities, not on the Copper River, with positive customary and traditional use determinations.

In 1977, State regulations created the two separate subdistricts, Glennallen and Chitina. By creating differing gear types and limits for these subdistricts, State regulators attempted to balance local and non-local uses in the Upper Copper River District. The division between the two uses was mainly by gear type (ADF&G 1999). State regulations continue to only allow the use of dip nets in the Chitina Subdistrict. Data available from permits issued from 1988-2002 for most of the communities with customary and traditional use determinations, along with permit data for Chickaloon is presented in **Table 3**. This level is comparable to permits issued in communities with a positive customary and traditional use determination. While this permit data only shows use of the Upper Copper River District for the years 1988-2002, references in the 1984 report describes travel to the Copper River as a strategy for salmon harvesting by residents of Chickaloon (Stratton 1984: 46). Also long term connection to the Copper River Basin may be inferred by the kinship ties and past knowledge of the Ahtna from Tyone Lake who re-settled in Chickaloon in the late nineteenth century noted above in the community characteristics.

2. A pattern of use recurring in specific seasons for many years

In the Copper River, before regulations, people harvested Chinook, sockeye, and coho salmon when the runs arrived. Chinook and sockeye salmon start appearing by late May and early June. Coho salmon appear at the end of the season in August (De Laguna & McClellan 1981). In 1977,

Table 2. FP05-14/15. Use and harvest data for salmon (ADF&G 2001b).

Community*	Est. # of HH	% HH Using	% HH Receiving	% HH Giving	Community Harvest (Pounds)	Per Capita Pounds
Chitina	19	72.2	16.7	33.3	8,337	239
Chistochina	29	82.1	50.0	14.3	10,197	130
Copper Center	161	90.0	59.2	29.9	51,006	104
McCarthy Road	19	88.2	41.2	17.6	3,816	100
Nabesna Road / Nabesna	13	100.0	66.7	50.0	3,435	93
Slana	25	95.5	36.4	18.2	4,963	87
Gulkana	22	85.0	45.0	15.0	5,777	86
Lower Tonsina*	9	100.0	ND	ND	2,541	73
Kenny Lake	93	64.8	25.9	11.2	21,616	67
Tonsina	96	83.3	36.7	18.6	19,238	65
Paxson	17	64.3	50.0	28.6	1,730	45
Glennallen	170	94.9	62.8	37.2	19,136	41
Tanacross	34	85.2	81.5	11.1	3,598	39
Tazlina	120	89.9	67.4	22.1	13,783	38
Tok	367	79.4	58.3	8.8	38,147	36
Mentasta Lake	25	70.8	58.3	20.8	2,736	36
Gakona/ Gakona Junction	70	68.1	36.2	21.7	6,074	29
Dot Lake	20	80.0	73.3	13.3	1,329	20
Sourdough	10	77.8	55.6	22.2	423	17
Northway	90	60.0	53.3	6.7	4,684	14
Cantwell*	47	23.3	ND	ND	975	7
Chisana	6	83.3	83.3	0.0	46	4
Tetlin	29	24.8	20.0	4.8	287	2
Healy Lake	ND	ND	ND	ND	ND	ND
Tok Cutoff	ND	ND	ND	ND	ND	ND
Community in the C&T request						
Chickaloon*	**87**	**66.7**	**ND**	**ND**	**2,697**	**39**

*All study years are 1987, except Chickaloon, Cantwell and Lower Tonsina, where the study year is 1982
ND = No Data

the creation of the two subdistricts marked the first time there were differing regulatory season lengths in the Upper Copper River District (Fall and Simeone 1999).

3. A pattern of use consisting of methods and means of harvest which are characterized by efficiency and economy of effort and cost, conditioned by local characteristics

The traditional Ahtna methods of harvesting salmon included basket dip nets, platform fish weirs, funnel-shaped basket traps, and salmon spears or harpoons. The fishwheel was introduced in 1910 and became the preferred subsistence method used in the Copper River basin; a 1921 harvest survey documented 170 fishwheel operators on the Copper River (De Laguna and McClellan 1981, Simeone and Fall 1996). Federal regulations allow the use of fishwheel, dip nets, and rod and reel in both subdistricts. Reckord's study of subsistence uses in this region noted that in the development of use patterns by non-Natives in the late 19th and early 20th century, the new settlers first learned about local uses from Natives (Reckord 1983a: 166).

Residents of Chickaloon were described as using fishwheels and rod and reel for harvesting salmon in the Copper River drainage (Stratton and Georgette 1984). Permit data for Chickaloon residents in the Chitina Subdistrict, Table 3, provides contemporary documentation of the use of dip nets (ADF&G 2001a).

4. The consistent harvest and use of fish or wildlife as related to past methods and means of taking: near, or reasonably accessible from the community or area

Residents of Chickaloon traveled to the Copper River to fish with fishwheels and rod and reel in the tributaries, to the Kenai River for the dip net fishery, and used the rod and reel fisheries near Palmer and Willow (Stratton and Georgette 1984:46). Harvest area mapping, completed for 8 of the 30 Chickaloon households surveyed in 1982, showed salmon harvesting at the mouth of the Knik River (ADF&G 1985: Map 6). Although use of the Chitina Subdistrict is not described in the 1982 study, documentation of the use of the Chitina Subdistrict is available through permit data mentioned in Factor 1 and shown in **Table 3**.

The proponents also provided information about recent harvests in the Glennallen Subdistrict. The Chickaloon Village Traditional Council has operated an educational community fishwheel since 1999. The reported harvest for the first year was 6 salmon, and then harvests of 273, 140, 91, and 113 salmon were reported for the following years, 2000-2003 respectively (OSM 2004).

Table 3. FP05-14/15. Permit history for the years 1988-2002 (ADF&G 2001b).

Glennallen Subdistrict	Permits returned	Total salmon	Harvest /permit		Chitina Subdistrict	Permits returned	Total salmon	Harvest /permit
Cantwell	26	884	34		Cantwell	32	385	12
Chistochina	6	614	102		Chistochina	ND	ND	ND
Chitina	288	32,811	114		Chitina	73	798	11
Copper Center	1702	164,069	96		Copper Center	240	2,884	12
Cordova	5	1,051	210		Cordova	No C&T		
Dot Lake	19	492	26		Dot Lake	14	108	8
Gakona	709	86,429	122		Gakona	21	167	8
Glennallen	1799	144,758	80		Glennallen	203	2,092	10
Gulkana	4	446	112		Gulkana	ND	ND	ND
Kenny Lake	30	2,644	88		Kenny Lake	ND	ND	ND
McCarthy	37	579	16		McCarthy	13	109	8
Mentasta Lake	17	1,899	112		Mentasta Lake	ND	ND	ND
Nabesna Road	5	92	18		Nabesna Road	ND	ND	ND
Northway	71	5,550	78		Northway	12	76	6
Paxson	27	1,205	45		Paxson	12	183	15
Slana	225	25,525	113		Slana	9	44	5
Tanacross	9	215	24		Tanacross	ND	ND	ND
Tazlina	11	1,427	130		Tazlina	ND	ND	ND
Tetlin	1	0	0		Tetlin	4	7	2
Tok	745	51,188	69		Tok	232	2,612	11
Community in C&T request								
Chickaloon	11	1,328	121		Chickaloon	56	690	12

The Chickaloon Village Traditional Council sponsored an educational fish camp again this summer from June 27-30. This year, the tribe's Environmental Protection department was the organizer of the camp; in the past other departments organized the activities (Dryden 2004 pers. comm.). On the first night, there were 36 participants in the fish camp. The activities involved learning about fishing with a fishwheel and fish processing along with other activities such as birch bark basket making and traditional songs. The participants were from the community of Chickaloon at large and were not limited to tribal members. On the second day, other participants came and went, providing supplies and helping to set up the camp site. The fishwheel site that the Tribe used belongs to John and Irene Goodlataw, Ahtna from Tazlina. For each year of operation, the Goodlataws have provided traditional knowledge about the Ahtna manner of fish processing. Others at the camp also shared their fish processing knowledge (Petrivelli 2004). The fish processing techniques used by the Goodlataws were similar to those described in the recent study of traditional Ahtna salmon fishing (Simeone and Kari 2002).

5. A means of handling, preparing, preserving, and storing fish or wildlife which has been traditionally used by past generations, including consideration of alteration of past practices due to recent technological advances, where appropriate

Traditional methods of processing salmon include drying, smoking, boiling, mixing with berries, and fermenting. The current methods include making strips, drying, smoking, canning, freezing, pickling, and vacuum packing (Simeone and Fall 1996). The more traditional methods involve more time, special conditions, and knowledge for successful operations. These efforts are usually undertaken by fishwheel users with the longest history of involvement in the fishery (Stratton 1982). As stated in the Factor 4, Ahtna traditional processing techniques are being taught to all members of the community at the educational fishwheel. Other members of the community are encouraged to also share their knowledge. Salmon were dried, smoked, canned, and eaten fresh at the fish camp (Petrivelli 2004).

6. A pattern of use which includes the handing down of knowledge of fishing and hunting skills, values, and lore from generation to generation

The passing down of subsistence harvesting knowledge, skills, and associated values from one generation to the next, and the sharing of this knowledge among all the residents of Copper River basin communities is common. For both Natives and non-Natives, contemporary hunting parties are often made up of relatives and sometimes of groups of peers. Recent migrants to the area tend to learn locations and methods from their peers (Stratton 1982, Reckord 1983b). This mixed pattern of generational teaching and peer sharing was exhibited at the 2004 Chickaloon fish camp (Petrivelli 2004).

7. A pattern of use in which the harvest is shared or distributed within a definable community of persons

Traditional methods of sharing involve potlatches, kinship connections, and trading networks between communities. **Table 2** contains data from household surveys documenting the receiving and giving of salmon in the communities that have a positive customary and traditional use determination. Data was not available for Chickaloon from the 1982 household surveys, but the proponents stated, "Much of the Copper River salmon harvested by residents of Chickaloon is

distributed to other area residents who are unable to participate in the harvest activities (OSM 2004)."

8. A pattern of use which relates to reliance upon a wide diversity of fish and wildlife resources of the area and which provides substantial cultural, economic, social, and nutritional elements to the community or area

The 1982 and 1987 household surveys of Copper River basin communities with customary and traditional use for salmon in the Chitina Subdistrict showed a range of household use of all subsistence resources from 91.7% to 100%; Chickaloon household use, at 100%, falls within this range (**Table 4**). The estimated per capita harvest of all subsistence resources in these communities ranged from 95 to 342 pounds per year, while Chickaloon had a per capita annual harvest of 224 pounds (ADF&G 2001b).

The diversity of resources or the mean number of resources used by Chickaloon residents has been estimated at 7.4. This value falls within the range, 6.0 to 16.6, of diversity of resources used by the communities with a positive determination for salmon (Stratton and Georgette 1984).

Table 4. FP05-14/15. Overall subsistence household use, annual per capita harvest, and diversity of resources used (ADF&G 2001b, Marquette et al. 1991, Stratton and Georgette 1984).

Community	% Household Use	Per Capita Pounds	Diversity of Resources Used
Cantwell	100.0	130	6.1
Chisana	100.0	128	16.6
Chistochina	96.4	262	10.6
Chitina	94.4	342	8.3
Copper Center	100.0	173	6.0
Dot Lake	100.0	116	10.7
Gakona/ Gakona Junction	92.7	95	11.6
Glennallen	100.0	99	6.4
Gulkana	95.0	152	6.8
Healy Lake	ND	ND	ND
Kenny Lake	100.0	136	9.0
Lower Tonsina	100.0	128	11.4
McCarthy Road	100.0	230	10.2
Mentasta Lake	91.7	125	11.6
Nabesna Road/ Nabesna	100.0	250	14.1
Northway	100.0	278	11.8
Paxson	92.9	289	11.4
Slana	95.5	249	11.6
Sourdough	100	118	11.4
Tanacross	96.3	250	10.4
Tazlina	100.0	107	NA
Tetlin	100.0	214	10.3
Tok	94.1	149	8.6
Tok Cutoff	ND	ND	ND
Tonsina	91.7	156	8.2
Community in the C&T Request			
Chickaloon	**100.0**	**224**	**8.1**

Effects of the Proposal

The residents of the Chickaloon area have a history of fishing in both the Glennallen and Chitina Subdistricts. While under Federal subsistence fishing regulations fishwheels may be used in the Chitina Subdistrict, the terrain greatly limits the use of this gear.

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FP05-10 Executive Summary	
General Description	Establish limits on amount of customary trade allowed in the Cook Inlet Fisheries Management Area. (Originator: Cooper Landing Fish & Game Advisory Committee)
Proposed Regulation	**Cook Inlet Area – Salmon** *§___.27(i)(11) Transactions between rural residents. Rural residents may exchange in customary trade subsistence-harvested fish, their parts, or their eggs, legally taken under the regulations in this part, for cash from other rural residents. The Board may recognize regional differences and define customary trade differently for separate regions of the State.* ***(ii) Cook Inlet Fishery Management Area – In the Cook Inlet Fishery Management Area, the total cash value per household of salmon and other fish taken within Federal jurisdiction of the Federal Subsistence Board and exchanged in customary trade to rural residents may not exceed $500 annually.*** *(12) Transactions between a rural resident and others. In customary trade, a rural resident may trade fish, their parts, or their eggs, legally taken under the regulations in this part, for cash from individuals other than rural residents if the individual who purchases the fish, their parts, or their eggs uses them for personal or family consumption. If you are not a rural resident, you may not sell fish, their parts, or their eggs taken under the regulations in this part. The Board may recognize regional differences and define customary trade differently for separate regions of the State.* ***(ii) Cook Inlet Fishery Management Area – The total cash value per household of salmon and other fish exchanged between rural residents and nonrural residents may not exceed $400 annually and must be recorded on a customary trade record-keeping form.***
Southcentral Regional Advisory Council Recommendation	**Oppose.**
Interagency Staff Committee Recommendation	**Oppose.**
ADF&G Comments	The Federal Subsistence Board meeting book is being published prior to development of final recommendations and comments by the Alaska Department of Fish and Game. This information will be available on the Department's website by January 4, 2005. See the ADF&G homepage, under the headings of "highlights" and "regulations", at http://www.adfg.state.ak.us. For those without computer access, please call 1-907- 267-2360 for further information.
Written Public Comments	**None.**

REGIONAL ADVISORY COUNCIL RECOMMENDATIONS

SOUTHCENTRAL REGIONAL ADVISORY COUNCIL

Oppose. The Council opposes establishing a limit due to low participation and harvest in the fishery. The Council felt this would impose a limit on everyone in the Cook Inlet Area while it appears to be a proposal from only a few individuals.

INTERAGENCY STAFF COMMITTEE RECOMMENDATION

Oppose the proposal, consistent with the recommendation of the Southcentral Regional Advisory Council.

Justification

Placing dollar limits in regulation for a practice that has very low levels of participation, or is possibly non-existent in the Cook Inlet Area appears to be unnecessary at this time. The current harvest levels being reported do not suggest that further protections or limitations are needed.

Adopting this proposal would primarily serve as a proactive action to create a regulation prior to a potential problem. Regional Council member discussions helped focus the issue on what is the most appropriate recommendation for this area.

COMMENTS

ADF&G

The Federal Subsistence Board meeting book is being published prior to development of final recommendations and comments by the Alaska Department of Fish and Game. This information will be available on the Department's website by January 4, 2005. See the ADF&G homepage, under the headings of "highlights" and "regulations", at http://www.adfg.state.ak.us. For those without computer access, please call 1-907- 267-2360 for further information.

PUBLIC

None.

STAFF ANALYSIS
FP05-10

ISSUES

Proposal FP05-10 was submitted by the Cooper Landing Fish and Game Advisory Committee and requests regional modifications to the customary trade regulations for the Cook Inlet Area. The proponent requests that in the Cook Inlet Area, customary trade of salmon and other fish between rural residents be limited to an annual total cash value of $500 per household. In addition, they propose that in the Cook Inlet Area, customary trade of salmon and other fish between rural residents and other individuals be limited to an annual cash value of $400 per household, and that these sales be recorded on a form.

DISCUSSION

The proposed changes are intended to limit the amount of fish sold for customary trade in the Cook Inlet Area. The proponent believes this would help with enforcement of customary trade regulations, and help prevent abuses. The proponent also submitted a proposal (FP 04-18) in 2003 to not allow any customary trade of fish, their parts, or their eggs on the Kenai Peninsula. The Federal Subsistence Board (Board) rejected that proposal noting that customary trade is specifically allowed for in ANILCA, unless there are justifiable reasons for limitations.

If this proposal were adopted, customary trade in the Cook Inlet Area would be limited to the same regional modifications adopted for the Bristol Bay Area in 2003, except that this proposal would apply to all fish, not only salmon.

From 1952 through 2001, subsistence fisheries were prohibited in most areas of the Kenai Peninsula (Fall and Stanek 1990). Fishery resources for the Cook Inlet Area have been allocated primarily to commercial, sport, or personal use fisheries. However, the State of Alaska does allow for some subsistence fisheries in southern Cook Inlet near Seldovia and Port Graham and in the Tyonek Subdistrict, on the west side of Cook Inlet. The 2002 season was the first year subsistence fishing was allowed under Federal regulations for the Cook Inlet Area, with provisions that parallel State of Alaska sport fishing regulations.

Existing Federal Regulation

§___.27(i)(11) Transactions between rural residents. Rural residents may exchange in customary trade subsistence-harvested fish, their parts, or their eggs, legally taken under the regulations in this part, for cash from other rural residents. The Board may recognize regional differences and define customary trade differently for separate regions of the State.

(i) Bristol Bay Fishery Management Area - The total cash value per household of salmon taken within Federal jurisdiction in the Bristol Bay Fishery Management Area and exchanged in customary trade to rural residents may not exceed $500.00 annually.

(ii) [Reserved]

(12) Transactions between a rural resident and others. In customary trade, a rural resident may trade fish, their parts, or their eggs, legally taken under the regulations in this part, for cash from individuals other than rural residents if the individual who purchases the fish, their parts, or their eggs uses them for personal or family consumption. If you are not a rural resident, you may not sell fish, their parts, or their eggs taken under the regulations in this part. The Board may recognize regional differences and define customary trade differently for separate regions of the State.

(i) Bristol Bay Fishery Management Area – The total cash value per household of salmon taken within Federal jurisdiction in the Bristol Bay Fishery Management Area and exchanged in customary trade between rural residents and individuals other than rural residents may not exceed $400.00 annually. These customary trade sales must be immediately recorded on a customary trade recordkeeping form. The recording requirement and the responsibility to ensure the household limit is not exceeded rests with the seller.

(ii) [Reserved]

Proposed Federal Regulation

§___.27(i)(11) Transactions between rural residents. Rural residents may exchange in customary trade subsistence-harvested fish, their parts, or their eggs, legally taken under the regulations in this part, for cash from other rural residents. The Board may recognize regional differences and define customary trade differently for separate regions of the State.

(i) Bristol Bay Fishery Management Area – The total cash value per household of salmon taken within Federal jurisdiction in the Bristol Bay Fishery Management Area and exchanged in customary trade to rural residents may not exceed $500.00 annually.

(ii) Cook Inlet Fishery Management Area – In the Cook Inlet Fishery Management Area, the total cash value per household of salmon and other fish taken within Federal jurisdiction of the Federal Subsistence Board and exchanged in customary trade to rural residents may not exceed $500 annually.

(12) Transactions between a rural resident and others. In customary trade, a rural resident may trade fish, their parts, or their eggs, legally taken under the regulations in this part, for cash from individuals other than rural residents if the individual who purchases the fish, their parts, or their eggs uses them for personal or family consumption. If you are not a rural resident, you may not sell fish, their parts, or their eggs taken under the regulations in this part. The Board may recognize regional differences and define customary trade differently for separate regions of the State.

(i) Bristol Bay Fishery Management Area – The total cash value per household of salmon taken within Federal jurisdiction in the Bristol Bay Fishery Management Area and exchanged in customary trade between rural residents and individuals other than rural residents may not exceed $400.00 annually. These customary trade sales must be immedi-

ately recorded on a customary trade recordkeeping form. The recording requirement and the responsibility to ensure the household limit is not exceeded rests with the seller.

(ii) Cook Inlet Fishery Management Area – The total cash value per household of salmon and other fish exchanged between rural residents and nonrural residents may not exceed $400 annually and must be recorded on a customary trade record-keeping form.

Extent of Federal Public Waters

The Cook Inlet Area includes all waters of Alaska which drain into Cook Inlet that are enclosed by a line extending east from Cape Douglas (58°51'06'' N. Lat.) and a line extending south from Cape Fairfield (148°50'15'' W. Long.). The area affected by this proposal includes Federal public waters in the Cook Inlet Area that drain into Cook Inlet and are within or adjacent to the boundaries of the Kenai National Wildlife Refuge, Lake Clark National Park and Preserve, Denali National Park and Preserve, Chugach National Forest, and non-navigable waters on BLM lands. The Alaska Maritime National Wildlife Refuge boundary surrounding Chisik Island will no longer be subject to Federal subsistence fishery regulations for the Cook Inlet Area beginning in April 2005 (DOI Solicitor 2002).

NOTE: For purposes of this discussion, the phrase "Federal public waters" is defined as those waters described under 50 CFR 100.3(b).

Customary and Traditional Use Determination

Current Federal subsistence fisheries regulations provide a positive customary and traditional use determination for rural residents of the Cook Inlet Area for all fish except salmon, Dolly Varden, trout, char, grayling, and burbot. There are no specific determinations for salmon, Dolly Varden, trout, char, grayling, and burbot. Grayling and burbot may not be taken for subsistence purposes. Therefore, all rural Alaskan residents are eligible to harvest salmon, Dolly Varden, trout, and char for subsistence use in the Cook Inlet Area, subject to Federal subsistence fishing permit requirements. In 2001, the Board deferred making specific customary and traditional use determinations for these species until more information is available. The final report of a study to provide more information on use patterns for residents of the Kenai Peninsula is available for review and will be used to help make future regulations for Cook Inlet Federal subsistence fisheries.

Regulatory History

Title VIII of ANILCA specifically identifies customary trade as a legitimate subsistence use (ANILCA Sec. 803). The term "customary trade" is defined by regulation as the *"…exchange for cash of fish and wildlife resources regulated in this part, not otherwise prohibited by Federal law or regulation, to support personal or family needs, and does not include trade which constitutes a significant commercial enterprise"* (50 C.F.R. 100.4). While the exchange of subsistence resources as customary trade may involve fish, shellfish or wildlife resources, this proposal addresses only the customary trade of fish.

Prior to October 1, 1999, Federal subsistence regulations applied only to subsistence fisheries in non-navigable waters. The regulations in effect at that time contained the same definition for "customary trade" cited above, but also included the following prohibition: *"No person may buy or sell fish, their parts, or their eggs which have been taken for subsistence uses, unless, prior to the sale, the prospective buyer or seller obtains a determination from the Federal Subsistence Board that the sale constitutes customary trade" [50 C.F.R. 100.26(c)(1) (1995)].*

In January 2003, the Board adopted a revised set of customary trade regulations in order to provide a more enforceable regulatory framework for this long-standing subsistence practice. When adopting the rule, the Board sought to accommodate customary and traditional practices to the extent reasonably practicable, while preventing abuses of the subsistence preference in the form of significant commercial transactions. The Board also recognized that it would probably be necessary to make future modifications to the final rule to accommodate regional differences in permissible customary trade transactions. This proposal represents such a regional modification.

Except for herring roe-on-kelp in Southeast Alaska, State regulations do not allow the exchange of subsistence-caught fish for cash. However, this has not been actively enforced for small-scale traditional exchanges.

Under Federal regulations, exchange of subsistence-caught fish for cash is allowed statewide, as described in the regulations beginning on page one of this analysis. If fish are processed (i.e. headed, filleted, frozen, dried, salted, smoked, canned, etc.), State health regulations require that the processing meets food health standards. The customary trade regulations do not exempt those involved from complying with regulations on the processing of foods. However, both State and Federal authorities recognize that rural residents not licensed as fisheries businesses have historically processed and sold subsistence fish in limited non-commercial quantities in many areas of Alaska. The priority for Federal enforcement of these provisions is intended for large-scale cash sales that are not consistent with customary and traditional practices. It would be rare, but technically possible, for a subsistence user to meet the government food health standards and hold the necessary processing permits, and yet not be a licensed fishery business. Licensed fishery businesses are excluded from participating in customary trade under Federal regulations.

Federal subsistence regulations require qualified users to have a Federal subsistence fishing permit to harvest salmon, Dolly Varden, trout, or char for subsistence purposes in the Cook Inlet Area. The permit requirements have the same seasons, harvest and possession limits, and methods and means as those for taking the same species under State sport fishing regulations (5AAC 56).

Harvest History

Federal subsistence fishing permits have been required in the Cook Inlet Area since 2002 and participation has been very low so far. In 2002, 2 permits were issued with a reported harvest of 36 salmon (**Table 1**). In 2003, nine permits were issued with a reported harvest of three sockeye salmon from the Russian River by one permit holder (Sonnevil 2003 and 2004, pers. comm.). Eight permit holders reported no harvest under the authority of their Federal subsistence fishing permit. Three permits have been issued in 2004.

Table 1. Federal subsistence fishing permits and reported harvests for the Cook Inlet Area in 2002 and 2003 (Sonnevill, pers. comm. 2003 and 2004).

Year	Permits Issued	Sockeye Salmon	Chinook Salmon	Coho Salmon	Chum Salmon	Total Salmon
2002	2	5	0	31	0	36
2003	9	3	0	0	0	3
2004	3	14	0	0	0	14

To engage in customary trade, any subsistence harvested fish that is sold must be harvested under Federal regulations, in Federal public waters. Salmon, Dolly Varden, trout, or char can only be harvested for subsistence uses by rural residents under the authority of a Federal subsistence fishing permit in the Cook Inlet Area.

Effects of the Proposal

The proposed changes to customary trade of fish in the Cook Inlet Area would apply to exchanges between rural residents and exchanges with other individuals. Customary trade between rural residents would be restricted to an annual limit of $500 per household without a recording requirement. The proposed dollar limit of $500 between rural residents would be difficult to enforce without a recording requirement. Customary trade of fish with other individuals would be restricted to an annual limit of $400 per household and these exchanges would be required to be recorded. Any recording requirements could be added to the Federal subsistence fishing permit for the Cook Inlet Area.

These are the same dollar limits the Board adopted for the Bristol Bay Area in 2003, except that the proposed limits for the Cook Inlet Area would apply to all fish not only to sales of salmon.

The level of documented Federal subsistence fishing activity for the Cook Inlet Area is very low with only two permits issued in 2002, nine issued in 2003, and three so far this year. The Kenai Peninsula has very high levels of commercial, sport and personal use fishing activities by those other than rural Alaskan residents, since the area generally has healthy fish populations and is easily accessible by road. This access could enhance the opportunity for customary trade exchanges of fish for cash. However, few fish are being taken under the current Federal subsistence fishery regulations which provide protections for fish populations in the Cook Inlet Area.

The dollar value limit being proposed in the Cook Inlet Area is not directly related to current or historical amounts of fish exchanged for cash, but is a limit the proponent has requested to prevent exchanges which could be perceived as excessive or an abuse. Adopting the proposed regulations would help prevent large scale sales of fish under the customary trade regulations and could help prevent future abuses.

However, the amount of customary trade occurring in the Cook Inlet Area is probably very low or non existent, especially given the reported participation, harvest levels, and required health regulations. Federal subsistence fishing regulations for the Cook Inlet Area have only been in place for two years with State regulated subsistence fisheries being very limited for this area of

the state. This is in sharp contrast to the well established and current subsistence fisheries in the Bristol Bay Area, for example, which is the area from which the dollar limits are being proposed.

Placing dollar limits in regulation for a practice that appears to be very low to non-existent may be unnecessary. The current harvest levels being reported do not suggest that further limitations are needed.

If adopted, the additional regulations would create a need to inform subsistence users of the additional requirements. The cash limits would apply only to the customary trade of fish taken under the authority of a Federal subsistence fishing permit and processed in compliance with State health requirements. This would place the burden on users who do not hold the required health permits to record cash exchanges for unprocessed fish only. Any processed fish sold would still be an illegal sale, unless the required health regulations were followed, since food health issues, including fish processing, are controlled by the State of Alaska.

Current customary trade regulations are challenging to effectively communicate. If adopted, there would need to be a focused outreach effort to clarify any regulatory changes to the users.

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FP05-09 Executive Summary	
General Description	Remove permit requirement for char. (Originator: Bristol Bay Native Association)
Proposed Regulation	**Bristol Bay Area – Char** *§___.27(i)(5)(xiv) You may take salmon ~~and char~~ only under authority of a subsistence fishing permit. You may take rainbow trout only under authority of a Federal subsistence fishing permit; permit conditions and systems to receive special protection will be determined by the local Federal fisheries manager in consultation with ADF&G and local users.* *(xv) Only one subsistence fishing permit for salmon, ~~one for char,~~ and one for rainbow trout may be issued to each household per year.*
Region 4 - Bristol Bay Regional Council Recommendation	**Support with modification** to eliminate the Federal subsistence permit requirement to harvest char and rainbow trout.
Interagency Staff Committee Recommendation	**Support with modification** to also eliminate the requirement for the rainbow trout permit. The proposed regulation as modified would read: **Bristol Bay Area – Char** *§___.27(i)(5)(xiv) You may take salmon ~~and char~~ only under authority of a subsistence fishing permit. ~~You may take rainbow trout only under authority of a Federal subsistence fishing permit; permit conditions and systems to receive special protection will be determined by the local Federal fisheries manager in consultation with ADF&G and local users.~~* *(xv) Only one subsistence fishing permit for salmon~~, one for char, and one for rainbow trout~~ may be issued to each household per year.*
ADF&G Comments	The Federal Subsistence Board meeting book is being published prior to development of final recommendations and comments by the Alaska Department of Fish and Game. This information will be available on the Department's website by January 4, 2005. See the ADF&G homepage, under the headings of "highlights" and "regulations", at http://www.adfg.state.ak.us. For those without computer access, please call 1-907- 267-2360 for further information.
Written Public Comments	**None.**

REGIONAL ADVISORY COUNCIL RECOMMENDATIONS

BRISTOL BAY REGIONAL COUNCIL

Support with modification. The Bristol Bay Subsistence Regional Advisory Council voted to adopt FP05-09 with modification. The proposal requests the removal of the subsistence permit requirement to harvest char in the Bristol Bay Area. The Council modified the proposal to also eliminate the requirement for a rainbow trout permit.

The modified proposed regulation should read:

> *§___.27 (i) (5) (xiv) You may take salmon and char only under authority of a subsistence fishing permit. ~~You may take rainbow trout only under authority of a Federal subsistence fishing permit; permit conditions and systems to receive special protection will be determined by the local Federal fisheries manager in consultation with ADF&G and local users.~~*
>
> *(xv) Only one subsistence fishing permit for salmon~~, one for char, and one for rainbow trout~~ may be issued to each household per year.*

The Council's rational and justification are that eliminating the Federal subsistence permit requirement to harvest char and rainbow trout would reduce confusion for subsistence users and align with current State regulations. Additionally, current subsistence users are at risk for potential fines because subsistence users are unaware of this regulation. Rainbow trout and char are not a targeted species by most people but are caught incidentally.

INTERAGENCY STAFF COMMITTEE RECOMMENDATION

Support with modification, consistent with the recommendation of the Bristol Bay Regional Advisory Council, to also eliminate the requirement for the rainbow trout permit and permit conditions.

The modified proposed regulation should read:

> *§___.27 (i) (5) (xiv) You may take salmon and char only under authority of a subsistence fishing permit. ~~You may take rainbow trout only under authority of a Federal subsistence fishing permit; permit conditions and systems to receive special protection will be determined by the local Federal fisheries manager in consultation with ADF&G and local users.~~*
>
> *(xv) Only one subsistence fishing permit for salmon~~, one for char, and one for rainbow trout~~ may be issued to each household per year.*

Justification

The proposed regulations, as modified, would remove the requirement for a Federal fishing permit to harvest rainbow trout or char in the Bristol Bay Area. This would also result in the elimination of permits to harvest non-salmon fish under State or Federal subsistence fishing regulations. Subsistence users would still be allowed to use rod and reel under Federal regulations and rainbow trout harvest limits would remain in place as a conservative measure to help protect that resource. The current requirement unnecessarily places users at risk of violation if they subsistence fish for rainbow trout or char without a permit due to lack of knowledge about the regulation. Periodic household surveys are a more effective alternative to permits and result in a more comprehensive harvest estimate that includes all sources, not just fish taken in directed subsistence fisheries. However, this does emphasize the need to prioritize funding to continue these studies on a regular basis. The existing permit requirement for salmon would continue to be in place as required and implemented by the Alaska Department of Fish and Game.

COMMENTS

ADF&G

The Federal Subsistence Board meeting book is being published prior to development of final recommendations and comments by the Alaska Department of Fish and Game. This information will be available on the Department's website by January 4, 2005. See the ADF&G homepage, under the headings of "highlights" and "regulations", at http://www.adfg.state.ak.us. For those without computer access, please call 1-907- 267-2360 for further information.

PUBLIC

None.

STAFF ANALYSIS
FP05-09

ISSUES

Proposal FP05-09, submitted by the Bristol Bay Native Association, requests the removal of the subsistence permit requirement to harvest char in the Bristol Bay Area.

DISCUSSION

The proposed regulation would eliminate the Federal subsistence fishing permit to harvest char in the Bristol Bay Area. In 2003, the Alaska Board of Fisheries eliminated the requirement for a State issued subsistence permit to fish for char or trout in the Bristol Bay Area. The proponent states that most subsistence users are not aware of the char permit requirement and are unknowingly at risk of violation. The proponent chose not to include the elimination of the Federal subsistence permit requirement to harvest rainbow trout for the Bristol Bay Area with this proposal. They felt it would be too controversial (Nicholson, pers. comm. 2004).

For over 20 years, State subsistence regulations for the Bristol Bay Area have required a permit to harvest trout and char. However, the provisions of this permit were never fully utilized by subsistence users. Beginning in 2004, the State repealed the requirement of a subsistence permit to harvest char, therefore char were added to the existing Federal subsistence rainbow trout permit. Efforts have been made to make these Federal permits available in villages near Federal public waters and a news release was issued to help inform the public. However, no Federal permits have been requested or issued over the past two years.

Existing Federal Regulation

Bristol Bay Area

§___.27(i)(5)(xiv) You may take salmon and char only under authority of a subsistence fishing permit. You may take rainbow trout only under authority of a Federal subsistence fishing permit; permit conditions and systems to receive special protection will be determined by the local Federal fisheries manager in consultation with ADF&G and local users.

(xv) Only one subsistence fishing permit for salmon, one for char, and one for rainbow trout may be issued to each household per year.

Proposed Federal Regulation

Bristol Bay Area

§___.27(i)(5)(xiv) You may take salmon ~~and char~~ only under authority of a subsistence fishing permit. You may take rainbow trout only under authority of a Federal subsistence fishing permit; permit conditions and systems to receive special protection will be determined by the local Federal fisheries manager in consultation with ADF&G and local users.

(xv) Only one subsistence fishing permit for salmon, ~~one for char,~~ and one for rainbow trout may be issued to each household per year.

Extent of Federal Public Waters

Federal public waters in the Bristol Bay Area include waters draining into Bristol Bay within or adjacent to the boundaries of a portion of Lake Clark National Park and Preserve, Katmai National Preserve, a small portion of Aniakchak National Preserve, portions of Togiak National Wildlife Refuge, Becharof NWR, Alaska Peninsula NWR, the Alagnak National Wild River, and non-navigable waters on BLM-managed lands.

Note: For purposes of this discussion, the phrase "Federal public waters" is defined as those waters described under 50 CFR 100.3(b).

Background

Federal regulations mirrored those of State subsistence regulations for the Bristol Bay Area from 1999 through 2002. In March 2003, Federal regulations deviated from the State by allowing subsistence harvest of rainbow trout. This action resulted in the creation of a Federal subsistence permit to harvest rainbow trout in the Bristol Bay Area. The State does not allow take of rainbow trout under subsistence regulations. In December 2003, State regulations were modified to no longer require a subsistence permit to harvest trout or char. As a result, in 2004, the Federal rainbow trout permit was amended to include the subsistence harvest of char from Federal public waters in the Bristol Bay Area. State sport fish regulations are generally more complex with some size restrictions for rainbow trout and harvest limits that are liberalized during the winter months from two fish per day to five per day in certain areas.

Char is a term that is often used to refer to either Dolly Varden or Arctic Char. Most subsistence harvests of "char" in the Bristol Bay Area are Dolly Varden, but are referred to as char by most users. Lake trout also fall under the definition of char in Federal subsistence regulations.

Harvest and Management

Rainbow trout and char are found in abundance throughout most of the Bristol Bay Area. Subsistence harvests of trout and char are an important source of food, although at relatively low harvest levels (ADF&G 1990). Rainbow trout stocks of the region are world famous, and are a cornerstone of a large sport fishing industry.

Fall et al. (1996) provide a detailed description of the harvest and use of freshwater fish in the Bristol Bay region by community and subregion. Community survey data are presented and summarized from 1973/74, the 1980s, and the 1990s. Harvest methods for rainbow trout and char included rod and reel in open water, hook and line through the ice, and gillnets (incidental for rainbow) that were set or swept. Dolly Varden are also retained for subsistence uses when harvested incidentally in commercial salmon fisheries.

Subsistence fishing effort is opportunistic, and freshwater fish harvests often consist of a variety of species. Much of the rainbow trout harvest in the small communities occurs while people are targeting other species, such as fishing with nets for whitefish or pike, or fishing through the ice for grayling, pike, or Dolly Varden.

Fall et al. (1996) reported annual trout and char subsistence harvest estimates for most Bristol Bay villages. The rainbow trout reported harvest estimates have ranged from 0 (Port Alsworth in 1983) to 3,613 (Nondalton in 1983). Dolly Varden subsistence harvest estimates ranged from 0 (Port Alsworth in 1983) to 10,847 Dolly Varden harvested in Togiak in 1995 (BBNA and ADF&G 1996). Rainbow trout harvests are a small portion of non-salmon fish harvests, while Dolly Varden account for a more substantial portion of the overall non-salmon subsistence harvest. For example, the estimated non-salmon fish harvest for Nondalton in 1983 was 44,259 fish, with rainbow trout accounting for 8% of that total. As a comparison, Dolly Varden accounted for 76% of the estimated non-salmon fish harvest of 14,361 for Togiak in 1995 (BBNA and ADF&G 1996).

Effects of the Proposal

The proposed regulation change would partially align Federal and State subsistence regulations in the Bristol Bay Area.

If adopted, subsistence users would still need a Federal subsistence rainbow trout permit to harvest rainbow trout from Federal public waters in the Bristol Bay Area. The Federal permit can provide managers important harvest data, however, no data has been collected as no rainbow trout permits have been issued to date.

The previous State regulation requiring a permit to harvest trout or char was intended primarily for harvests of lake trout, Arctic Char, and Dolly Varden. State and Federal regulations allow the retention of rainbow trout if taken incidentally in other net fisheries or through the ice. However, Federal regulations also allow rainbow trout to be harvested by rod and reel.

It appears that most subsistence users are not aware of the requirement for either the rainbow trout or char Federal permit since none have been issued to date. The Office of Subsistence Management issued a news release on June 1, 2004 for all of the Bristol Bay area explaining the Federal permit requirements. Current permit requirements unnecessarily place subsistence users at risk of violation if they subsistence fish for rainbow trout or char without a permit. Periodic household surveys have been an effective alternative to permits and result in a more comprehensive harvest estimate for freshwater fish that includes all sources, not just fish taken in directed subsistence fisheries (ADF&G 2003). These surveys are conducted periodically throughout the region according to funding availability and other information needs in the area.

Since there have not been any Federal permits issued and the State no longer requires a permit to harvest trout or char, the Federal permit requirement is not providing subsistence harvest data which was its intended purpose. The Federal permit requirement does place subsistence users at risk of violation and is currently detrimental to subsistence user needs. This could be changed with a more aggressive effort to notify subsistence users of the permit requirement in addition to more law enforcement to help strengthen compliance. However, Federal public waters in the Bristol Bay area are limited and household surveys of the entire area would be very costly. The periodic household surveys are also limited but are the most efficient and cost effective method available to collect the harvest data. These surveys also have their limitations, mostly due to funding constraints. Adopting this proposal would emphasize the need to prioritize funding to continue these studies on a regular basis.

Eliminating the permit requirements for both char and rainbow trout would align Federal and State subsistence permit requirements and would benefit subsistence users who harvest these fish on Federal public waters. Federal regulations would continue to allow the use of rod and reel as legal gear to harvest rainbow trout. However, the harvest limits in place are a conservative measure to help protect that resource. If the permit requirement is eliminated, there is no need for any permit conditions.

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FP05-06 Executive Summary	
General Description	Relax or lift fishing schedules when runs permit, irrespective of commercial opportunities. (Originator: Association of Village Council Presidents)
Proposed Regulation	**Kuskokwim Area - Salmon** *§___.27(i)(4)(ii) For the Kuskokwim area, Federal subsistence fishing schedules, openings, closings, and fishing methods are the same as those issued for the subsistence taking of fish under Alaska Statutes (AS 16.05.060), unless superseded by a Federal Special Action.* ***(A) When in-season indicators of run timing and run strength provide sufficient assurances that upriver subsistence and salmon population viability needs will be met, subsistence salmon fishing schedules shall be lifted or relaxed on the waters of the Kuskokwim River drainage to the fullest extent consistent with the continuation of upriver subsistence uses, and with the need to protect the continued viability bf salmon populations. This decision on whether to lift or relax the subsistence salmon fishing schedules shall be made independently of whether these in-season indicators further indicate sufficient abundance to allow for a state-authorized commercial chum salmon fishery, or whether they indicate sufficient abundance to allow for other non-subsistence fisheries.*** ***(B) When the State of Alaska opens a commercial chum salmon fishery on the Kuskokwim River, and when Federal subsistence managers do not find it necessary to close this fishery in order to protect healthy salmon populations or to provide for continued subsistence uses, the subsistence salmon fishing schedules shall be immediately lifted, subject only to closures before, during and after commercial openings as provided for by state regulation. This lifting of the subsistence salmon fishing schedules shall remain in effect until such time as new in-season run timing or run strength data that was not available at the time of the commercial chum salmon opening indicates that the reinstatement of the subsistence salmon fishing schedules is necessary in order to protect the continued viability of salmon populations, or to continue subsistence uses.***

FP05-06 Executive Summary	
Region 5 - Yukon-Kuskokwim Delta Regional Council Recommendation	**Support with modification.**
Region 6 - Western Interior Regional Council Recommendation	**Oppose.**
Interagency Staff Committee Recommendation	**Oppose**
ADF&G Comments	The Federal Subsistence Board meeting book is being published prior to development of final recommendations and comments by the Alaska Department of Fish and Game. This information will be available on the Department's website by January 4, 2005. See the ADF&G homepage, under the headings of "highlights" and "regulations", at http://www.adfg.state.ak.us. For those without computer access, please call 1-907- 267-2360 for further information.
Written Public Comments	**None.**

REGIONAL ADVISORY COUNCIL RECOMMENDATIONS

YUKON-KUSKOKWIM DELTA REGIONAL COUNCIL

Support with modification. The Yukon-Kuskokwim Delta Council spent several hours discussing a similar proposal. The Board of Fisheries dropped references to the commercial fisheries and the Board of Fisheries currently supports relaxing fishing schedules when numbers of fish are sufficient.

The proposed regulation with modification should read:

> *§___.27(i)(4)(ii) For the Kuskokwim area, Federal subsistence fishing schedules, openings, closings, and fishing methods are the same as those issued for the subsistence taking of fish under Alaska Statues (AS 16.05.060), unless superseded by a Federal Special Action.*
>
> ***(A) The windowed subsistence fishing schedule specified in 5AAC 07.365 may be lifted when inseason salmon run strength is assessed to be sufficient to meet escapement goals and subsistence uses. The subsistence fishing schedule may be reinstated by the Federal inseason manager when the assessment of run strength indicates it is necessary to protect the continued viability of salmon populations.***

WESTERN INTERIOR REGIONAL COUNCIL

Oppose. The windowed subsistence fishing schedule is working; it provides for river-wide subsistence fishing opportunities and quality escapement. There are concerns about the in-season managers' ability to assess the salmon run strength early in the season. There are concerns about our ability to assess the run to all of the upper Kuskokwim River tributaries early in the salmon run through the lower Kuskokwim River. The early run salmon stocks migrate the furthest upstream; these up-river stocks are supporting the highest subsistence fishing effort throughout their migration.

INTERAGENCY STAFF COMMITTEE RECOMMENDATION

Oppose the proposal, consistent with the recommendation of the Western Interior Regional Advisory Council, but contrary to the recommendation of the Yukon-Kuskokwim Delta Regional Advisory Council.

Justification

During its winter 2004 meeting, the Alaska Board of Fisheries approved regulations that separated the lifting of the windowed subsistence fishing schedule from opening a commercial salmon fishery on the Kuskokwim River. This change thus accomplishes the proponent's intent of de-coupling these two actions within the Federal program, as these revised state regulations would similarly apply to §__.27(i)(4)(ii), thereby making it unnecessary to revise the Federal subsistence regulations.

Subsistence users may not be aware of this recent change implemented by the Alaska Board of Fisheries. The Interagency Staff Committee recommends to the Federal Subsistence Board that this separation of subsistence windows and commercial fishery openings be described in the 2005 booklet that provides information to the public on Federal subsistence fishing regulations.

COMMENTS

ADF&G

The Federal Subsistence Board meeting book is being published prior to development of final recommendations and comments by the Alaska Department of Fish and Game. This information will be available on the Department's website by January 4, 2005. See the ADF&G homepage, under the headings of "highlights" and "regulations", at http://www.adfg.state.ak.us. For those without computer access, please call 1-907- 267-2360 for further information.

PUBLIC

None.

STAFF ANALYSIS
FP05-06

ISSUES

Proposal FP05-06, submitted by the Association of Village Council Presidents (AVCP), the Eek Traditional Council and the Organized Village of Kwethluk, requests a permanent Federal subsistence regulation that lifts or relaxes the subsistence fishing schedule for salmon in the Kuskokwim River drainage, when in-season indicators of run timing and run strength provide sufficient assurances that upriver subsistence uses and salmon population viability concerns will be met. The proponent believes this proposal would ensure Federal managers comply explicitly with ANILCA when managing subsistence resources. This decision will be made independent of a decision to open the commercial chum salmon fishery or the allowance of other non-subsistence fisheries. Furthermore, when the Alaska Department of Fish and Game (ADF&G) opens a commercial chum salmon fishery on the Kuskokwim River, the subsistence fishing schedule shall be lifted immediately, subject only to closures before, during and after commercial openings as provided for by State regulation. The lifted subsistence fishing schedule shall remain in effect until new in-season run timing or run strength data indicate that reinstatement of the schedule is necessary for the protection of salmon population viability or the continuation of subsistence uses.

DISCUSSION

Federal and State agencies have agreed to work together through an Interim Memorandum of Agreement (MOA), stating that the Federal subsistence program will use existing State fishery management plans unless they do not provide for the subsistence priority in Federal law or a separate plan(s) is developed and adopted by the Federal Subsistence Board (Board). This proposal seeks to establish a Federal regulation that would provide clear guidance to relax the subsistence fishing schedule independently of the State's Kuskokwim River Salmon Rebuilding Management Plan. The Federal in-season manager currently has the authority to open or close subsistence fisheries through a Delegation of Authority from the Board. The Federal in-season manager has been delegated the authority to reinstate the subsistence salmon fishing schedule when the salmon run strength assessment indicates the schedule is necessary to protect a salmon population. These authorities would not change with the adoption of this proposal. A similar Special Action Request was submitted to the Board from AVCP in 2003. In response, the Board sent a letter to AVCP dated May 22, 2003, stating that the proposed "subsistence regulations to address this issue are unnecessary as the Federal in-season manager currently has the authority to open and close subsistence fishing periods in Federal waters." In that letter, the Board also agreed that adjustments to the subsistence fishing schedule should be based upon in-season run strength independent from the State's decision to implement or announce a commercial fishery.

Existing Federal Regulation

> *§___.27(i)(4)(ii) For the Kuskokwim area, Federal subsistence fishing schedules, openings, closings, and fishing methods are the same as those issued for the subsistence taking of fish under Alaska Statutes (AS 16.05.060), unless superseded by a Federal Special Action.*

Proposed Federal Regulation

§___.27(i)(4)(ii) For the Kuskokwim area, Federal subsistence fishing schedules, openings, closings, and fishing methods are the same as those issued for the subsistence taking of fish under Alaska Statutes (AS 16.05.060), unless superseded by a Federal Special Action.

(A) When in-season indicators of run timing and run strength provide sufficient assurances that upriver subsistence and salmon population viability needs will be met, subsistence salmon fishing schedules shall be lifted or relaxed on the waters of the Kuskokwim River drainage to the fullest extent consistent with the continuation of upriver subsistence uses, and with the need to protect the continued viability of salmon populations. The decision to lift or relax the subsistence salmon fishing schedules shall be made independently of whether these in-season indicators further indicate sufficient abundance to allow for a State-authorized commercial chum salmon fishery, or whether they indicate sufficient abundance to allow for other non-subsistence fisheries.

(B) When the State of Alaska opens a commercial chum salmon fishery on the Kuskokwim River, and when Federal subsistence managers do not find it necessary to close this fishery in order to protect healthy salmon populations or to provide for continued subsistence uses, the subsistence salmon fishing schedules shall be immediately lifted, subject only to closures before, during and after commercial openings as provided for by State regulation. This lifting of the subsistence salmon fishing schedules shall remain in effect until such time as new in-season run timing or run strength data that was not available at the time of the commercial chum salmon opening indicates that the reinstatement of the subsistence salmon fishing schedules is necessary in order to protect the continued viability of salmon populations, or to continue subsistence uses.

Relevant State Regulations

5 AAC 07.365. Kuskokwim River Salmon Rebuilding Management Plan. (a) The purpose of this management plan is to provide guidelines for the rebuilding and management of Kuskokwim River salmon fishery that will result in the sustained yield of salmon stocks large enough to meet the escapement goals, amounts necessary for subsistence, and for nonsubsistence fisheries.

(1) the subsistence salmon net and fish wheel fisheries will be open for four consecutive days per week in June and July as announced by emergency order based on run strength and to achieve escapement goals.

Extent of Federal Public Waters

Federal jurisdiction within the AVCP region in the Kuskokwim Area extends throughout the lower Kuskokwim River drainage (Map 1), the Kanektok and Arolik Rivers, the upper reaches of the Goodnews River drainage, and Nunivak Island including marine waters extending out three miles around the island. These waters are within the boundaries of the Yukon Delta National Wildlife Refuge (NWR) and the Togiak NWR. For the Kuskokwim River drainage, the refuge boundaries include all waters from the mouth of the Kuskokwim River upstream to, and including the lower portion of the Aniak River. Federal jurisdiction on the Aniak River extends approximately 5.6 miles upstream of its confluence with the Buckstock River.

Note: For purposes of this discussion, the phrase "Federal public waters" is defined as those waters described under 50 CFR 100.3(b).

Customary and Traditional Use Determinations

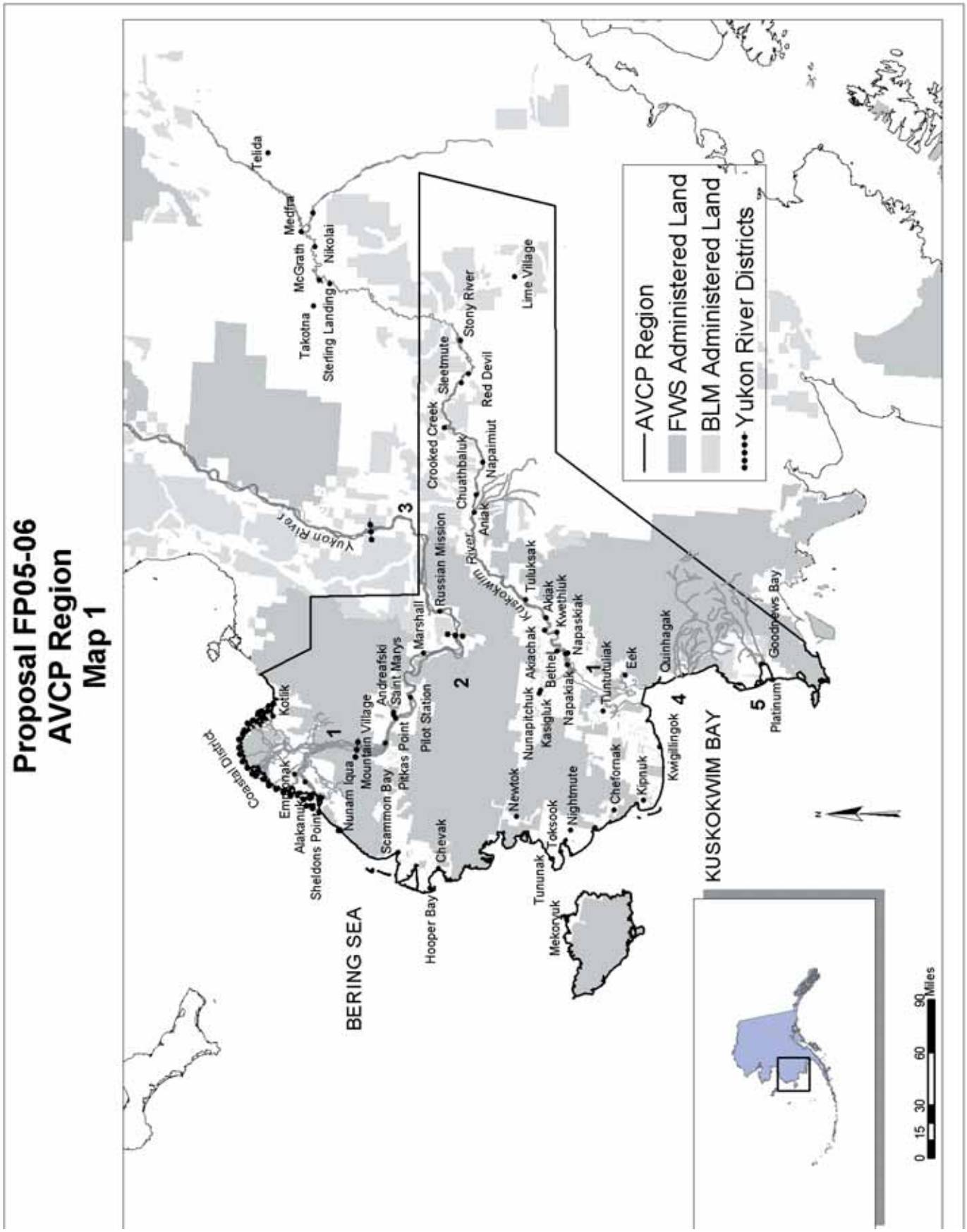
(2) Fish determinations. Kuskokwim Area - Salmon - Residents of the Kuskokwim Area, except those persons residing on the United States military installation located on Cape Newenham, Sparevohn USAFB, and Tatalina USAFB.

Background

Through a joint 2000 MOA, the ADF&G and the Board have developed a salmon management system that provides for the Federal subsistence program to use State management plans as the initial basis for any management actions, so long as they provide for subsistence priorities under State and Federal law. The MOA identifies the need to include meaningful public involvement by providing adequate opportunity for Federal agencies, Federal Subsistence Regional Advisory Councils (Councils) and ADF&G to review data analyses associated with proposed subsistence Special Actions and subsistence Emergency Orders.

In 2001, the Alaska Board of Fisheries implemented a new subsistence salmon fishing schedule on the Kuskokwim River, providing a "windowed" approach for when fishing would be allowed and when salmon could pass upriver without being subject to exploitation. This schedule was implemented with the cooperation of local fish and game advisory committees, the Councils, and the public as part of the Kuskokwim River Salmon Rebuilding Management Plan. Subsistence and other users were also asked to voluntarily take additional measures to conserve Chinook and chum salmon through public appeal from the AVCP, Kuskokwim Native Association, Kwethluck IRA Council, McGrath Native Village Council, Orutsaramuit Native Council, ADF&G, and the USFWS.

The Board agreed to the subsistence fishing schedule as part of the Kuskokwim River Salmon Rebuilding Management Plan, although the schedule does not appear in Federal regulation. The Federal in-season manager does have the authority to open subsistence salmon fishing during the scheduled or "windowed" closures if in-season run strength indicates a sufficient abundance of Chinook salmon to meet escapement objectives and subsistence uses. This authority also allows the Federal in-season manager to restrict all uses in Federal public waters if necessary. This authority is defined in a Delegation of Authority letter from the Board. The Federal in-season


Proposal FP05-06
AVCP Region
Map 1
AVCP Region
FWS Administered Land
BLM Administered Land
Yukon River Districts
Telida
Medfra
McGrath
Nikolai
Takotna
Sterling Landing
Lime Village
Stony River
Sleetmute
Red Devil
Crooked Creek
Napaimiut
Chuathbaluk
Anvik
Yukon River
Russian Mission
Kuskokwim River
Tuluksak
Akiak
Kwethluk
Napaskiak
Marshall
Andreafski
Saint Marys
Kotlik
Mountain Village
Pilot Station
Pitkas Point
Nunam Iqua
Scammon Bay
Emmonak
Alakanuk
Sheldons Point
Coastal District
Chevak
Hooper Bay
Newtok
Nunapitchuk
Akiachak
Kasigluk
Bethel
Napakiak
Nightmute
Toksook
Tununak
Mekoryuk
Tuntutuliak
Eek
Chefornak
Kipnuk
Kwigillingok
Quinhagak
Goodnews Bay
Platinum
BERING SEA
KUSKOKWIM BAY
1
2
3
4
5
0 15 30 60 90 Miles

manager assesses each management decision during the season and writes a memo to the file which serves as a record of assessment and consultation with the State manager.

In May 2002 the Board adopted into Federal regulation a streamlining protocol that adopts the same schedules, openings, closings and fishing methods as those in the State's Emergency Orders, unless superceded by a Federal Special Action. This eliminated the need for separate agency news releases and the issuance of formal Special Actions by the Board for each in-season action taken by the two managing agencies. Special Actions would be issued only when the two agencies differ in opinion.

In 2003, after consultation with the Kuskokwim River Salmon Management Working Group (KRSMWG) and Coordinating Fisheries Committee (CFC), the windowed subsistence fishing schedule was lifted, when in-season managers determined there were enough fish to meet escapement goals and to provide for subsistence uses. In January 2004, the Alaska Board of Fisheries amended the existing regulatory language regarding the relaxation of the subsistence fishing schedule dependent upon the implementation of a commercial fishery (Alaska Board of Fisheries 2004). The Alaska Board of Fisheries removed the reference to the commercial fishery and now supports relaxing the subsistence fishing schedule if in-season assessment indicates a run strength that is large enough to provide for a harvestable surplus for subsistence and non-subsistence users.

On May 10, 2004, the Office of Subsistence Management received a Special Action Request to remove the subsistence fishing schedule windows in parts of the Yukon and Kuskokwim Rivers. This request was forwarded to the delegated in-season fisheries managers for review, evaluation, and decision making. The decision reached at that time was not to remove the subsistence fishing schedule until sufficient in-season information was available to determine the salmon run strength. The windowed subsistence fishing schedule was subsequently lifted for the Kuskokwim River on June 20, 2004. In 2003 the subsistence fishing schedule was lifted on July 6 and in 2002 on June 29.

Cultural Considerations

The goal of the subsistence salmon fishing schedule is to provide windows of time when fishing is not allowed so that portions of the run can migrate upriver with reduced exploitation. This strategy spreads the subsistence salmon harvest throughout the run and reduces the impact on any particular component of the run. The subsistence fishing schedule reduces harvest early in the run when there is a much higher level of uncertainty and spreads the harvest opportunity among users. Traditionally, subsistence users fish as personal, weather, and other environmental factors permitted. Subsistence fishing effort takes place based on abundance and timing of the run, water conditions, and processing and drying conditions. These factors were the primary determinants in the decisions about when, where, and how people fished until State and Federal regulations intervened. As long as subsistence fishing was open, fishers were allowed maximum flexibility that enabled them to accommodate the numerous environmental and social factors that influence fishing effort. Weather and river conditions affect the timing of fishing effort. Fish cannot be dried during rainy periods and nets are subject to damage or loss when the river is high and full of driftwood. When the weather is poor for processing and drying, people generally avoid harvesting. Imposing a subsistence fishing schedule or subsistence fishing openings and

closings has complicated the subsistence fishing opportunity. During times when salmon fishing is closed but fish are available or abundant and drying conditions are good, the subsistence users feel the greatest impact. Traditionally, fish camps have been situated at locations that have been in family use for many years. In many cases the entire household relocated to the fish camp for the entire period of the salmon harvest. With the subsistence fishing schedule in place, some households have been unable to maintain this pattern.

Effects of the Proposal

Adoption of this proposal would place Federal in-season management authority to relax the windowed subsistence fishing schedule into Federal regulations and provide Federal managers clear regulatory direction. In-season fishery managers would not change the current process in how they evaluate when the potential run strength meets escapement goals and subsistence uses. The Federal manager currently has the authority to open and close subsistence fishing which includes relaxing the subsistence fishing schedule once it has been determined that escapement objectives and subsistence uses are likely to be met or reinstating the schedule when an assessment indicates a need to protect a salmon population. This authority is included in a Delegation of Authority from the Board. The public is generally not aware of this delegation. Adoption of this proposal would place into Federal regulation clear regulatory direction that the subsistence fishing schedule can be relaxed in Federal public waters when an assessment of the run strength has been made that escapement objectives and subsistence uses will be met.

LITERATURE CITED

BOF. 2004. Alaska Board of Fisheries summary of actions. Arctic-Yukon-Kuskokwim finfish. January 12-19, 2004. Fairbanks, AK.

FP05-07 Executive Summary	
General Description	Revise C&T use determination for the Kuskokwim River drainage. (Originator: Yukon-Kuskokwim Delta Regional Council)
Proposed Regulation	**Kuskokwim Area – Rainbow trout** *KUSKOKWIM AREA* *Rainbow trout.* *Residents of the communities of Quinhagak, Goodnews Bay, Kwethluk, Eek, Akiachak, Akiak, and Platinum.* *KUSKOKWIM AREA* *Rainbow trout.* *Residents of the communities of Quinhagak, Goodnews Bay, Kwethluk, Eek, Akiachak, Akiak, Platinum,* ***Tuntutuliak, Napakiak, Napaskiak, Oscarville, Bethel, Atmautluak, Nunapitchuk, Kasigluk, Tuluksak, Upper Kalskag and Lower Kalskag***
Region 5 - Yukon-Kuskokwim Delta Regional Council Recommendation	**Support.**
Region 6 - Western Interior Regional Council Recommendation	**Support.**
Interagency Staff Committee Recommendation	**Support.**
ADF&G Comments	The Federal Subsistence Board meeting book is being published prior to development of final recommendations and comments by the Alaska Department of Fish and Game. This information will be available on the Department's website by January 4, 2005. See the ADF&G homepage, under the headings of "highlights" and "regulations", at http://www.adfg.state.ak.us. For those without computer access, please call 1-907- 267-2360 for further information.
Written Public Comments	**None.**

REGIONAL ADVISORY COUNCIL RECOMMENDATIONS

YUKON-KUSKOKWIM DELTA REGIONAL COUNCIL

Support. The Yukon-Kuskokwim Delta Council recognizes the concerns of the management of the Federal agency and the Alaska Department of Fish & Game. Frustration still remains about a citation given to a young person because his village did not have a Customary and Traditional Use Determination for rainbow trout. Salmon are a migratory fish and the local people harvest salmon seasonally because salmon returns to spawning grounds annually. Freshwater fish are local species. Yup'ik people depend on freshwater fish year-round for food because freshwater fish is always available to harvest. In historical knowledge of the Yup'ik elders, rainbow trout has never declined in its population levels due to over harvest of the resource.

WESTERN INTERIOR REGIONAL COUNCIL

Support. These Customary &Traditional (C&T) findings are equitable to the users. The distribution of rainbow trout is limited; very few rainbow trout occur in drainages upstream from the Aniak River. There is some concern about adding communities to this C&T because of the limited distribution of rainbow, but there is Regional Council support for being fair to the subsistence users.

INTERAGENCY STAFF COMMITTEE RECOMMENDATION

Support the proposal, consistent with the recommendations of the Yukon-Kuskokwim Delta and Western Interior Regional Advisory Councils.

Justification

Residents of the lower Kuskokwim area have utilized rainbow trout for many generations, and expanding the existing customary and traditional use determination as requested would acknowledge that use.

COMMENTS

ADF&G

The Federal Subsistence Board meeting book is being published prior to development of final recommendations and comments by the Alaska Department of Fish and Game. This information will be available on the Department's website by January 4, 2005. See the ADF&G homepage, under the headings of "highlights" and "regulations", at http://www.adfg.state.ak.us. For those without computer access, please call 1-907- 267-2360 for further information.

PUBLIC

None.

STAFF ANALYSIS
FP05-07

ISSUE

Proposal FP05-07, submitted by Yukon-Kuskokwim Delta Regional Advisory Council, requests that the existing positive customary and traditional use determination for rainbow trout in the Kuskokwim Area be expanded to include the communities of Tuntutuliak, Napakiak, Napaskiak, Oscarville, Bethel, Atmautluak, Nunapitchuk, Kasigluk, Tuluksak, Upper Kalskag and Lower Kalskag. As originally published, the proposal would have limited the scope of the request to the Kuskokwim River drainage, but upon clarification with the proponent, it became clear that the intent of the proposal was to add these communities to the existing customary and traditional use finding, which is for the Kuskokwim Area. A related proposal, FP05-08 (analyzed separately), requests that the existing positive customary and traditional use determination for rainbow trout in the Kuskokwim area be expanded to include the three communities of Aniak, Chuathbaluk and Crooked Creek.

DISCUSSION

Existing Federal Regulation

KUSKOKWIM AREA	*Rainbow trout*	*Residents of the communities of Quinhagak, Goodnews Bay, Kwethluk, Eek, Akiachak, Akiak and Platinum*

Proposed Federal Regulation

KUSKOKWIM AREA	*Rainbow trout*	*Residents of the communities of Quinhagak, Goodnews Bay, Kwethluk, Eek, Akiachak, Akiak and Platinum,* ***Tuntutuliak, Napakiak, Napaskiak, Oscarville, Bethel, Atmautluak, Nunapitchuk, Kasigluk, Tuluksak, Upper Kalskag and Lower Kalskag***

The Yukon-Kuskokwim Delta Regional Advisory Council (Council) requests that the existing positive customary and traditional use determination for rainbow trout in the Kuskokwim Area be expanded to include residents of the lower Kuskokwim River communities of Tuntutuliak, Napakiak, Napaskiak, Oscarville, Bethel, Atmautluak, Nunapitchuk, Kasigluk, Tuluksak, Upper Kalskag and Lower Kalskag. The Council states that residents of the eleven lower Kuskokwim and Johnson River communities have the same pattern of use as those villages that currently have a positive customary and traditional use determination for rainbow trout, and expanding the current determination would "fill that hole" that currently exists in regulation (YKRAC 2004: 185). Rainbow trout are at the northern range of their geographic distribution in the Kuskokwim Area, and are generally found in the lower Kuskokwim River tributaries and tributaries of Kuskokwim Bay (Lafferty 2003: 57). Kuskokwim Bay and Kuskokwim River tributaries that

are known to produce rainbow trout include the Goodnews River (Kuskokwim Bay), as well as the Kwethluk, Kasigluk, Kisaralik, Eek[1], and Aniak rivers. In addition, there are scattered reports of rainbow trout being caught in tributaries above the Aniak River, including the Holitna, Hoholitna, and Holokuk rivers (Burr 2004, pers. comm; Krauthoefer 2004, pers. comm).

Extent of Federal Public Waters

Federal jurisdiction within the Kuskokwim Area extends throughout the lower Kuskokwim River drainage **(Map 1),** the Kanektok River, the Arolik River, the upper reaches of the Goodnews River drainage, and Nunivak Island including marine waters extending out three miles around the island. These waters are within the boundaries of the Yukon Delta National Wildlife Refuge (NWR) and the Togiak NWR.

For the Kuskokwim River drainage, the Yukon Delta NWR boundaries include all waters from the mouth of the Kuskokwim River upstream to and including the lower portion of the Aniak River. Federal jurisdiction on the Aniak River extends approximately 5.6 miles upstream of its confluence with the Buckstock River.

Note: For purposes of this discussion, the phrase "Federal public waters" is defined as those waters described under 50 CFR 100.3(b).

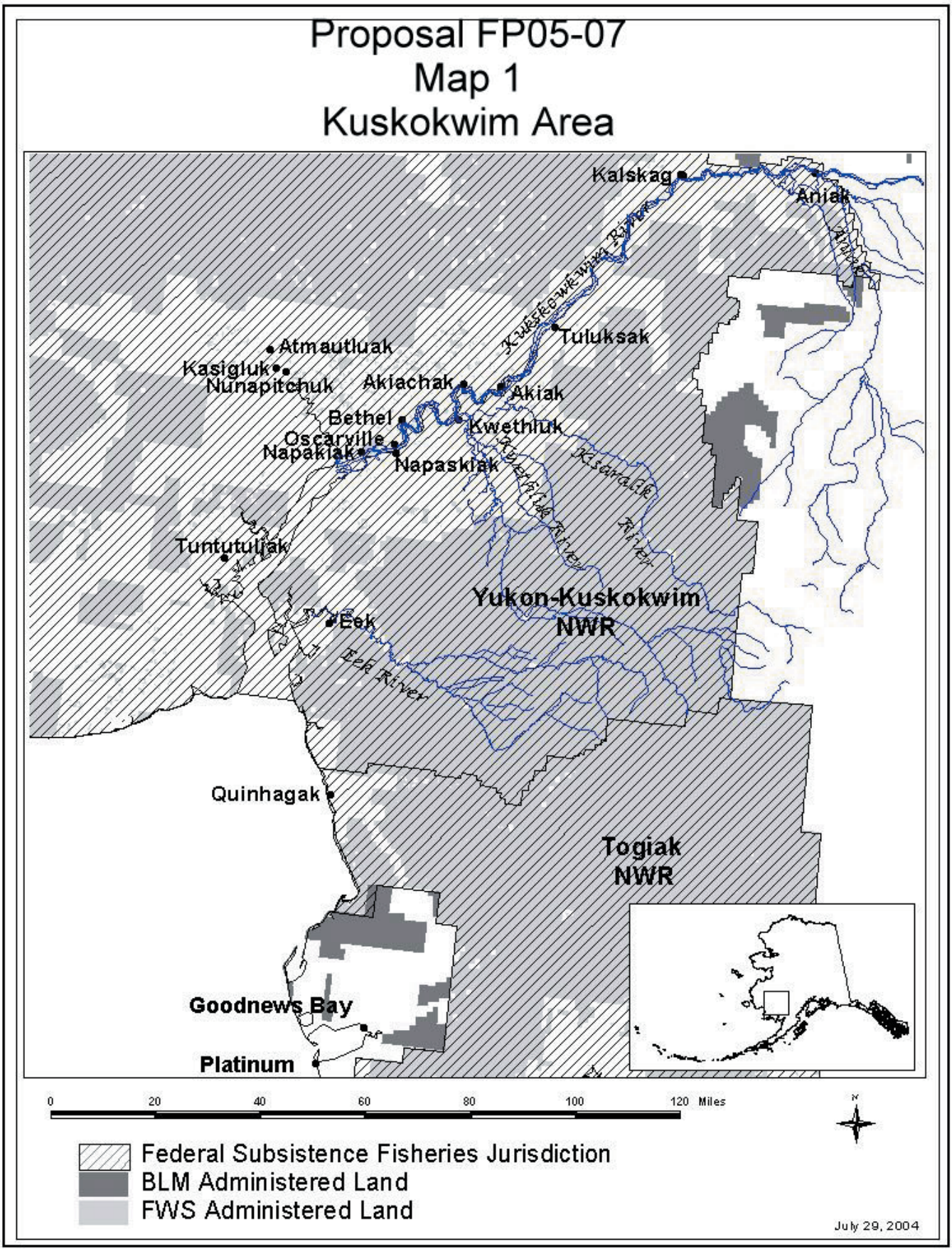
Regulatory History

On September 30, 1990, the Association of Village Council Presidents (AVCP) submitted a request for reconsideration to the Federal Subsistence Board (Board) to permit the harvest of rainbow trout by residents of all communities within the AVCP region (under then temporary Federal regulations). This would have included the eleven communities in question. On November 30, 1990, the Board decided to continue to regulate the taking of rainbow trout on Federal public waters in accordance with the existing temporary Federal management regulations until such time as an environmental impact statement was developed and a final regulatory program was completed. That occurred, and the initial Federal regulations became effective on July 1, 1991.

On August 12, 1991, the AVCP submitted a second request for reconsideration to the Board to permit the harvest of rainbow trout under Federal Subsistence Management Regulations by residents of Goodnews Bay, Quinhagak, Platinum, Eek, Kwethluk, Akiachak, and Akiak.

The Board met on September 25, 1991 to consider requests for reconsideration, including the request from AVCP on rainbow trout. The Board heard testimony from a number of local residents regarding the use of rainbow trout by residents of the area. The Board voted to postpone action until its December meeting to allow staff additional time to evaluate existing information. At its December 18, 1991 meeting, the Board recognized rainbow trout as a subsistence use species in the Kuskokwim Bay area, but opted to delay implementing a harvest program until use areas could be mapped and the navigability status of waters (related to jurisdiction criteria at that time) in those areas determined.

[1] According to one report, the Eek River does not produce rainbow trout (FSB 1993: 123)


Proposal FP05-07
Map 1
Kuskokwim Area
Kalskag
Aniak
Tuluksak
Atmautluak
Kasigluk
Nunapitchuk
Akiachak
Akiak
Bethel
Kwethluk
Oscarville
Napakiak
Napaskiak
Tuntutuliak
Eek
Eek River
Yukon-Kuskokwim NWR
Quinhagak
Togiak NWR
Goodnews Bay
Platinum
0 20 40 60 80 100 120 Miles
Federal Subsistence Fisheries Jurisdiction
BLM Administered Land
FWS Administered Land
July 29, 2004

During September and October 1992, the US Fish and Wildlife Service (USFWS), Office of Subsistence Management (OSM) conducted village surveys throughout the region. The surveys were designed to determine what waters are or have been used to harvest rainbow trout, what time of year those harvests occurred, what gear types were used, and whether or not the fishing sites could be reached by boat. The information gathered was analyzed and the use areas mapped. Based on this work, in April 1993, the Board adopted a positive customary and traditional use determination for rainbow trout for the communities of Goodnews Bay, Quinhagak, Platinum, Eek, Kwethluk, Akiachak, and Akiak. The Board also allowed these communities to harvest rainbow trout in those non-navigable tributaries on Federal public waters of the Kuskokwim River downstream from the confluence of the Kuskokwim and Holitna rivers and from those non-navigable drainages to Kuskokwim Bay north of Platinum. And, lastly, the Board restricted the harvest to the use of rod and reel, gillnet, or jigging through the ice while the use of gillnets was prohibited March 15- June 15 to prevent localized depletion of spawning populations (FSB 1993: 114-120).

Community Characteristics

A summary of the eleven lower Kuskokwim River communities' population between 1960 and 2000, and number of households[2] in 2000, is shown in **Table 1**.

Table 1. Lower Kuskokwim River communities' population 1960-2000 and number of households, 2000 (ADCED 2004).

Community	1960	1970	1980	1990	2000 (# Households)
Tuntutuliak	144	158	216	300	370 (84)
Napakiak	190	0	262	318	353 (90)
Napaskiak	154	259	244	328	390 (82)
Oscarville	51	41	56	57	61 (15)
Bethel	1,258	2,416	3,576	4,674	5,471 (1,741)
Atmautluak	0	0	219	258	294 (60)
Nunapitchuk	327	526	299	378	466 (105)
Kasigluk	244	0	342	425	543 (101)
Tuluksak	137	195	236	358	428 (86)
Upper Kalskag	147	122	129	172	320 (62)
Lower Kalskag	122	183	246	291	267 (66)

The lower Kuskokwim River area has long been occupied by Yup'ik Eskimos. While permanent settlements are a relatively recent phenomena, most villages are located at sites historically occupied by the ancestors of current residents. The populations of the eleven communities identified in this proposal are predominantly Yup'ik Eskimo, and all are highly reliant on the harvest and subsistence use of fish and game resources. Eight of the eleven communities are

[2] As of December 2003, the number of households for these communities were as follows: Bethel 1,651; Tuntutuliak 76; Napakiak 90; Napaskiak 83; Oscarville 13; Atmuatluak 56; Nunapitchuk 102; Kasigluk 136; Tuluksak 80; Upper Kalskag 59; Lower Kalskag 69 (Krauthoefer 2004, pers. comm.).

located on or very near to the Kuskokwim River; the remaining three (Nunapitchuk, Kasigluk and Atmautluak) are located on or near the Johnson River, a tributary of the Kuskokwim River. These latter three villages, also known as the "tundra villages," are tied together culturally and ethnically; during the 1970 census the three villages were enumerated as "Akolmiut" (Oswalt 1980).

Upper Kalskag is located on the north bank of the Kuskokwim River, two miles upriver from Lower Kalskag. It lies about 30 miles west of Aniak and 99 miles northeast of Bethel. People moved to Upper Kalskag from Old Kalskag (Hrdlicka 1943) and Lower Kalskag was a fish camp for families from Upper Kalskag since at least the 1920s (Oswalt 1980: 54). The two villages separated in the 1930s (Oswalt 1980). Today, the communities are characterized by separate zip codes and traditional councils, and while they have often been treated as one community, for the purposes of this analysis they are treated as separate communities.

Tuluksak lies on the south bank of the Tuluksak River at its junction with the Kuskokwim River. It is 35 miles northeast of Bethel, the regional hub. According to Oswalt (1980: 84) the village has been continuously occupied since early historic times (1800s).

Bethel is located near the mouth of the Kuskokwim River, and with a population of more than 5,400 in 2000, serves as a regional hub for the area. While there are more opportunities for wage labor in Bethel than in the surrounding villages, the harvest and use of fish and wildlife resources remains an important component of Bethel's economy.

Napaskiak is located on the east bank of the Kuskokwim River, along the Napaskiak Slough, seven miles southeast of Bethel. It has been occupied for several hundred years (Oswalt 1980: 63). Opposite Napaskiak on the north bank of the Kuskokwim is the village of Oscarville, which appears to have been settled around the 1940s (Oswalt 1980). Napakiak sits at the mouth of the Johnson River, on the north bank of the Kuskokwim River, 15 miles southwest of Bethel. The population of all three communities is primarily Yup'ik Eskimo, and the harvest and use of fish and game resources is important to the village economies.

Nunapitchuk has been settled since the late 1930s, and occupies both banks of the Johnson River, 22 miles north of Bethel. Atmautluak is a relatively new village, although the general area has been utilized for thousands of years. Atmautluak lies on the west bank of the Pitmiktakik River, 20 miles northwest of Bethel. Kasigluk is on the Johnson River, about 26 miles northwest of Bethel. The community is comprised of both Old and New Kasigluk, and is surrounded by the Johnson River and a network of lakes. Residents of the three villages of Nunapitchuk, Atmautluak, and Kasigluk rely heavily on the subsistence harvest of fish and wildlife resources.

Tuntutuliak is on the Qinaq River, approximately three miles from its confluence with the Kuskokwim River, and about 40 miles southwest of Bethel. The community is primarily (98.9%) Yup'ik, and relies heavily on the harvest and use of fish and wildlife resources.

Eight Factors for Determining Customary and Traditional Uses

A community or area must generally exhibit the following eight factors, which exemplify customary and traditional use. The Board will make customary and traditional use determinations based on an application of these eight factors (50 CFR 100.16(b) and 36 CFR 242.16(b)).

In addition, the Board will take into consideration the reports and recommendations of any appropriate Council regarding customary and traditional use of subsistence resources (50 CFR 100.16(c) and 36 CFR 242.16(c)).

1. A long-term, consistent pattern of use, excluding interruptions beyond the control of the community or area.

As noted by Zagoskin (1967: 222), "…the basic food of the Kuskokwim Natives is fish in various forms- boiled, pickled, fried, iced or shredded and dried….." Similarly, VanStone (1981) indicates that hunting, fishing and gathering all contributed to the annual round of harvests, but fishing was the most important. While a number of sources provide some information on resources used and patterns of resource use in the lower Kuskokwim River area (e.g., Andrews 1989; Andrews and Peterson 1983; Coffing 1991; Coffing et al. 2001; Oswalt 1963), just a few make specific mention of the use of rainbow trout[3] (e.g., Coffing 1991, 1998; Hunt 1992). However, all of the sources provide information on the extensive use of nonsalmon fish species. Based on their presence in the area, it is likely that rainbow trout are one of myriad nonsalmon fish utilized by the residents in this area and while not a targeted resource, these fish are caught ancillary to the harvest of other fish (ADF&G 1993) and are a valuable part of the annual round. Coffing (1991) and Coffing et al. (2001) indicate that between 22%-29% of the households surveyed in two lower Kuskokwim communities harvested rainbow trout, with an average per capita harvest of between one and two pounds. Harvests of rainbow trout represented 0.5% of the total nonsalmon fish harvest in Akiachak in 1998 (Coffing et al. 2001: 67). Based on household surveys conducted in Bethel in 2002 and 2003, the harvest of rainbow trout is a small but consistent component of the nonsalmon fish harvest (ADF&G and Orutsararmiut Native Council 2002, 2003). It is likely that the harvest of rainbow trout is a minor, but regular, part of the annual seasonal round of resource harvesting activities. As noted by Coffing et al. (2001: 79), "…fishing activities [in Akiachak] typically accompany nearly every other subsistence activity in which a household is involved, such as berry picking, moose hunting, and wood gathering to name a few. Non-salmon fish were an important resource that were locally available to many households on a year round basis."

2. A pattern of use recurring in specific seasons for many years

Rainbow trout are harvested throughout the year in the lower Kuskokwim River area, although some areas reportedly have primary and secondary periods of harvest. For example, for the community of Akiachak, Coffing et al. (2001: 41) indicate that while rainbow trout can be harvested year round, the usual harvest period is from late May through mid-October, and from late January through the end of March. Likewise, in the community of Kwethluk, rainbow trout are primarily harvested from late June to mid- September, and secondarily from mid-March to early May and from late September to mid-October (during moose hunting) (Coffing 1991: 62). The Alaska Department of Fish and Game (1993: 2) reports that the community of Bethel harvests rainbow trout from mid-May through September and from December through February.

[3] It is possible that the sources that use the generic term "trout" are including rainbow trout in that designation. Coffing et al. (2001:74) notes that "trout" is a collective name used … to define Arctic grayling, Dolly Varden, lake trout and rainbow trout.

3. A pattern of use consisting of methods and means of harvest which are characterized by efficiency and economy of effort and cost, conditioned by local characteristics

As noted and/or described in Zagoskin (1967), Oswalt (1963), and Vanstone (1981), freshwater fish were historically harvested using a broad array of gear types including gillnets, dip nets, spears, hook and line, and fish traps. Today, rainbow trout are typically harvested either with rod and reel, or as an incidental harvest in gillnets. Coffing et al. (2001: 66) indicate that "… rod and reel gear was used to harvest nearly all of the Dolly Varden, Arctic grayling and rainbow trout…." (a small percentage were harvested using set gillnets). For the community of Kwethluk, Coffing (1991: 64) notes that "… During June and July, people take trips up the Kwethluk, Akulikutak and Kisaralik rivers to harvest grayling, rainbow trout, Dolly Varden and pike using rod and reel gear. …. Short gillnets are set for whitefish in small channels and sloughs adjacent to the Kwethluk River, often in close proximity to a fish camp or lake. These nets sometimes catch pike, grayling, and trout." Rainbow trout are commonly harvested incidental to the harvest of Dolly Varden, whitefish, and other freshwater species in early spring and late fall using short set nets of about 4.5-inch mesh nets that are set in open water in streams, near lake outlets and in sloughs (ADF&G 1993: 2). Finally, based on household surveys conducted in the community of Bethel in 2002 and 2003, the majority (85% in 2002, 82% in 2003) of rainbow trout reported harvested were harvested using rod and reel and the remaining were harvested using set nets (ADF&G and Orutsararmiut Native Council 2002, 2003).

4. The consistent harvest and use of fish or wildlife as related to past methods and means of taking: near, or reasonably accessible from the community or area

In the lower Kuskokwim area, rainbow trout are generally harvested within or near to the community, or during hunting and trapping activities away from the communities. The areas used for harvesting are generally accessible by boat during periods of open water and by snowmachine following freezeup. According to one source, residents of Napaskiak and Tuluksak harvest rainbow trout in the Kwethluk and Kisaralik Rivers, while residents of Bethel harvest rainbow trout from the lower stretches of these two rivers (USFWS 1988). Coffing et al. (2001: 74) note that Akiachak residents harvest rainbow trout in the Kwethluk, Kasigluk and Kisaraluk Rivers as well as in the Kuskokwim River between Kwethluk and Bethel. Coffing (1991: 65) notes that residents of the community of Kwethluk use aircraft to fly to camps in the mountains during mid to late August where they harvest parka squirrel, caribou, brown bear, beaver, porcupine, moose, lake and rainbow trout, Dolly Varden and grayling. Coffing (1991: 142) also notes that people harvest rainbow trout while moose hunting in the fall in tributaries of the Kuskokwim River above Kalskag.

5. A means of handling, preparing, preserving, and storing fish or wildlife which has been traditionally used by past generations, including consideration of alteration of past practices due to recent technological advances, where appropriate

Historical accounts of the handling and preservation of rainbow trout are very limited. One source (Oswalt 1978) speaks to utilization of nonsalmon fish, mentioning that aboriginal techniques for processing continued into the 1800s, and that people ate fish in many ways: fresh, boiled, dried, smoked, buried or frozen for later use. Today, preservation methods generally

depend on the time of year that rainbow trout are harvested. When taken with rod and reel during ice free months, rainbow trout are typically eaten fresh after being harvested. Coffing et al. (2001: 79) note that "…. fish were used in a variety of ways. Freshly caught fish were shared widely in the community and many were eaten soon after they were harvested. Blackfish, rainbow trout, grayling and Dolly Varden are usually eaten soon after they are caught. …. Fish harvested in winter were easily frozen if not used immediately, although, if harvest exceeded the household's needs, they were easily distributed to other households…. In addition to baking, frying, and boiling, some fish such as whitefish were dried and smoked along with salmon… Nearly all of the fish, including the head, the stomach, heart, liver and eggs of some fishes such as burbot are consumed." This pattern is likely typical of the lower Kuskokwim area.

6. A pattern of use which includes the handing down of knowledge of fishing and hunting skills, values, and lore from generation to generation

As with other subsistence activities, people in the lower Kuskokwim area typically learn how and where to fish from family members. Knowledge of locations of concentrations of rainbow trout, good locations for rod and reel and hook and line fishing, and the best kinds of equipment or techniques to use are all shared between family members and passed down through the generations. Additionally, values concerning appropriate treatment and use of rainbow trout are also shared within and between generations. Coffing et al. (2001: 79) note that "… Men, women and children of various ages were involved in fishing. Children accompanied their parents or relatives when putting a set gillnet in the water, when checking a net set under the ice, or when ice fishing.

7. A pattern of use in which the harvest is shared or distributed within a definable community of persons

While there is little detailed information on the sharing of rainbow trout among people in the lower Kuskokwim, it is likely that once harvested, rainbow trout (and other nonsalmon fish) become part of the widespread sharing between extended family networks that characterizes all subsistence foods in most of rural Alaska (cf. Wolfe et al. 1984). The pattern described by Coffing et al. (2001: 79) for Akiachak nonsalmon is likely characteristic of lower Kuskokwim residents' treatment of rainbow trout: "… Freshly caught fish were shared widely in the community and many were eaten soon after they were harvested… Fish harvested in winter were easily frozen if not used immediately, although, if harvest exceeded the household's needs, they were easily distributed to other households…." As noted in the customary and traditional use worksheet developed by the ADF&G (1993: 1), "…When rainbow trout are taken in nets or by subsistence jigging through the ice they are usually retained, eaten within the household, or given to other households to be eaten." Coffing (1991: 70) notes that while 29% of the households in Kwethluk harvested rainbow trout, 20% of these households shared rainbow trout with other households, and 6% of the households received rainbow trout.

8. A pattern of use which relates to reliance upon a wide diversity of fish and wildlife resources of the area and which provides substantial cultural, economic, social, and nutritional elements to the community or area

The Lower Kuskokwim River communities of Tuntutuliak, Napakiak, Napaskiak, Oscarville, Bethel, Atmautluak, Nunapitchuk, Kasigluk, Tuluksak, and Upper and Lower Kalskag are all highly dependent upon the annual cycle of subsistence harvests of resources. With the exception of Bethel, the regional hub, annual incomes in these communities are among the lowest in Alaska, and access to wage employment is very limited. As noted earlier, the harvest of wild resources is a critical component of the economies in all villages, and all villages rely on the harvest of a wide diversity of resources, including salmon, nonsalmon fish, land mammals (i.e., black and brown bear, moose, caribou), migratory waterfowl, other birds, furbearers, berries, greens, and wood. Per capita harvests in some of these communities exceed 750 pounds (ADF&G 2001). **Figures 1** and **2** provide an illustration of the wide diversity and seasonality of fish and wildlife harvests typical of communities in the lower Kuskokwim. Rainbow trout are generally taken during freshwater fishing activities occurring throughout the year or concurrent with other subsistence activities (i.e., moose hunting). While contributing a small amount in terms of the total pounds per capita, rainbow trout are part of the seasonal harvest of fish and game resources that is the foundation of the areas' economy and culture.

Effects of the Proposal

Adoption of the proposal would result in expansion of the positive determination for rainbow trout in the Kuskokwim Area to include residents of the eleven lower Kuskokwim River communities of Tuntutuliak, Napakiak, Napaskiak, Oscarville, Bethel, Atmautluak, Nunapitchuk, Kasigluk, Tuluksak, and Upper and Lower Kalskag which contained about 2,492 households in 2000. Expanding the existing customary and traditional use determination for rainbow trout to include residents of these eleven communities would not likely change the existing pattern of harvest and use of rainbow trout, but rather would acknowledge the existing harvest and use of rainbow trout. If proposal FP05-08 is also passed, fourteen communities would be added to the existing customary and traditional use determination for rainbow trout in the Kuskokwim Area.

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Figure 1. Seasonal Round of Resource Use in Nunapitchuk, 1983 (after Andrews 1987: 313)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Chinook Salmon					X	X						
Sockeye salmon						X	X	X				
Chum salmon						X	X	X				
Coho salmon								X				
Pink salmon								X				
Whitefish						X	X	X	X	X		
Northern pike	X	X	X	X	x	x	x	x	X	X	X	
Burbot	X	X	X	X						X	X	
AK. Blackfish	X	X		X						X	X	X
Sheefish					X						X	
Moose									X			
Black bear									X			
Seals			X	X				X				
Ducks					X	x	x	X	X			
Geese					X	x	x	X	X			
Cranes					X	x	x	X	X			
Eggs						X						
Ptarmigan	X	X	X	X								X
Hare			X	X								
Beaver	X	X	X	x	x	x			x	x	x	X
Muskrat				X	X						x	
Mink	X	X	x	x				x			X	
Land otter	x	x	X	X							x	x
Fox	x	x	x								x	x
Salmonberries								X				
Blueberries								X	X			
Cranberries									X	X		
Blackberries									X			
Plants							X	X	X			
Firewood	X	X	X	X	X	X	X	X	X	X	X	X

X primary periods of harvest

x occasional periods of harvest

Figure 2. Seasonal Round of Subsistence Harvest Activities, Akiachak, 1987-1998 (after Coffing 2001: 41-43).

	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
Smelt					xX	Xx						
Chinook salmon					xX	XX	xx					
Chum salmon					xx	XX	Xx	Xx				
Sockeye salmon					x	xX	Xx	x				
Dolly Varden	xX	XX	XX	xx	xx	XX	XX	XX	XX	Xx	xx	Xx
Grayling	xX	XX	XX	xx	xx	XX	XX	XX	XX	Xx	xx	Xx
Rainbow trout	xX	XX	XX	xx	xx	XX	XX	XX	XX	Xx	xx	Xx
Lake trout	xX	XX	XX	xx	xx	xx	xx	xX	XX	Xx	xx	xx
Burbot	XX	XX	XX	Xx	xx	xx	xx	xx	xx	xX	XX	XX
Pike	xX	XX	XX	Xx	xx	xx	xx	xx	xx	xx	xx	xx
Whitefish	XX	XX	XX	XX	xx	xx	xX	XX	XX	XX	XX	XX
Sheefish	XX	XX	XX	xx	xX	XX	xx	xX	Xx	xx	xX	XX
Blackfish	XX	XX	XX						xX	XX	XX	XX
Herring					xX	x						
Halibut					xx	xx						
Lamprey										xx	x	
Caribou	XX	XX	XX	X		XX	XX	XX	XX	XX	XX	XX
Moose	XX	XX	XX	X		XX	XX	XX	XX	XX	XX	XX
Black and Brown Bear	XX	XX	XX	Xx	XX	XX	XX	XX	XX	XX	XX	XX
Hare	XX	XX	XX	Xx				x	xX	XX	XX	XX
Beaver	XX	XX	XX	XX	XX	xx	xx	xx	XX	XX	XX	XX
Otter	XX	XX	XX							x	xx	xx
Marten	XX	XX	XX									xx
Lynx	XX	XX	XX								x	XX
Fox	XX	XX	XX								xX	XX
Muskrat				x	XX	x			x	Xx		
Mink	x									x	XX	XX
Wolf, coyote, wolverine	XX	XX	XX								xx	XX
Porcupine	XX	XX	XX	Xx	xx	xx	xx	XX	XX	XX	XX	XX
Parka Squirrel								XX	XX			
Ducks				xX	XX	x		x	XX			
Geese				xX	XX			x	XX			
Swan				xX	Xx			xx	XX			

FP05-08 Executive Summary	
General Description	Revise C&T use determination for the Kuskokwim River drainage. (Originator: Western Interior Regional Council)
Proposed Regulation	**Kuskokwim Area – Rainbow trout** *KUSKOKWIM AREA* *Rainbow trout.* *Residents of the communities of Quinhagak, Goodnews Bay, Kwethluk, Eek, Akiachak, Akiak, and Platinum.* *KUSKOKWIM AREA* *Rainbow trout.* *Residents of the communities of Quinhagak, Goodnews Bay, Kwethluk, Eek, Akiachak, Akiak, Platinum,* ***Aniak, Chuathbaluk, and Crooked Creek***
Region 5 - Yukon-Kuskokwim Delta Regional Council Recommendation	**Support.**
Region 6 - Western Interior Regional Council Recommendation	**Support.**
Interagency Staff Committee Recommendation	**Support.**
ADF&G Comments	The Federal Subsistence Board meeting book is being published prior to development of final recommendations and comments by the Alaska Department of Fish and Game. This information will be available on the Department's website by January 4, 2005. See the ADF&G homepage, under the headings of "highlights" and "regulations", at http://www.adfg.state.ak.us. For those without computer access, please call 1-907- 267-2360 for further information.
Written Public Comments	**None.**

REGIONAL ADVISORY COUNCIL RECOMMENDATIONS

YUKON-KUSKOKWIM DELTA REGIONAL COUNCIL

Support. The Yukon-Kuskokwim Delta Regional Council supports the proposal as written**.** Historically, local indigenous people harvested rainbow trout for subsistence food. Local people, from the village of Kalskag, all the way to village of Crooked Creek, harvested rainbow trout historically in wintertime fishing through the ice. When a person eats the same fish species for breakfast, lunch, and dinner, they get tired of eating that fish species. For example, in Tundra villages, people get tired of eating dried fish day after day. The locals harvest other species, such as blackfish in winter, to satisfy their desire for a fresh fish. In the mid-Kuskokwim area, local people fish for rainbow trout sometime for 3 to 4 days at a time for fresh fish and subsistence food supply in winter and spring.

WESTERN INTERIOR REGIONAL COUNCIL

Support. The Regional Council supports the original proposal which included the community of Crooked Creek. The Regional Council has knowledge that residents of Crooked Creek do utilize this fishery.

INTERAGENCY STAFF COMMITTEE RECOMMENDATION

Support the proposal, consistent with the recommendations of the Yukon-Kuskokwim Delta and Western Interior Regional Advisory Councils.

Justification

Residents of the middle Kuskokwim River area have utilized rainbow trout for many generations, and expanding the existing customary and traditional use determination as requested would acknowledge that use.

COMMENTS

ADF&G

The Federal Subsistence Board meeting book is being published prior to development of final recommendations and comments by the Alaska Department of Fish and Game. This information will be available on the Department's website by January 4, 2005. See the ADF&G homepage, under the headings of "highlights" and "regulations", at http://www.adfg.state.ak.us. For those without computer access, please call 1-907- 267-2360 for further information.

PUBLIC

None.

STAFF ANALYSIS
FP05-08

ISSUE

Proposal FP05-08, submitted by Western Interior Regional Advisory Council, requests that the existing positive customary and traditional use determination for rainbow trout in the Kuskokwim Area be expanded to include the communities of Aniak, Chuathbaluk and Crooked Creek. As originally published, the proposal would have limited the scope of the request to the Kuskokwim River drainage, but upon clarification with the proponent, it became clear that the intent of the proposal was to add these communities to the existing customary and traditional use finding, which is for the Kuskokwim Area. A related proposal, FP05-07 (analyzed separately), also requests that the existing positive customary and traditional use determination for rainbow trout in the Kuskokwim area be expanded to include the eleven communities of Tuntutuliak, Napakiak, Napaskiak, Oscarville, Bethel, Atmautluak, Nunapitchuk, Kasigluk, Tuluksak, Upper Kalskag and Lower Kalskag.

DISCUSSION

Existing Federal Regulation

KUSKOKWIM AREA	*Rainbow trout*	*Residents of the communities of Quinhagak, Goodnews Bay, Kwethluk, Eek, Akiachak, Akiak and Platinum.*

Proposed Federal Regulation

KUSKOKWIM AREA	*Rainbow trout*	*Residents of the communities of Quinhagak, Goodnews Bay, Kwethluk, Eek, Akiachak, Akiak and Platinum,* ***Aniak, Chuathbaluk and Crooked Creek.***

The Western Interior Regional Advisory Council (Council) requests the existing positive customary and traditional use determination for rainbow trout in the Kuskokwim Area be expanded to include residents of the middle Kuskokwim River communities of Aniak, Chuathbaluk and Crooked Creek. The Council states that residents of these communities have used rainbow trout in the middle Kuskokwim River drainage where they are present (WIRAC 2004a). According to Lafferty (2003: 57), rainbow trout are at the northern range of their geographic distribution in the Kuskokwim Area, and Kuskokwim River tributaries that are known to produce rainbow trout in the area of concern include all drainages up to and including the Aniak River. Residents of Aniak and Chuathbaluk also report harvesting rainbow trout in the Holokuk River and other drainages and locations upriver of Aniak (Krauthoefer 2004, pers. comm.), and there are other scattered reports of rainbow trout being caught in tributaries above the Aniak river (Burr 2004, pers. comm.).

Extent of Federal Public Waters

Federal jurisdiction within the Kuskokwim Area extends throughout the lower Kuskokwim River drainage **(Map 1),** the Kanektok River, the Arolik River, the upper reaches of the Goodnews River drainage, and Nunivak Island including marine waters extending out three miles around the island. These waters are within the boundaries of the Yukon Delta National Wildlife Refuge (NWR) and the Togiak NWR.

For the Kuskokwim River drainage, the Yukon Delta NWR boundaries include all waters from the mouth of the Kuskokwim River upstream to and including the lower portion of the Aniak River. Federal jurisdiction on the Aniak River extends approximately 5.6 miles upstream of its confluence with the Buckstock River.

Note: For purposes of this discussion, the phrase "Federal public waters" is defined as those waters described under 50 CFR 100.3(b).

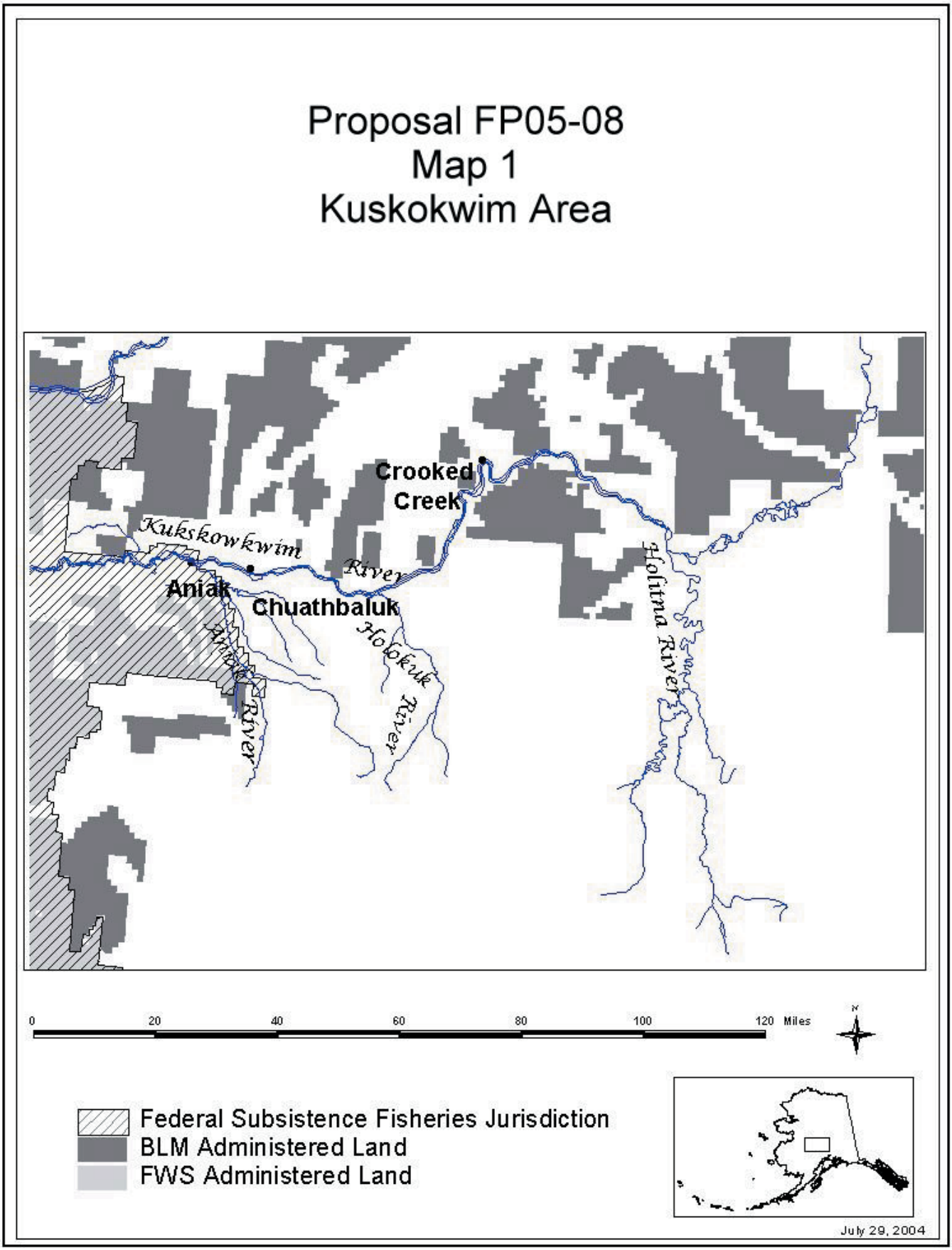
Regulatory History

On September 30, 1990, the Association of Village Council Presidents (AVCP) submitted a request for reconsideration to the Federal Subsistence Board (Board) to permit the harvest of rainbow trout by residents of all communities within the AVCP region (under then temporary Federal regulations). This would have included the three communities in question. On November 30, 1990, the Board decided to continue to regulate the taking of rainbow trout on Federal public waters in accordance with the existing temporary Federal management regulations until such time as an Environmental Impact Statement (EIS) was developed and a final regulatory program was completed. That occurred, and the initial Federal regulations became effective on July 1, 1991.

On August 12, 1991 the AVCP submitted a second request for reconsideration to the Board to permit the harvest of rainbow trout under Federal subsistence management regulations, although the request was limited to the seven communities of Goodnews Bay, Quinhagak, Platinum, Eek, Kwethluk, Akiachak, and Akiak.

The Board met on September 25, 1991 to consider the request from AVCP on rainbow trout (among others). At that meeting, the Board heard testimony from a number of local residents regarding the use of rainbow trout by residents of the area. The Board voted to postpone action until its December meeting to allow staff additional time to evaluate existing information. At its December 18, 1991 meeting, the Board recognized rainbow trout as a subsistence use species in the Kuskokwim Bay area, but opted to delay implementing a harvest program until use areas could be mapped and the navigability status of waters (related to jurisdiction criteria at that time) in those areas determined.

During September and October 1992, the U.S. Fish and Wildlife Service (USFWS), Office of Subsistence Management (OSM) conducted village surveys throughout the region. The surveys were designed to determine what waters are, or have been, used to harvest rainbow trout, what time of year those harvests occurred, what gear types were used, and whether or not the fishing


Proposal FP05-08
Map 1
Kuskokwim Area
Crooked Creek
Kukskowkwim River
Aniak
Chuathbaluk
Aniak River
Holokuk River
Holitna River
0
20
40
60
80
100
120 Miles
N
Federal Subsistence Fisheries Jurisdiction
BLM Administered Land
FWS Administered Land
July 29, 2004

sites could be reached by boat. The information gathered was analyzed and the use areas mapped. Based on this work, in April 1993, the Board adopted a positive customary and traditional use determination for rainbow trout for the communities of Goodnews Bay, Quinhagak, Platinum, Eek, Kwethluk, Akiachak, and Akiak. The Board also allowed these communities to harvest rainbow trout in those non-navigable tributaries on Federal public waters of the Kuskokwim River downstream from the confluence of the Kuskokwim and Holitna Rivers and from those non-navigable drainages to Kuskokwim Bay north of Platinum. And, lastly, the Board restricted the harvest to the use of rod and reel, gillnet, or jigging through the ice while the use of gillnets was prohibited March 15-June 15 to prevent localized depletion of spawning populations (FSB 1993: 114-120).

Community Characteristics

A summary of the population of the three communities between 1960[1] and 2000, and the number of households in 2000[2], is shown in **Table 1.**

Table 1. Population of Aniak, Chuathbaluk and Crooked Creek, 1960-2000, and number of households in 2000 (ADCED 2004).

Community	1960	1970	1980	1990	2000 (# of Households)
Aniak	308	205	341	540	572 (174)
Chuathbaluk	0	94	105	97	119 (33)
Crooked Creek	92	59	108	106	137 (38)

The three communities of Aniak, Chuathbaluk and Crooked Creek are in the middle or central Kuskokwim River area. The community of Aniak sits on the south bank of the Kuskokwim River, near the confluence of the Aniak River. It serves as the regional hub for the area. Established in the 1930s at the site of an abandoned prehistoric Yup'ik settlement, the population of Aniak is primarily Yup'ik Eskimo and Deg Hi'tan and Kuskokwim Athabascan[3] (Oswalt 1980). Because it is a regional center, there are more opportunities for wage employment than in some of the surrounding villages, although the harvest and use of subsistence foods continues to play an important role in the contemporary economy of the region (DCED 2004). Chuathbaluk is located on the north side of the Kuskokwim River approximately 11 miles upstream from Aniak (Oswalt 1980: 35-36; Vanstone 1959). The population of Chuathbaluk is predominantly Yup'ik Eskimo and Athabascan and is highly dependent on the harvest and use of subsistence foods. A settlement at the site of present day Crooked Creek, which is about 50 miles upriver from Aniak, was noted by Zagoskin in 1844 (1967: 265) and appears to have been occupied at different times

[1] It is unclear why no population figures are reported for Chuathbaluk for 1960, since the site was occupied prior to the time, as noted in VanStone (1959).

[2] As of December 2003, the number of households for these communities are as follows: Aniak 165; Chuathbaluk 29; Crooked Creek 38 (Krauthoefer 2004, pers. comm.).

[3] At the 1997 annual meeting of the Tanana Chiefs Conference, Inc., the regional non-profit organization for Interior Alaska, a resolution (No. 97-35) entitled "Correct spelling of 'Athabascan'" was passed by the delegates. The preferred spelling of Athabascan is used herein.

by both Yup'ik and Athabascan groups (e.g., Oswalt 1980: 36-38). Residents of the present day community of Crooked Creek are both Yup'ik and Athabascan, and are highly dependent on the harvest and use of subsistence foods.

Eight Factors for Determining Customary and Traditional Uses

A community or area must generally exhibit the following eight factors, which exemplify customary and traditional use. The Board will make customary and traditional use determinations based on an application of these eight factors (50 CFR 100.16(b) and 36 CFR 242.16(b)). In addition, the Board will take into consideration the reports and recommendations of any appropriate Regional Advisory Council regarding customary and traditional use of subsistence resources (50 CFR 100.16(c) and 36 CFR 242.16(c)).

1. A long-term, consistent pattern of use, excluding interruptions beyond the control of the community or area.

Rainbow trout are one of many non-salmon species of fish that have long been part of the resource base of middle Kuskokwim residents. As noted by Zagoskin (1967: 222), "…the basic food of the Kuskokwim Natives is fish in various forms- boiled, pickled, fried, iced or shredded and dried….." Charnley (1984: 143) notes that rainbow trout is one of a number of non-salmon fish species that have "… formed part of the central Kuskokwim Eskimo diet since aboriginal times." Charnley (1984: 143) goes on to note that "… rainbow trout are harvested year round in Chuathbaluk …. And are particularly important as a food source in months when fresh salmon are not available." As noted, rainbow trout are at the northern range of their geographic distribution in the Kuskokwim Area, although residents of Aniak and Chuathbaluk report harvesting rainbow trout in the Holokuk River and other drainages and locations upriver of Aniak (Krauthoefer 2004, pers. comm.).

2. A pattern of use recurring in specific seasons for many years.

Rainbow trout are taken throughout the year by residents of the middle Kuskokwim River. Harvest primarily occurs by hooking through the ice in winter and with rod and reel during the spring and summer. In a description of the seasonal round of harvest activities for the communities of Aniak, Crooked Creek and Red Devil (Brelsford et al. 1987), rainbow trout is mentioned as being harvested year round by residents of the community of Aniak (**Figure 1**). Specifically, it is noted that rainbow trout are taken "… in summer with rod and reel by Aniak residents, and in winter by hooks through the ice …" (Brelsford et al. 1987: 23). Another study of eight middle Kuskokwim River communities, including Aniak, Chuathbaluk and Crooked Creek[4] (Stickney 1981), indicates that the harvest of rainbow trout is a late fall and winter activity (**Figure 2**). Stickney (1981: 17) notes that "…Other fish species including lush, whitefish, grayling, rainbow trout, pike and others provide fresh protein in the fall and winter months and add variety to an ordinarily limited diet." In a study of resource use by two middle Kuskokwim River communities, Charnley (1984: 152) observes that while rainbow trout are

[4] It should be noted that Stickney (1981) includes a generalized seasonal round for the middle Kuskokwim River area and refers generally to the use of non-salmon fish (which includes rainbow trout), but does not include community specific seasonal rounds. In Brelsford et al. (1987) the seasonal round for Crooked Creek does not include rainbow trout.

generally harvested year round, "…. rainbow trout are harvested by Chuathbaluk residents from the Aniak River primarily during winter when rivers are frozen and travel is by snowmachine. These species are taken through holes in the ice using hook and line in winter and occasionally with rod and reel in months of open water." (**Figure 3**). Krauthoefer et al. (2004) note that for residents of Aniak and Chuathbaluk "….the harvest of rainbow trout takes place primarily in winter and spring with hook and line gear, jigging through the ice… Rainbows are targeted specifically during winter and spring for fresh food. According to one respondent, rainbows school up in the wintertime, congregating around beaver lodges, log jams, and cutbanks, making it easier to catch many fish in a day. Respondents spoke of catching 30 fish a day with little problem and one respondent noted hearing about someone catching up to 100 in a single fishing hole. It was also noted that rainbows are fatter in the winter." Krauthoefer et al. (2004) go on to note that "…rainbows are taken during summer and fall with rod and reel in open water and are sometimes caught incidentally during summer net fishing for salmon. One respondent recalled his father teaching him to beach seine on the Aniak, only if he needed to, to catch fish and rainbow trout just to eat right away for dinner…."

3. A pattern of use consisting of methods and means of harvest which are characterized by efficiency and economy of effort and cost, conditioned by local characteristics

As noted, the harvest of rainbow trout by middle Kuskokwim residents is generally accomplished by hook and line (either held by hand or sometimes attached to a stick) through the ice in winter, or rod and reel in summer. Rainbow trout are also sometimes harvested as an incidental catch with nets operated to catch salmon (ADF&G 1993: 1).

4. The consistent harvest and use of fish or wildlife as related to past methods and means of taking: near, or reasonably accessible from the community or area.

In the middle Kuskokwim area, rainbow trout are generally harvested within or near to the community, or during hunting and trapping activities away from the communities. The areas used for harvesting are generally accessible by boat during periods of open water and by snowmachine following freeze-up. Charnley (1984: 152) notes that "… Chuathbaluk residents may travel to the Aniak River via overland trails by snowmachine for the express purpose of harvesting rainbow trout or may take them in the course of hunting and trapping activities." Residents of Aniak and Chuathbaluk most commonly harvest rainbow trout in the Aniak River, Doestock Creek and Buckstock River, although they are also harvested in other drainages or locations upriver of Aniak (Krauthoefer et al. 2004). residents of Crooked Creek also travel downstream to Aniak to harvest rainbow trout (WIRAC 2004b).

5. A means of handling, preparing, preserving, and storing fish or wildlife which has been traditionally used by past generations, including consideration of alteration of past practices due to recent technological advances, where appropriate

Preservation methods generally depend on the time of year that rainbow trout are harvested. When taken with rod and reel during ice free months, rainbow trout are typically eaten fresh after being harvested. Charnley (1984: 152) notes that "preservation is through freezing. Rainbow trout are most commonly fried for eating, though they can be boiled, baked, and made into soups…" As noted by Zagoskin (1967: 222) "…the basic food of the Kuskokwim Natives is fish in various forms- boiled, pickled, fried, iced or shredded and dried….."

6. A pattern of use which includes the handing down of knowledge of fishing and hunting skills, values, and lore from generation to generation

Rainbow trout have been a part of the seasonal pattern of resource use in the middle Kuskokwim area for many generations, and local people typically learn how and where to fish from family members. Krauthoefer et al. (2004) report that one resident of Aniak "… recalled his father teaching him to beach seine on the Aniak, only if he needed to, to catch fish and rainbow trout just to eat right away for dinner." In addition to teaching about the best kinds of equipment or techniques to use, knowledge of locations of concentrations of rainbow trout and good locations for rod and reel and hook and line fishing are all shared between family members and passed down through the generations. Values concerning appropriate treatment and use of rainbow trout are also shared within and between generations.

7. A pattern of use in which the harvest is shared or distributed within a definable community of persons

As noted in the customary and traditional use worksheet developed by the ADF&G (1993: 1), "… When rainbow trout are taken in nets or by subsistence jigging through the ice they are usually retained, eaten within the household, or given to other households to be eaten." Once harvested, rainbow trout become part of the widespread sharing between extended family networks that characterizes all subsistence foods in most of rural Alaska (cf. Wolfe et al. 1984).

8. A pattern of use which relates to reliance upon a wide diversity of fish and wildlife resources of the area and which provides substantial cultural, economic, social, and nutritional elements to the community or area

Reliance on the harvest and use of wild resources has long been the central element of the life of middle Kuskokwim River residents. As noted in the community characteristics section, subsistence use of resources continues to be a vital and essential component of the economy of Aniak, Chuathbaluk and Crooked Creek. While somewhat dated, the primary sources of information on resource use by residents of the middle Kuskokwim area (Brelsford et al. 1987; Charnley 1984, and Stickney 1981) all point to the wide diversity of fish and game resources used by residents of this area, and to the foundation of the harvest and use of resources to the economy and well being of residents of the area. **Figures 1-3**, taken from those studies, illustrate the wide diversity and seasonality of resources used in the three communities. While the general pattern of use of rainbow trout can be elicited from the three aforementioned reports, household surveys would provide useful information about the contemporary use of resources, specifically rainbow trout, of these three areas.

Effects of the Proposal

Adoption of the proposal would result in expansion of the positive determination for rainbow trout in the Kuskokwim Area to include residents of Aniak, Chuathbaluk, and Crooked Creek, which contained an estimated 245 households in 2000. Expanding the existing customary and traditional use determination for rainbow trout to include residents of these three communities would not likely change the existing pattern of harvest and use of rainbow trout, but rather would acknowledge the existing harvest and use of rainbow trout. If proposal FP05-07 is also passed, fourteen communities would be added to the existing customary and traditional use determination for rainbow trout in the Kuskokwim Area.

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Figure 1. Annual Round of Resource Harvest in Aniak (after Brelsford, Peterson and Haynes 1987: 17).

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Black & Brown Bear			x	x	x	x	x	X	X	X	x	x
Caribou	x	X	x	x	x			X	X	x	x	x
Moose		X							X		X	
Sheep								X				
Beaver	X	X	X	x							X	X
Lynx	X	X	x								X	X
Otter	X	X	X	x							X	X
Marten	X	X	x								X	X
Muskrat	x	x	x	X	X	X			x	x	x	x
Red Fox	X	X	x								X	X
Wolf	X	X	x								X	X
Wolverine	X	X	x								X	X
Chum/red Salmon					X	X	X					
King Salmon				x	X	X	x					
Silver Salmon						x	X	X				
Blackfish										X	X	
Burbot	x	x	x							x	X	X
Dolly Varden	x	x	x	x	x	X	X	X	X	x	x	x
Grayling	x	x	x	x	X	X	X	X	X	X	x	x
Lamprey										X	X	
Least cisco	x	x			x		x	x	X	X	x	x
Pike	X	X	X	X	X	X	X	X	X	X	X	X
Rainbow Trout	X	X	X	X	X	X	X	X	X	X	X	X
Sheefish		x	x	x	X	X	x	x	x	x		
Smelt					X	X						

Figure 1 – cont'd –. Annual Round of Resource Harvest in Aniak (after Brelsford, Peterson and Haynes 1987: 17).

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Sucker					X	X	X					
Whitefish			x	x	X	x	x	X	X	X		
Grouse	X	X	x	x				x	X	X	X	X
Porcupine	x	x	x						X	X	X	x
Ptarmigan	X	X	X	x				x	x	X	X	X
Snowshoe Hare	X	X	x					x	X	X	X	X
Waterfowl				X	X	x		x	X	x		
Berries						x	X	X	X	x		
Edible plants			x		X	X						
Wood	X	X	X	X	X	X	X	X	X	X	X	X

X Primary months of harvest

x Secondary months of harvest

Figure 2. Annual Round of Resource Harvest in Middle Kuskokwim (after Stickney 1981: 15)

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Moose									X		X	
Caribou	X	X	X	x					X	X	x	X
Bear				X	X	x	x	x	X			
Beaver		X	X	x								
Furbearer	x	X	X	x							X	X
Waterfowl				x	x					X	x	
Small Game	X	X	X	X						x	X	X
Salmon					X	X	X	x				
Pike	X	X	x								x	X
Grayling/Whitefish										x	X	
Rainbow Trout/Dolly Varden	X	X	X	x							x	X
Lush	X	X	X	x							x	X
Berries							X	X	X			
Wood	X	X	X	X	X	X	X	X	X	X	X	X

X resource harvest time reported for 1980-1981

x possible resource harvest time reported

Figure 3. Annual Round of resource Harvest in Chuathbaluk (after Charnley 1984: 69-70)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Moose	x	x	x	x	x	x	x	x	X	x	x	x
Caribou	X	X	x	x	x	x	x	x	X	x	X	X
Black & Brown Bear					x	x	x	x	X			
Porcupine	x	x	x	x	x	x	x	x	x	x	x	x
Snowshoe Hare	X	X	X	X						X	X	X
Grouse	X	X	X	X					X	X	X	X
Ptarmigan	X	X	X	X	X							
Waterfowl				X	X	x	x	x	x			
Mink	X	X									X	X
Marten	X	X									X	X
Wolf	X	X	X								X	X
Wolverine	X	X	X								X	X
Land Otter	X	X	X	X							X	X
Red Fox	X	X									X	X
Lynx	X	X	X	X							X	X
Beaver	X	X	X	X							X	X
Muskrat	X	X	X	X	X						X	X
Salmon						X	X	X	X			
Lamprey											X	
Sheefish					X	X	X	X	X			
Least Cisco	x	x	x	x	x	x	x	x	X	X	x	x
Whitefish	x	x	x	x	X	X	X	X	X	X	X	X
Rainbow Trout	X	X	X	X	X	X	X	X	X	X	X	X
Arctic Char	X	X	X	X	X	X	X	X	X	X	X	X
Grayling	X	X	X	X	X	X	X	X	X	X	X	X
Smelt					X	X						
Blackfish										x	x	x

Figure 3 – cont'd –. Annual Round of resource Harvest in Chuathbaluk (after Charnley 1984: 69-70)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Pike	X	X	X	X	X	X	X	X	X	X	X	X
Sucker						X	X	X	X			
Burbot	X	X	X							X	X	X
Greens					X	X	X	X	X			
Berries							X	X	X			

X concentrated harvest efforts

x occasional harvest efforts

FP05-02 Executive Summary	
General Description	Relax or lift fishing schedules when runs permit, irrespective of commercial opportunities. (Submitted by: Association of Village Council Presidents, and seven regional tribal councils)
Proposed Regulation	**Yukon-Northern Area – Salmon** *§___.27(i)(3)(ii) For the Yukon River drainage, Federal subsistence fishing schedules, openings, closings, and fishing methods are the same as those issued for the subsistence taking of fish under Alaska Statutes (AS 16.05.060), unless superseded by a Federal Special Action.* ***(A) When in-season indicators of run timing and run strength provide sufficient assurances that upriver subsistence and salmon population viability needs will be met, subsistence salmon fishing schedules shall be lifted or relaxed on the waters of the Yukon River drainage to the fullest extent consistent with the continuation of upriver subsistence uses, and with the need to protect the continued viability bf salmon populations. This decision on whether to lift or relax the subsistence salmon fishing schedules shall be made independently of whether these in-season indicators further indicate sufficient abundance to allow for a state-authorized commercial king salmon fishery.*** ***(B) When the State of Alaska opens a commercial king salmon fishery on the Yukon River, and when Federal subsistence managers do not find it necessary to close this fishery in order to protect healthy salmon populations or to provide for continued subsistence uses, the subsistence salmon fishing schedules shall be immediately lifted, subject only to closures before, during and after commercial openings as provided for by state regulation. This lifting of the subsistence salmon fishing schedules shall remain in effect until such time as management of the fishery shifts to fall chum salmon management, or until such time as new in-season run timing or run strength data that was not available at the time of the commercial king salmon opening indicates that the reinstatement of the subsistence salmon fishing schedules is necessary in order to protect the continued viability of salmon populations, or to continue subsistence uses.***
Region 5 - Yukon-Kuskokwim Delta Regional Council Recommendation	**Support with modification.** There should be clarification by the State and Federal subsistence fisheries managers on the fishing schedules because there is much confusion on the salmon fishing schedules. [See next page for full recommendation.]
Region 6 - Western Interior Regional Council Recommendation	**Oppose.**

FP05-02 Executive Summary	
Region 9 - Eastern Interior Regional Council Recommendation	**Oppose.**
Interagency Staff Committee Recommendation	**Oppose**
ADF&G Comments	The Federal Subsistence Board meeting book is being published prior to development of final recommendations and comments by the Alaska Department of Fish and Game. This information will be available on the Department's website by January 4, 2005. See the ADF&G homepage, under the headings of "highlights" and "regulations", at http://www.adfg.state.ak.us. For those without computer access, please call 1-907- 267-2360 for further information.
Written Public Comments	**1 Support.** **1 Oppose.**

REGIONAL ADVISORY COUNCIL RECOMMENDATIONS

YUKON-KUSKOKWIM DELTA REGIONAL COUNCIL

Support with modification. There should be clarification by the State and Federal subsistence fisheries managers on the fishing schedules because there is much confusion on the salmon fishing schedules. The subsistence fishery came close to being a protest fishery in the Yukon-Kuskokwim Delta last summer because of the fishing schedules. Fishing schedules were relaxed in both the Yukon and Kuskokwim Rivers because there were sufficient numbers of salmon. Subsistence users have sacrificed their valuable fishing time by abiding with the fishing schedule and fishery restrictions the last few years.

The modified proposed regulation would read:

> *§___.27(i)(3)(ii) For the Yukon River drainage, Federal subsistence fishing schedules, openings, closings, and fishing methods are the same as those issued for the subsistence taking of fish under Alaska Statues (AS 16.05.060), unless superseded by a Federal Special Action.*
>
> ***(A) The windowed subsistence fishing scheduled specified in State of Alaska regulations, 5 AAC 01.210(b), may be lifted on Federal public waters when the Federal inseason manager has assessed the salmon run strength to be sufficient to meet escapement objectives, subsistence uses and the U.S./Canada border passage commitment. The subsistence fishing schedule specified in State of Alaska regulations, 5 AAC 01.210(b), may be reinstated by the Federal inseason manager when the assessment of salmon run strength indicates it is necessary to protect the continued viability of salmon populations.***

WESTERN INTERIOR REGIONAL COUNCIL

Oppose. The windowed subsistence fishing schedule improves the subsistence fishing opportunity and quality of escapement throughout the Yukon River. The Western Interior Regional Council strongly supports the windowed subsistence fishing schedule because of its benefits to Yukon River-wide subsistence fishing opportunity and quality of escapement. Wording linking relaxation of the windowed subsistence fishery schedule to a commercial fishery might be removed if there was assurance that the windowed subsistence fishing approach would not be threatened. There is a desire to leave the authority to remove the windowed subsistence fishing schedule in the hands of the fishery managers for the time being.

EASTERN INTERIOR REGIONAL COUNCIL

Oppose. This proposal would not make the Federal In-season Manager's job any easier. There is not support for doing anything that might lead to a weakening of the windowed subsistence fishing schedule; the windowed subsistence fishing schedule is critical to providing river-wide escapement and subsistence. This would cause Federal and State recommendations to be different and cause disruption. Quality escapement lets the bigger fish migrate up river.

INTERAGENCY STAFF COMMITTEE RECOMMENDATION

Oppose the proposal, consistent with the recommendations of the Western Interior and Eastern Interior Regional Advisory Councils, but contrary to the recommendation of the Yukon-Kuskokwim Delta Regional Advisory Council.

Justification

This regulation is not needed because it is a management strategy that is already in practice and is implemented in-season when the abundance of salmon is estimated to be of sufficient magnitude to remove the subsistence fishing schedule. The Alaska Board of Fisheries confirmed this management approach in March 2003. Both State and Federal fisheries managers implemented this strategy in the Yukon River in 2003 and 2004.

Subsistence users, particularly in the lower Yukon area, may not be aware of this management strategy. The Interagency Staff Committee recommends to the Federal Subsistence Board that this separation of subsistence windows and commercial fishery openings be described in the 2005 booklet that provides information to the public on Federal subsistence fishing regulations.

COMMENTS

ADF&G

The Federal Subsistence Board meeting book is being published prior to development of final recommendations and comments by the Alaska Department of Fish and Game. This information will be available on the Department's website by January 4, 2005. See the ADF&G homepage, under the headings of "highlights" and "regulations", at http://www.adfg.state.ak.us. For those without computer access, please call 1-907- 267-2360 for further information.

PUBLIC

Support. This proposal needs special attention to insure that subsistence users on the Yukon are no longer listening for further instructions from the Alaska Department of Fish and Game. We try to cry out in a sovereign tone of voice to the State Managers not listening to Alaska Natives. He proposed that this proposal be passed before finding ourselves with a large rebellious crowd.

Mike Moses, Mountain Village

Oppose.

Yukon River Darainage Fisheries Association

STAFF ANALYSIS
FP05-02

ISSUE

Proposal FP05-02, submitted by the Association of Village Council Presidents (AVCP), Yupiit of Andreafsky (St. Mary's), Asa'carsarmiut Tribe of Alaska (Mountain Village), Chevak Traditional Council, Native Village of Chuloonawick (Emmonak), Kotlik Traditional Council, Nunam Iqua Traditional Council, and Ohogamiut Traditional Council (Marshall), requests that the subsistence salmon fishing schedule on the Yukon River be lifted when inseason indicators of run timing and run strength provide sufficient assurances that upriver subsistence harvests and escapement needs will be met. The proponents further request that the decision to relax the subsistence fishing schedule be made independently of any decision to allow for a state-authorized commercial Chinook salmon fishery. They also request that this decision remain in effect until new information indicates that reinstatement of the schedule is necessary to protect a salmon population.

DISCUSSION

The Yukon River King Salmon Management Plan in State regulation stipulates that the subsistence fishing schedule shall be relaxed if the inseason run strength indicates a sufficient abundance of Chinook salmon to allow a commercial fishery. The Federal and State agencies have agreed to work together through an *Interim Memorandum of Agreement* (MOA), stating that the Federal subsistence program will use existing State fishery management plans unless they do not provide for the subsistence priority in Federal law or a separate plan(s) is developed and adopted by the Federal Subsistence Board (Board). This proposal seeks to establish a Federal regulation that would provide clear guidance to relax the subsistence fishing schedule independently of the State's Yukon River King Salmon Management Plan. The Federal inseason manager currently has the authority to open or close subsistence fisheries through a Delegation of Authority from the Board. Opening or closing a subsistence fishery does include relaxing the subsistence fishing schedule, when the run strength indicates a sufficient abundance of salmon to meet escapement objectives and subsistence uses. The Federal inseason manager has also been delegated the authority to reinstate the subsistence salmon fishing schedule when the salmon run strength assessment indicates the schedule is necessary to protect a salmon population.

A similar proposal was submitted to the Board from AVCP in 2003. In response, the Board sent a letter to AVCP dated May 22, 2003, stating that the proposed "subsistence regulations to address this issue are unnecessary as the Federal inseason manager currently has the authority to open and close subsistence fishing periods in Federal waters." In that letter, the Board also agreed that adjustments to the subsistence fishing schedule should be based upon inseason run strength independent from the State's decision to implement or announce a commercial fishery and that "in the future, separate actions and news releases would be implemented."

Existing Federal Regulation

Yukon-Northern Area–Salmon

§___.27(i)(3)(ii) For the Yukon River drainage, Federal subsistence fishing schedules, openings, closings, and fish-ing methods are the same as those issued for the subsistence taking of fish under Alaska Statutes (AS 16.05.060), unless superseded by a Federal Special Action.

Proposed Federal Regulation

Yukon-Northern Area–Salmon

§___.27(i)(3)(ii) For the Yukon River drainage, Federal subsistence fishing schedules, openings, closings, and fishing methods are the same as those issued for the subsistence taking of fish under Alaska Statutes (AS 16.05.060), unless superseded by a Federal Special Action.

(A) When inseason indicators of run timing and run strength provide sufficient assurances that upriver subsistence and salmon population viability needs will be met, subsistence salmon fishing schedules shall be lifted or relaxed on the waters of the Yukon River drainage to the fullest extent consistent with the continuation of upriver subsistence uses, and with the need to protect the continued viability of salmon populations. This decision on whether to lift or relax the subsistence salmon fishing schedules shall be made independently of whether these inseason indicators further indicate sufficient abundance to allow for a state-authorized commercial king salmon fishery.

(B) When the State of Alaska opens a commercial king salmon fishery on the Yukon River, and when Federal subsistence managers do not find it necessary to close this fishery in order to protect healthy salmon populations or to provide for continued subsistence uses, the subsistence salmon fishing schedules shall be immediately lifted, subject only to closures before, during and after commercial openings as provided for by State regulation. This lifting of the subsistence salmon fishing schedules shall remain in effect until such time as management of the fishery shifts to fall chum salmon management, or until such time as new inseason run timing or run strength data that was not available at the time of the commercial king salmon opening indicates that the reinstatement of the subsistence salmon fishing schedules is necessary in order to protect the continued viability of salmon populations, or to continue subsistence uses.

Relevant State Regulations

5 AAC 05.360 Yukon River King Salmon Management Plan. (e) If inseason run strength indicates a sufficient abundance of king salmon to allow a commercial fishery, subsistence fishing shall revert to the fishing periods specified in 5 AAC 01.210.

The fishing periods outlined in *5 AAC 01.210* (see Appendix A) establishes the Yukon River subsistence fishing schedule by subdistrict, has a provision to relax the schedule, and establishes

fishing periods in the upper river after the schedule has been relaxed.

Extent of Federal Public Waters

The area addressed by this proposal includes Federal public waters in the Yukon-Northern Area that are subject to commercial fishing openings, which includes portions of Districts 1 through 5. Federal public waters that would be affected by this proposal include the Yukon River located within and adjacent to the exterior boundaries of the Yukon Delta, Innoko, Nowitna, and Yukon Flats National Wildlife Refuges and the Yukon Charley Rivers National Preserve.

Note: For purposes of this discussion, the phrase "Federal public waters" is defined as those waters described under 50 CFR 100.3(b).

Customary and Traditional Use Determinations

§___.24 Customary and traditional use determinations.

(2) Fish determinations.
Yukon-Northern Area: Yukon River drainage–salmon other than fall chum salmon—Residents of the Yukon River drainage, including the community of Stebbins.

Yukon-Northern Area: Yukon River drainage–Fall chum salmon—Residents of the Yukon River drainage, including the communities of Stebbins, Scammon Bay, Hooper Bay, and Chevak

Background

The current subsistence salmon management system between the State and Federal agencies is a cooperative effort to minimize the impact of two sets of regulations on subsistence users.

Both State and Federal management seeks to ensure that sufficient numbers of salmon are allowed to escape to the spawning grounds and that there is sufficient opportunity for subsistence users to harvest the fish they use. The Federal and State agencies have also adopted a detailed plan outlining how they will work cooperatively inseason to manage salmon runs on the Yukon River under the dual management system. The detailed plan is entitled the Yukon River Drainage Subsistence Salmon Fishery Management Protocol. This protocol identifies preseason planning, inseason decision-making, and postseason evaluation as critical components of an effective coordinated inseason management program. It emphasizes a flexible framework for making coordinated inseason management decisions. The protocol also stipulates that the Federal manager will consult with representatives of the Yukon River Drainage Coordinating Fisheries Committee (CFC) on the preseason management strategy, management plans and inseason actions, when appropriate.

In January 2001, in response to poor Chinook salmon runs in 1998, 1999, and 2000, the Alaska Board of Fisheries modified the *Yukon River King Salmon Management Plan* to add the fishing schedule for periodic closures of the subsistence salmon fishery. This "windowed" subsistence fishing schedule has been initiated early in the season to help rebuild the salmon runs, by providing closed periods during which salmon pass through sections of the river with reduced

harvest. There was also a provision added to this plan in 2001 that stipulated that the State would relax the schedule if inseason run strength indicates a sufficient abundance of Chinook salmon to allow a commercial fishery. The Board has agreed to the subsistence fishing schedule through this management plan, although the schedule does not appear in Federal regulation.

Federal regulations were then added in May 2002, stating that the Federal subsistence fishing schedules, openings, closings, and fishing methods are the same as those issued for subsistence by the State, unless superseded by a Federal Special Action. This was done mainly to reduce duplication of information and thus the potential for confusion. The Federal inseason manager does have the authority to open subsistence salmon fishing during the scheduled or "windowed" closures if inseason run strength indicates a sufficient abundance of Chinook salmon to meet escapement objectives and subsistence uses. This authority is defined in a Delegation of Authority letter from the Board. The Federal inseason manager assesses each management decision during the season and writes a memo to the file which serves as a record of assessment and consultation with the State manager. Joint State and Federal news releases are issued once the Federal inseason manager has assessed the run and consulted with the Alaska Department of Fish and Game (ADF&G) on each action.

When the Chinook salmon run abundance is strong enough to meet escapement objectives and subsistence uses, the schedule is relaxed by subdistrict progressively upriver to coincide with the run timing of the same pulse of fish that triggered the lower river decision to relax the schedule. State and Federal managers use the same information to assess run timing and run strength. Although possible, it would be difficult to determine if sufficient salmon were available to relax the schedule prior to also deciding if enough fish are available to have a commercial opening.

In-season management is based on many factors, including test fishing indices, subsistence harvest reports, Pilot Station sonar passage estimates, and tributary escapement projects. Run size projections are also based on various factors, including previous years' run strength and age class composition, gillnet and fishwheel test fishing indices, subsistence harvest reports, sonar passage estimates, and various escapement monitoring projects throughout the drainage. The management strategy during years of average abundance is to open the Chinook salmon directed commercial fishery in the lower Yukon River when increasing subsistence or test net catches of Chinook salmon have occurred over a seven to ten-day period. This strategy provides for passage of a portion of the early run through the lower river before commercial fishing starts. Subsistence fishers in the lower river districts often report that they have completed their subsistence harvests for the year prior to any commercial fishing occurring. Also, many upper river users have reported better catches and higher quality fish being caught since the subsistence fishing schedule has been in place.

Cultural Considerations

Traditionally, Yukon River residents fished as personal, weather, and other environmental factors permitted. Subsistence fishing efforts were based on the salmon abundance, timing of the run, water conditions, and processing and drying conditions. These factors determined when, where, and how people fished. When subsistence fishing was open, fishers were allowed maximum flexibility to accommodate those environmental and social factors. Fish cannot be dried under rainy conditions and nets are subject to damage or loss when the river is high and full of debris.

Therefore, people generally delay harvesting salmon until good weather conditions are available for processing and drying.

There is a need to better understand the full impacts to subsistence users of changing harvest patterns due to the windowed subsistence fishing schedule on the Yukon River, and the effects on subsistence use opportunities. It is particularly important to know how this schedule impacts the rural residents of the Yukon River in their ability to maintain their physical, economic, traditional and cultural existence.

Effects of the Proposal

The current flexible management approach of pre-season planning, inseason management adjustments, and post-season evaluation has been responsive to relax the subsistence fishing schedule once it has been determined that escapement objectives and subsistence harvests are likely to be met with a surplus of salmon also available for a commercial fishery. The Federal inseason manager assesses each management decision and is in constant consultation with State managers during the season.

Salmon runs are difficult to reliably predict even when comprehensive historical data are available. In a system as large as the Yukon River drainage, with limited information, projecting runs is even more unreliable. The Federal manager currently has the authority to open and close subsistence fishing which includes relaxing the subsistence fishing schedule once it has been determined that escapement objectives and subsistence uses are likely to be met or reinstating the schedule when an assessment indicates a need to protect a salmon population. This authority is included in a Delegation of Authority from the Board. The public is generally not aware of this delegation. A regulation could be added to clarify to the public that the subsistence fishing schedule can be relaxed in Federal public waters when an assessment of the run strength has been made that escapement objectives, subsistence uses, and U.S./Canada border passage obligations will be met. It would also be necessary to clearly state that the Federal inseason manager can also reinstate the subsistence fishing schedule based on new information of salmon run strength that indicates the need to protect other salmon populations.

Appendix A

5 AAC 01.210. Fishing seasons and periods

(a) Unless restricted in this section, or in 5 AAC 01.220 - 5 AAC 01.249, salmon may be taken in the Yukon-Northern Area at any time.

(b) When there are no commercial salmon fishing periods, the subsistence fishery in the Yukon River drainage will be based on a schedule implemented chronologically, consistent with migratory timing as the salmon run progresses upstream. The commissioner may alter fishing periods by emergency order, if the commissioner determines that preseason or inseason run indicators indicate it is necessary for conservation purposes. The fishing periods for subsistence salmon fishing in the Yukon River drainage will be established by emergency order as follows:

(1) Coastal District, Koyukuk River and Subdistrict 5-D: seven days per week;

(2) Districts 1-3: two 36-hour fishing periods per week;

(3) District 4, and Subdistricts 5-B and 5-C: two 48-hour fishing periods per week;

(4) Subdistrict 5-A and District 6: two 42-hour fishing periods per week; and

(5) Old Minto Area: five days per week.

(c) When there are commercial salmon fishing periods, in the following locations, in addition to subsistence fishing periods opened by emergency order, salmon may be taken for subsistence during commercial salmon fishing periods, except that salmon may not be taken for subsistence during the 24 -hours immediately before the opening of the commercial salmon fishing season:

(1) District 4, excluding the Koyukuk River drainage: in Subdistrict 4-B and 4-C from June 15 through September 30, salmon may be taken from 6:00 p.m. Sunday until 6:00 p.m. Tuesday and from 6:00 p.m. Wednesday until 6:00 p.m. Friday;

(2) District 5, excluding the Tozitna River drainage and Subdistrict 5-D;

(3) District 6, except

(A) the Kantishna River drainage and that portion of the Tanana River drainage upstream of the mouth of the Salcha River;

(B) in Old Minto Area, salmon may be taken from 6:00 p.m. Friday until 6:00 p.m. Wednesday.

(d) During the commercial salmon fishing season when the department announces a commercial fishing closure that will last longer than five days, salmon may not be taken for subsistence during the following periods in the following districts:

(1) in District 4, excluding the Koyukuk River drainage, salmon may not be taken from 6:00 p.m. Friday until 6:00 p.m. Sunday;

(2) in District 5, excluding the Tozitna River drainage and Subdistrict 5-D, salmon may not be taken from 6:00 p.m. Sunday until 6:00 p.m. Tuesday.

(e) In Districts 1, 2, and 3 and Subdistrict 4-A, excluding the Koyukuk and Innoko River drainages, salmon may not be taken for subsistence during the 24 -hours immediately before the opening of the commercial salmon fishing season; and

(1) in Districts 1, 2, and 3,

(A) after the opening of the commercial salmon fishing season through July 15, salmon may not be taken for subsistence for 18 -hours immediately before, during, and for 12-hours after each commercial salmon fishing period;

(B) after July 15, salmon may not be taken for subsistence for 12-hours immediately before, during, and for 12-hours after each commercial salmon fishing period;

(2) in Subdistrict 4-A after the opening of the commercial salmon fishing season, salmon may not be taken for subsistence for 12-hours immediately before, during, and for 12-hours after each commercial salmon fishing period.

(f) Notwithstanding (e) of this section, in Subdistrict 4-A, king salmon may be taken during the commercial fishing season, with drift gillnet gear only, from 6:00 p.m. Sunday until 6:00 p.m. Tuesday and from 6:00 p.m. Wednesday until 6:00 p.m. Friday.

(g) The commissioner may establish, by emergency order, additional subsistence salmon fishing periods in Subdistricts 4-B and 4-C and Districts 5 and 6 to compensate for any lost fishing opportunities due to reductions in commercial salmon fishing time.

(h) Except as provided in 5 AAC 01.225, and except as may be provided by the terms of a subsistence fishing permit, there is no closed season on fish other than salmon.

FP05-03 Executive Summary	
General Description	Limit gillnets with greater than 6-inch mesh to 35-mesh maximum depth. (Originator: Eastern Interior Regional Council)
Proposed Regulation	**Yukon-Northern Area - Salmon** *§___.27(i)(3)(xiii) You may take salmon only by gillnet, beach seine, fish wheel, or rod and reel, subject to the restrictions set forth in this section.* ***In the Yukon River drainage all gillnets with greater than 6-inch mesh, may not be more than 35 meshes in depth. This applies to both subsistence and commercial fishing gillnets.***
Region 5 - Yukon-Kuskokwim Delta Regional Council Recommendation	**Oppose.**
Region 6 - Western Interior Regional Council Recommendation	**Oppose.**
Region 9 - Eastern Interior Regional Council Recommendation	**Support.**
Interagency Staff Committee Recommendation	**Oppose**.
ADF&G Comments	The Federal Subsistence Board meeting book is being published prior to development of final recommendations and comments by the Alaska Department of Fish and Game. This information will be available on the Department's website by January 4, 2005. See the ADF&G homepage, under the headings of "highlights" and "regulations", at http://www.adfg.state.ak.us. For those without computer access, please call 1-907- 267-2360 for further information.
Written Public Comments	**2 Oppose.**

REGIONAL ADVISORY COUNCIL RECOMMENDATIONS

YUKON-KUSKOKWIM DELTA REGIONAL COUNCIL

Oppose. Per public testimony, large fish are caught in the shallow waters in the Yukon River with a 6-inch mesh gillnets. This kind of proposal inconveniences subsistence fishers and causes over harvest of salmon when subsistence fishers need to harvest only a few number of fish for food.

WESTERN INTERIOR REGIONAL COUNCIL

Oppose. The Regional Council needs to see all of the historical information and biological data and the data from the archival tags. Has there been a change in fish size and/or age composition of Yukon salmon over time? Without a thorough evaluation of these data, we would be guessing. Fish move up and down in the water column as they swim up the Yukon River. The Regional Council understands that the Office of Subsistence Management is currently evaluating historic fish size and age composition data for Yukon River Chinook and that a report on this evaluation is expected to be complete this winter. The Regional Council looks forward to seeing this report.

EASTERN INTERIOR REGIONAL COUNCIL

Support. There are concerns about a decline in the quality of Yukon River Chinook salmon escapements, and the loss of the large seven and eight year old Chinook salmon. Eastern Interior elders have told members of the Regional Council that there are not as many large fish in the population as there were historically. The Regional Council has concerns that there have been long-term negative impacts on the genetics of Yukon River Chinook salmon as a result of the long-term use of large-mesh gillnets. In addition to being susceptible to large mesh gillnets, the large, old female Chinook salmon is very susceptible to Ichthyophonus infection. This proposal would spread fishing time out and help to increase the positive affects of the windowed subsistence fishing schedule. Something has to be done now before it is too late; this is a first step.

INTERAGENCY STAFF COMMITTEE RECOMMENDATION

Oppose the proposal, consistent with the recommendations of the Yukon- Kuskokwim Delta and Western Interior Regional Advisory Councils, but contrary to the recommendation of the Eastern Interior Regional Advisory Council.

Justification

The Eastern Interior Regional Advisory Council's recommendation to support the proposal should be rejected on the basis of the criteria described in ANILCA Title VIII Section 805(c). By imposing a river-wide gillnet depth restriction on Federally qualified subsistence users, the proposed regulation would be more restrictive than the existing State regulations, and thus have greater and more detrimental effects on these users. Such an action would be inconsistent with the Federal priority provided for in ANILCA Title VIII.

Local knowledge regarding the effects on Chinook salmon populations of deeper gillnets fished near or on the river bottom, and changes over time in the size of Chinook harvested by subsistence users, does provide qualitative evidence to suggest that gillnet depth may have an effect on age and length characteristics for this Yukon River salmon species. Further analysis of long term age-sex-length (ASL) data sets should be completed to provide quantitative support for this hypothesis. However, joint action should be undertaken simultaneously by both the State and Federal management programs, to ensure that such restrictions have the desired effect of reducing harvest on larger, older age Chinook in a manner that does not differentially affect Federally qualified subsistence users.

In addition to changes in gillnet depth, other measures may need to be considered for increasing the size and age of returning Chinook salmon. We therefore support the initiative by the Alaska Department of Fish and Game to work cooperatively with State and Federal resource agencies, and subsistence users, to develop effective management tools that will improve the ASL characteristics of these important salmon stocks.

COMMENTS

ADF&G

The Federal Subsistence Board meeting book is being published prior to development of final recommendations and comments by the Alaska Department of Fish and Game. This information will be available on the Department's website by January 4, 2005. See the ADF&G homepage, under the headings of "highlights" and "regulations", at http://www.adfg.state.ak.us. For those without computer access, please call 1-907- 267-2360 for further information.

PUBLIC

Oppose. A large majority of the large Yukon king salmon swim well below the current 45 mesh deep nets. The lower Yukon River has a very deep channel and with the changing environment the kings are staying in the cool waters of the deep channels. He recommended paying attention to what is happening in the shallow waters further up the Yukon River.

Mike Moses, Mountain Village

Oppose.

Yukon River Darainage Fisheries Association

STAFF ANALYSIS
FP05-03

ISSUES

Proposal FP05-03, submitted by the Eastern Interior Regional Advisory Council (Council), requests that, in the Yukon River drainage, all gillnets with greater than 6-inch mesh, may not be more than 35 meshes in depth. The Council believes that deeper gillnets target larger female Chinook salmon. They are concerned that this practice of using deeper gillnets, along with a disproportionately higher rate of *Ichthyophonus* infection in larger Chinook salmon, creates a conservation concern on the spawning grounds. The Council also stated that, with lower salmon returns, subsistence users are not being allowed a reasonable opportunity to meet their subsistence needs (OSM Eastern Interior Regional Advisory Council Transcripts 2004).

The Council also requests that the proposed regulation apply to both subsistence and commercial fishing gillnets. The Federal Subsistence Management Program does not have authority to directly regulate commercial fishing along the Yukon River, except that a provision exists for the Federal Subsistence Board (Board) to close Federal public lands and waters to the non-subsistence taking of fish and wildlife under Subpart B regulations [Section 10 (4)(vi), 50 CFR Part 100]. However, the Board may restrict such uses only when it is deemed necessary to assure a viable population of fish or wildlife, to enable continued subsistence uses of a particular fish or wildlife population, or if there is an issue of public safety or administration [ANILCA, Section 815 (3)]. Therefore, this analysis will only address the proposed regulation for subsistence fishing gillnets operating in waters under Federal jurisdiction.

DISCUSSION

Existing Federal Regulation

§___.27(i)(3)(xiii) You may take salmon only by gillnet, beach seine, fish wheel, or rod and reel, subject to restrictions set forth in this section.

Proposed Federal Regulation

§___.27(i)(3)(xiii) You may take salmon only by gillnet, beach seine, fish wheel, or rod and reel, subject to restrictions set forth in this section. ***In the Yukon River drainage, all gillnets with greater than 6-inch mesh, may not be more than 35 meshes in depth. This applies to both subsistence and commercial fishing gillnets.***

Relevant State Regulation

There are no restrictions on the depth of a gillnet in the Yukon River State subsistence salmon fisheries, however, during times when the Commissioner of the Alaska Department of Fish and Game determines it to be necessary for the conservation of Chinook salmon, the Commissioner may implement by Emergency Order limitations on gillnet depth [5 AAC 01.220 (1) (B)]. Many subsistence fishers use the same gear for subsistence fishing and commercial fishing. Following are pertinent commercial fishing gear regulations:

5 AAC.05 331. Gillnet specifications and operations. (f) Gillnets with greater than six-inch mesh may not be more than 60 meshes in depth. Gillnets with six-inch or smaller mesh may not be more than 70 meshes in depth. Beginning January 1, 1996, this subsection only applies in Districts 4-6.

(g) Beginning January 1, 1996, in the Districts 1-3, (1) gillnets with greater than six-inch mesh may not be more than 45 meshes in depth; (2) gillnets with six-inches or smaller mesh may not be more than 50 meshes in depth

Extent of Federal Public Waters

The area addressed by this proposal includes all Federal public waters of the Yukon River (**Map 1**). Federal public waters of the Yukon River watershed include all navigable and non-navigable waters, located within and adjacent to the exterior boundaries of the Innoko, Kanuti, Koyukuk, Nowitna, Tetlin, Yukon Flats, Yukon Delta National Wildlife Refuges (NWR); the Arctic NWR; the Denali Preserve; the 1980 additions to the Denali Park; the gates of the Arctic National Park and Preserve; the Wrangell–St. Elias National Park and Preserve; Yukon-Charley Rivers National Preserve; the Steese National Conservation Area; the White Mountain National Recreation Area, and Preserve, and those segments of the Wild and Scenic River system, of the Yukon River drainage, located outside the boundaries of these Federal Conservation System Units (i.e., portions of Beaver and Birch Creeks and the Delta, and the Fortymile Rivers).

Note: For purposes of this discussion, the phrase "Federal public waters" is defined as those waters described under 50 CFR 100.3(b).

Customary and Traditional Use Determinations

Customary and traditional use determinations for Yukon River drainage salmon are:

Salmon, other than fall chum salmon – Yukon River residents of the Yukon River drainage, including the community of Stebbins.

Fall chum salmon – Residents of the Yukon River drainage, including the communities of Stebbins, Scammon Bay, Hooper Bay, and Chevak.

Background

State of Alaska Regulatory History

In January 2001, the Alaska Board of Fisheries considered proposal #272, which requested the elimination of gillnets greater than six-inch mesh in the commercial and subsistence Yukon River salmon fisheries. They rejected this proposal because of potential impacts to summer chum stocks (ADF&G 2001). In January 2004, the Alaska Board of Fisheries addressed proposal #136, which requested an increased allowable gillnet gear depth in the nearby Kuskokwim River. They rejected this proposal because it would make subsistence fishers more efficient and lead to an increase in the harvest of Chinook salmon. They also considered proposal #161, which requested the use of drift gillnets in Yukon River Subdistricts 4-B and 4-C. They considered a possible amendment to this proposal that restricted the mesh size to 7-inches to reduce potential impacts

to female salmon with the thought that it may improve the size and age class of escaping salmon. The Alaska Board of Fisheries rejected this proposal and recommended that additional gillnet selectivity studies be performed. (ADF&G 2001)

Federal Regulatory History

During the current 2005 Federal regulatory year, the Western Interior Regional Advisory Council submitted proposal FP05-04, part of which requests that in Subdisticts 4-B and 4-C, and District 5, residents may subsistence fish for salmon with drift gillnets that are no more than 35 meshes deep and less than 150 feet in length. That proposal is currently being analyzed in a separate staff analysis during the 2005 Federal regulatory cycle.

Current Events

Many fishers on the Yukon River use the same gillnets for both subsistence and commercial fishing, if commercial fishing is available in their area. Based on a survey of gillnets sold by processors to fishers in 2000, a majority of the mesh used by lower river fishers is greater than 8-inch measure (ADF&G 2001). Although subsistence fishers may use any depth of gillnet, it is likely they would use gillnets of those depths required by commercial fisheries regulations. In the State commercial salmon fishery regulations, reduced gillnet depth went into effect for the Yukon River in 1996.

Gillnets are highly selective for catching fish, with larger mesh sizes more effective for larger Chinook and smaller mesh more effective for smaller Chinook and other species (Kissner 1976). Mesh size regulations can significantly alter the sex ratio and age class composition of Chinook salmon stocks (ADF&G 1981). In the Yukon River, six-year-old Chinook salmon of both sexes predominate in the spawning run. Males dominate the younger age classes (ages 4 and 5), however, females dominate the older age classes (ages 7 and 8) (Healy 1998).

Local knowledge supports the contention that the larger, older female Chinook salmon have a tendency to run deeper in the river, however, Western science has not directly investigated this question. There is little disagreement that deeper nets catch more Chinook salmon, usually in the bottom half of the net, but there is no direct scientific evidence that female Chinook salmon are disproportionately harvested over males.

Past analysis of commercial salmon catch data has shown that reducing the allowable mesh size to 6-inch measure or less has reduced the harvest of larger female Chinook salmon. In the Yukon River, the sex ratio of Chinook salmon sampled with 5-1/2 inch gear vs. 8-1/2 inch gear averaged 310 males/100 females and 150 males/100 females respectively (ADF&G 1981). All other factors being equal, deeper nets fish deeper in the water column and catch more fish, since the net surface area covers more of the water column and Chinook salmon can be more concentrated nearer the river bottom.

The low numbers of larger, older age class of female Chinook salmon is a concern of many users along the Yukon River (Klein 2004-A). Many subsistence users along the Yukon River believe that the larger, older age-class Chinook salmon, usually females, are decreasing in number. Some escapement enumeration projects in the drainage have found a sex ratio imbalance with a low percentage of female Chinook salmon (Andersen 2004, pers. com.). In February 1998 the U.S./

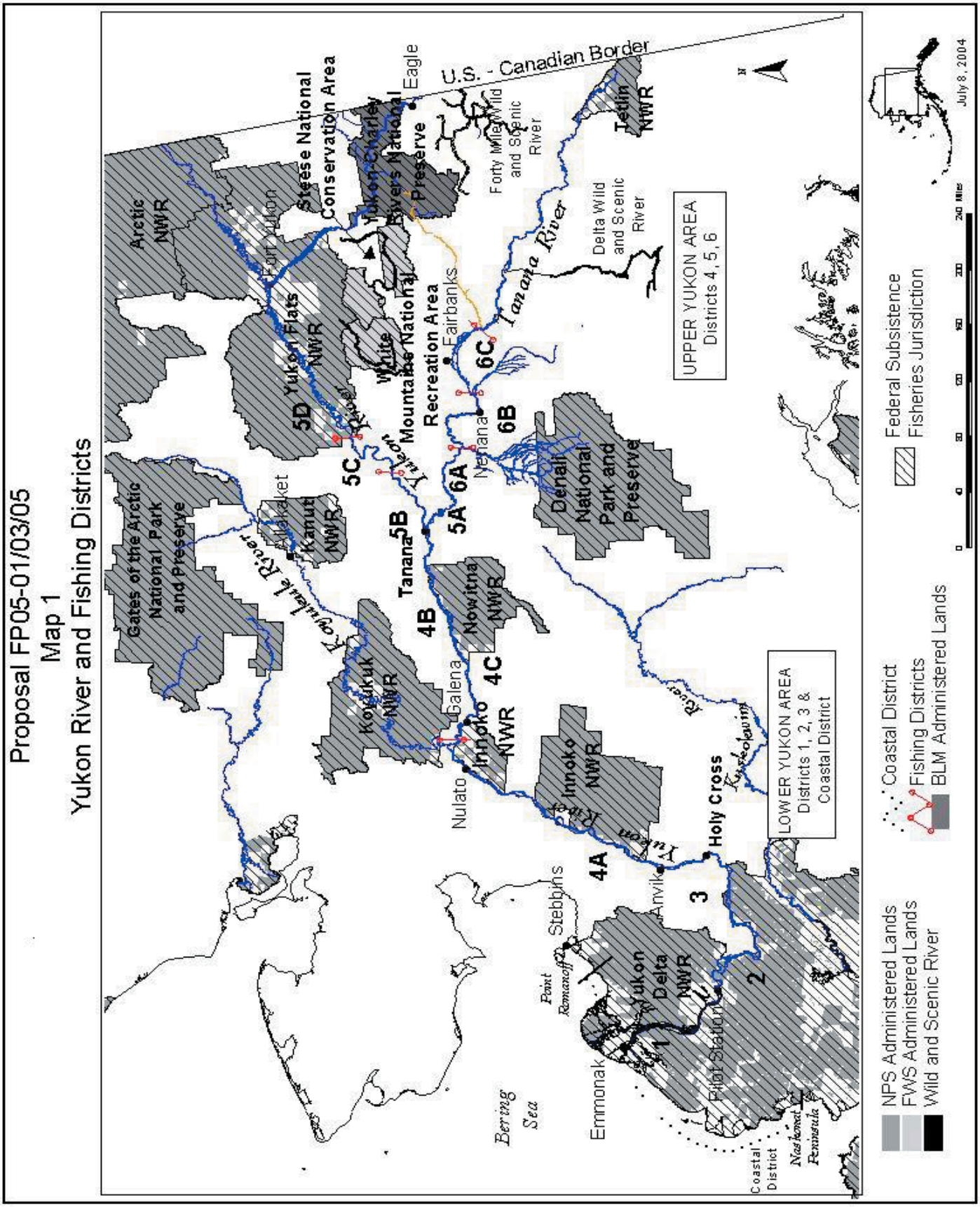
Canada Joint Technical Committee reviewed the availability of age-sex-length information for Yukon River Chinook salmon seeking to address whether a decrease in size had occurred. Their analysis concluded that the data did not indicate any sustained substantial change in fish size for Yukon River Chinook salmon. This committee noted that detection of changes due to genetic factors would likely require the analysis of many decades of age-sex-length information and exceed the available data. In response to the concern of low numbers of large female Chinook on the spawning grounds and unbalanced sex ratios, the Office of Subsistence Management, Fisheries Information Services branch, is currently conducting an age/sex/length analysis of Yukon River Chinook salmon. This analysis is examining spawning escapement data trends over time in age and sex composition and mean length at age, focusing on age group statistics within tributaries and between tributaries. Draft results are anticipated in late fall, 2004.

Many subsistence users along the Yukon River believe that the larger, older age-class Chinook salmon numbers are decreasing due to Ichthyophonus, a parasitic disease. From 1999 to 2003 the infection rate was significantly higher in females than males in the mainstem Yukon River (Kocan and Hershberger 2001). The Yukon River Drainage Fishers's Association (YRDFA) is also concerned about allowing sufficient numbers of larger female Chinook salmon to reach the spawning grounds. In 2004 YRDFA started a comprehensive study and information/education campaign working with fishers and other user groups to begin a dialogue on the impacts of fishing gear on the size of salmon. Their intent is to focus on a river-wide approach to review data on fish size to see if there is biological data to match the anecdotal data that fish size is changing. As well, a gear survey is being conducted to learn about the size and depth of gear that is currently utilized by fishers on the river in the various districts. Once information is gathered, secondary pieces of the study will look at reasons as to why fish size may change, and potential ways to improve the number of larger female fish making it to the spawning grounds (Klein 2004b).

Biological Background

In the fall of 2000, the Alaska Board of Fisheries identified Yukon River Chinook, summer chum, and fall chum salmon as stocks of concern. State and Federal agencies are currently managing salmon by the guidelines drawn up by the Alaska Board of Fisheries and the U.S. Canada Treaty and agreed upon by the Board in the Interim Memorandum of Agreement (MOA) signed by the State and Federal agencies. Three current guidelines, plans or regulations provide the details of the management strategies. They are the Yukon River King Salmon Management Plan, the Yukon River Summer Chum Salmon Management Plan, and the Yukon River Fall Chum Salmon Management Plan. As well as having these plans, the Alaska Board of Fisheries also instituted a schedule in coordination with local advisory committees and Councils to provide windows of fishing opportunity in an effort to conserve the declining salmon runs by reducing fishing pressure on them (ADF&G and USFWS 2003). The intent of the schedule is to reduce harvest impacts on any particular component of the run and spread subsistence fishing opportunity among users during years of low salmon returns. The agencies wish to improve escapement numbers while providing subsistence fishing opportunities throughout the Yukon drainage. The subsistence schedule was made part of the Yukon River King Salmon Management Plan in 2001.

Management of Yukon River Chinook salmon is based on test gillnet and fish wheel fish indices,


Proposal FP05-01/03/05
Map 1
Yukon River and Fishing Districts
Arctic NWR
Steese National Conservation Area
Eagle
U.S. - Canadian Border
Yukon-Charley Rivers National Preserve
Forty Mile Wild and Scenic River
Tetlin NWR
Delta Wild and Scenic River
Tanana River
Fairbanks
White Mountains National Recreation Area
Fort Yukon
Yukon Flats NWR
5D
5C
5B
5A
6A
6B
6C
Nenana
Denali National Park and Preserve
UPPER YUKON AREA
Districts 4, 5, 6
Gates of the Arctic National Park and Preserve
Allakaket
Kanuti NWR
Tanana
Nowitna NWR
4B
4C
Koyukuk NWR
Galena
Innoko NWR
Nulato
Innoko NWR
Holy Cross
LOWER YUKON AREA
Districts 1, 2, 3 & Coastal District
4A
Anvik
3
Stebbins
Point Romanoff
Yukon Delta NWR
1
2
Pilot Station
Emmonak
Bering Sea
Coastal District
Nashoonak Peninsula
Federal Subsistence Fisheries Jurisdiction
Coastal District
Fishing Districts
BLM Administered Lands
NPS Administered Lands
FWS Administered Lands
Wild and Scenic River
July 8, 2004

subsistence harvest reports, as well as tower and weir projects. Management of summer chum and fall chum salmon is outlined in their respective management plans and is based on run size thresholds which also guide the levels of subsistence and/or commercial salmon fishing depending on the various run size projections. The run size projections are based on many factors including, previous years' run strength and age class composition, test gillnet and fish wheel indices, subsistence harvest reports, sonar passage estimates, various weir projects, and mark-recapture projects providing abundance estimates located strategically throughout the drainage.

Chinook Salmon Stock Status

The first half of the Chinook salmon run is primarily composed of Canadian-bound fish (Holder and Senecal-Albrecht 1998). Middle Yukon River Chinook stocks are also important contributors to the first half of the run. Lower and middle river Chinook salmon stocks are thought to contribute mostly to the second half of the run. Early run, Canadian-bound Chinook salmon are the first salmon available each spring when drying conditions are often the best. As a result, these Canadian stocks support the largest share of the Chinook salmon subsistence fishery and a large portion of the commercial fishery as they migrate through the Yukon River.

A Yukon River Chinook Salmon radio telemetry project has been conducted each year since 2002. During this basin-wide study, 1,097 fish in 2003 were tagged. Upper Yukon River salmon were a major component of the return. Most of these fish traveled into Canada, although salmon were tracked into U.S. tributaries; a large number of fish returned to the Chandalar and Sheenjek Rivers. Tanana River salmon were a major component of the run with most fish traveling to spawning areas in the Chena, Salcha, and Goodpaster Rivers. About 10% of the radio-tagged fish were tracked to tributary streams in the lower and middle basin: the Bonasila, Anvik, Innoko, Nulato, Koyukuk, Melozitna, Nowitna, and Tozitna Rivers. These fish were most abundant later in the run. The radio-archival tags used in this study showed that swimming depth varied continually as the salmon moved upriver, fish periodically swimming at depths of more than 70 feet. (YRDFA 2004).

The Canadian border passage numbers were low from 1998 to 2000 as shown in **Figure 1** but have improved over the past three years. In 2003 the total spawning escapement for the Canadian portion of the Upper Yukon River drainage was 49,781 Chinook salmon, well above the escapement objective for the Canadian portion of the river (ADF&G 2003). Commercial fishing was drastically reduced during years of lower returns for all Yukon River Chinook salmon in response to these lower returns. The commercial fishing closures in Alaska in 2001 and the conservative strategy used in 2002 and 2003 to delay commercial harvests until the mid-point of the Chinook salmon run were important and responsive management actions implemented by the in-season managers.

Chinook salmon commercial and subsistence harvest data for the Alaska portion of the Yukon River is found in **Table 1**.

Effects of the Proposal

Adoption of this proposal would create a divergence between State and Federal regulations, making the Federal subsistence fishing regulations more restrictive than the State's subsistence

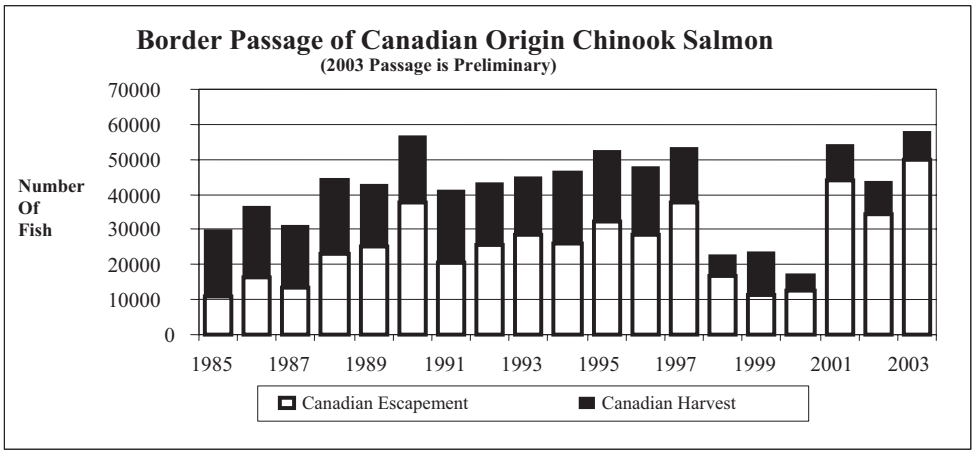


Figure 1. Yukon River Canadian-origin Chinook salmon border passage 1985-2003 (ADF&G and USFWS 2004).

Table 1. Alaska catch of Yukon River Chinook salmon, 1985-2003. (Select data from 2002 United States and Canada Yukon River Joint Technical Committee Report and Brase and Hamner, 2003).

Year	Subsistence[1]	Commercial[2]	Sport[3]	Total
1985	39,771	146,188	1,368	187,327
1986	45,238	99,970	796	146,004
1987	53,124	134,760	502	188,386
1988	46,032	101,445	944	148,421
1989	51,062	105,491	1,053	157,606
1990	51,181	97,708	544	149,433
1991	46,773	107,105	773	154,651
1992	45,626	122,134	431	168,191
1993	65,701	95,682	1,695	163,078
1994	54,563	115,471	2,281	172,315
1995	48,934	126,204	2,525	177,663
1996	43,521	91,890	3,151	138,562
1997	56,291	116,421	1,913	174,625
1998	54,090	44,625	654	99,369
1999	52,525	70,767	1,023	124,315
2000	35,916	9,115	277	45,308
2001	53,059	0	571	53,738
2002	42,746	24,880	*	*
2003	57,140	40,437		

[1]Includes salmon harvested for subsistence and personal use.
[2]Includes ADF&G test fish sales, fish sold in the round, and estimated number of females commercially harvested for production of salmon roe.
[3]Sport fish harvest for the Alaskan portion of the Yukon drainage.
*Data are unavailable at this time.

regulations. Such an action would be inconsistent with the Federal subsistence priority provided under Title VIII of ANILCA. Management and enforcement of such a fishery would likely be problematic and require extensive outreach and education efforts.

This proposal could increase the amount of subsistence fishing effort needed to harvest any surpluses of Chinook salmon, since people would have to fish longer with shallower, less efficient gear to meet their subsistence needs. Having a uniform gillnet size may result in different harvest efficiency among fishing districts, since the average depth of the river channel varies between districts. The proposed regulation would pose a hardship on some Yukon River subsistence salmon fishers, since users may have to cut existing gillnets to 35 meshes deep. Fishers could possibly roll up the lead line to 35 meshes and preclude having to cut existing gear. Shallower gillnets are less efficient and also once a net has been cut down in size, it becomes more susceptible to tearing on snags (Rearden 2004). If these fishers were required to reduce the commercial gear to the same depth as the subsistence gear they would be less efficient.

Local knowledge supports the contention that the larger, predominantly female Chinook salmon likely occur more often at greater depths. Adoption of this proposal could provide a proactive measure towards the conservation and allocation of Yukon River Chinook salmon runs and possibly increase productivity. This measure would result in shallower nets fishing less efficiently, likely with a prolonged harvest period. Subsistence harvest of Yukon River Chinook salmon, which is mostly concentrated in the first half of the fish run, would be spread out over more segments of the run, potentially benefiting the quality and quantity of escapement.

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FP05-04 Executive Summary	
General Description	Expand the use of drift gillnets in the Yukon River Subdistricts to include 4-B and 4-C, and District 5. (Originator: Western Interior Regional Council)
Proposed Regulation	**Yukon-Northern Area - Salmon** *§___.27(i)(3)(xv) In Districts 4, 5, and 6, you may not take salmon for subsistence purposes by drift gillnets, except as follows:* *(A) In Subdistrict 4-A upstream from the mouth of Stink Creek, you may take king salmon by drift gillnets less than 150 feet in length from June 10 through July 14, and chum salmon by drift gillnets after August 2;* *(B) In Subdistrict 4-A downstream from the mouth of Stink Creek, you may take king salmon by drift gillnets less than 150 feet in length from June 10 through July 14.* ***(C) In the Yukon River main stem, Subdistricts 4-B, 4-C, and District 5, you may use drift gillnet for subsistence harvest of salmon with nets 150 feet long, 35 mesh deep. Fishing with drift gillnet is limited to two 36-hour periods at the end of the windowed openings and fishing periods stated in regulation for Subdistricts 4-B, 4-C, and District 5.***
Region 5 - Yukon-Kuskokwim Delta Regional Council Recommendation	**Oppose.**
Region 6 - Western Interior Regional Council Recommendation	**Support with modification.** Modify to apply only to Subdistricts 4-B and 4-C, to allow drift gillnets to harvest Chinook salmon from June 10-July 14, and chum salmon after August 2. Also reduce the time drift gillnets are allowed to the final 18-hours of each windowed opening (instead of 36-hours).
Region 7 - Seward Peninsula Regional Council Recommendation	**Defer to home region.**
Region 9 - Eastern Interior Regional Council Recommendation	**Oppose.**

FP05-04 Executive Summary	
Interagency Staff Committee Recommendation	The Interagency Staff Committee did not reach consensus. There are three evenly supported recommendations. **Option A: Support with modification**, consistent with the Western Interior Regional Advisory Council, with the additional modification to not allow the use of drift gillnets to harvest chum salmon in Subdistricts 4-B and 4-C after August 2. The modified proposed regulations would read: *§___.27 (i) (3) (xv) In Districts 4, 5, and 6, you may not take salmon for subsistence purposes by drift gillnets, except as follows:* *(A) In Subdistrict 4-A upstream from the mouth of Stink Creek, you may take king salmon by drift gillnets less than 150 feet in length from June 10 through July 14, and chum salmon by drift gillnets after August 2;* *(B) In Subdistrict 4-A downstream from the mouth of Stink Creek, you may take king salmon by drift gillnets less than 150 feet in length from June 10 through July 14.* ***(C) In the Yukon River mainstem, Subdistricts 4-B and 4-C, you may use drift gillnets for subsistence harvest of king salmon with nets 150 feet long and 35 meshes deep from June 10 through July 14. Fishing with drift gillnet is limited to two 18-hour periods at the end of the windowed openings and fishing periods stated in regulation for Subdistricts 4-B and 4-C.*** **Option B: Oppose.** **Option C: Defer** the proposal
ADF&G Comments	The Federal Subsistence Board meeting book is being published prior to development of final recommendations and comments by the Alaska Department of Fish and Game. This information will be available on the Department's website by January 4, 2005. See the ADF&G homepage, under the headings of "highlights" and "regulations", at http://www.adfg.state.ak.us. For those without computer access, please call 1-907- 267-2360 for further information.
Written Public Comments	**2 Oppose.**

REGIONAL ADVISORY COUNCIL RECOMMENDATIONS

YUKON-KUSKOKWIM DELTA REGIONAL ADVISORY COUNCIL RECOMMENDATION

Oppose. Lower Yukon River subsistence fishers would sacrifice more fish and subsistence fishing time if this proposal were adopted. Another fishery in the upper Yukon would be established and subsistence fishing would have to be reduced in the lower Yukon. There are few fishers in the proposed fishery area, in the lower Yukon River, if adopted this proposal would have effect on much more fishers. For these reasons, the Lower Yukon Fish and Game Advisory Committee opposed this proposal during its teleconference meeting. The Yukon River Drainage Fisheries Association Board also opposed this proposal for the same reasons as the Lower Yukon State Advisory Committee. The actual mileage of the proposed area appears greater than the 18 miles mentioned when the Yukon-Kuskokwim Delta Council met; the actual mileage for the proposed fishery is approximately 80-90 miles. A similar proposal was submitted to the Federal Subsistence Board in 2003 that would have expanded the drift gillnet fishery. The use of this resource for dog food is not an acceptable justification of need.

WESTERN INTERIOR REGIONAL COUNCIL RECOMMENDATION

Support with modification. The modifications are: Limit the affected area to Subdistricts 4-B and 4-C, limit the size of drift gillnets to no more than 150 feet long and no more than 35 meshes deep, limit the Chinook salmon harvest opportunity to June 10 – July 14, limit the chum salmon harvest opportunity to after August 2, and reduce the drift gillnet fishing opportunity to the final 18-hours of each windowed opening (instead of 36-hours).

Proposed modifications in Federal Regulation language:
Yukon-Northern Area – Salmon

§___.27(i)(3)(xv) In Districts 4, 5, and 6, you may not take salmon for subsistence purposes by drift gillnets, except as follows:

(A) In Subdistrict 4-A upstream from the mouth of Stink Creek, you may take king salmon by drift gillnets less than 150 feet in length from June 10 through July 14, and chum salmon by drift gillnets after August 2;

(B) In Subdistrict 4-A downstream from the mouth of Stink Creek, you may take king salmon by drift gillnets less than 150 feet in length from June 10 through July 14.

(C) In the Yukon River mainstem, Subdistricts 4-B and 4-C, you may take king salmon by drift gillnets no more than 150 feet long and no more than 35 meshes deep, from June 10 through July 14, and chum salmon by drift gillnets with the same size limitations after August 2. Fishing with drift gillnets is limited to two, 18-hour periods at the end of the windowed openings and fishing periods stated in regulation for Subdistricts 4-B and 4-C.

The Western Interior Regional Council included District 5 in the original proposal in an effort to be fair to all upper Yukon subsistence fishers. Given that the Eastern Interior Regional Council did not support FP05-04 at their meeting in Eagle, the Regional Council amended their recommendation to only support a limited drift gillnet fishery in Subdistricts 4-B and 4-C within the Western Interior Regional Council's area of responsibility. The Regional Council is further limiting the recommended Subdistrict 4-B and 4-C subsistence drift fishing opportunity to half of the amount of drift gillnetting fishing time that has been allowed in the windowed subsistence fishing schedule in Yukon Districts 1, 2 and 3. This is a fairness issue. The recommended fishery in Subdistricts 4-B and 4-C would also limit gear to nets which are no more than 150 feet long and no more than 35 meshes deep.

The proposal, as amended, would help to reduce the severe overcrowding and gear conflicts that now occur in the subsistence fishery in upper Subdistrict 4-A. Due to the current regulatory restrictions, some subsistence fishers spend over $100 for gas and are only are able to catch one salmon. The proposal, as amended by the Regional Council, would help subsistence fishers meet their subsistence needs and to feed their families. The proposal as amended by the Regional Council would limit the drift gillnet fishery to Federal public waters of Subdistricts 4-B and 4-C. Set nets and fish wheels in Subdistricts 4-B and 4-C would have the first chance to fish in each windowed subsistence fishing opening; this would address concerns about possible gear conflicts. This proposal as amended would reduce the costs of subsistence fishing in Subdistricts 4-B and 4-C and would not be expected to result in a significant increase in the subsistence salmon harvest; the staff analysis addresses this issue.

Based on our knowledge of these subdistricts and the subsistence fishers that would participate here, the Western Interior Regional Council feels very strongly that the proposal as amended by this Regional Council would not detrimentally affect upriver subsistence fisheries or the health of salmon stocks above Subdistricts 4-B and 4-C. Limiting the use of this gear type to only 18-hours within each open window period would address any conservation concerns associated with this proposal. These changes have been made by this Regional Council to address the specific concerns that the Federal Subsistence Board has expressed in the past.

SEWARD PENINSULA REGIONAL COUNCIL RECOMMENDATION

Defer. Council chose to take no action on this proposal and deferred to the home region.

EASTERN INTERIOR REGIONAL COUNCIL RECOMMENDATION

Oppose. Compared to fish wheels, drift gillnets can be very effective for catching salmon. There is concern that the salmon resource could not handle the expansion of this gear type. This does nothing to assure quality of escapement. This proposal could have a significant biological and sociological impact on the Yukon River. State and Federal In-Season Managers do not feel that this proposal would be beneficial to the Yukon River salmon resource. This is a wrong direction when rebuilding stocks of Yukon management concerns.

INTERAGENCY STAFF COMMITTEE RECOMMENDATION

The Interagency Staff Committee did not reach consensus. There are three evenly supported recommendations.

Option A

Support with modification, consistent with the Western Interior Regional Advisory Council, with the additional modification to not allow the use of drift gillnets to harvest chum salmon in Subdistricts 4-B and 4-C after August 2.

The modified proposed regulations would read:

§___.27 (i) (3) (xv) In Districts 4, 5, and 6, you may not take salmon for subsistence purposes by drift gillnets, except as follows:

(A) In Subdistrict 4-A upstream from the mouth of Stink Creek, you may take king salmon by drift gillnets less than 150 feet in length from June 10 through July 14, and chum salmon by drift gillnets after August 2;

(B) In Subdistrict 4-A downstream from the mouth of Stink Creek, you may take king salmon by drift gillnets less than 150 feet in length from June 10 through July 14.

(C) In the Yukon River mainstem, Subdistricts 4-B and 4-C, you may use drift gillnets for subsistence harvest of king salmon with nets 150 feet long and 35 meshes deep from June 10 through July 14. Fishing with drift gillnet is limited to two 18-hour periods at the end of the windowed openings and fishing periods stated in regulation for Subdistricts 4-B and 4-C.

Justification

The Western Interior Regional Advisory Council's recommendation responds specifically to the input, concerns, and requests of the Federal Subsistence Board provided during its December 2003 meeting. The proposed regulation is more restrictive than any prior State or Federal regulatory proposal concerning drift gillnetting in the Yukon River.

Although Chinook salmon are listed as a stock of concern, there have been improvements in run strength for the past four years. However, a more cautious approach is warranted when considering the use of drift gillnets to harvest chum salmon. These fish have not rebounded in abundance as well as Chinook and expanding the use of drift gillnets to harvest chum after August 2 has more biological risks associated with it.

Drift gillnets were historically used by the Deg Hit'an and Koyukon Athabaskan people in the middle Yukon until this gear type was prohibited by the Alaska Board of Fisheries in 1977. The legislative background on the Congressional intent of ANILCA does describe how changes in technology and technique for subsistence uses of the resource may be allowed. Drift gillnetting has been permitted for decades in Yukon Districts 1, 2 and 3. Given the extensive use of this

gear type in the lower 500 miles of the Yukon River for both commercial and subsistence fisheries, the recommendation of the Western Interior Council is consistent with both the subsistence priority and conservation principles of fisheries management.

Allowing the limited use of drift gillnets would not significantly increase overall harvests of Chinook salmon. The proposed depth restriction for these nets is viewed as a conservation measure and is more restrictive than the depth of gear used in the lower Yukon commercial fishery. It is expected that the limited number of good snag-free sites for drifting gillnets in the middle Yukon River will also limit their use. The time restriction recommended by the Western Interior Regional Council is half of that allowed for drift gillnetting in Districts 1, 2 and 3 during the windowed subsistence fishing schedule. The seasonal dates of June 10 through July 14 for Chinook salmon would align with regulations in Subdistrict 4-A.

If adopted, this regulation would allow subsistence users in Subdistricts 4-B and 4-C to fish the same gear type that is allowed in the downstream areas, and may help alleviate some of the conflict between users. It would provide them with more flexibility and reduce crowding in the upper portion of Subdistrict 4-A. The drift gillnetting time limitation will also minimize conflicts between other gear types (set gillnets and fishwheels). It is expected that this change may enable residents of Galena and Ruby to conserve boat fuel and would provide for safer travel.

The Western Interior Council's recommended modifications to narrow the scope of the proposal have reduced administrative, communication, and enforcement concerns associated with the proposal. In-season and post season subsistence harvest monitoring programs would allow for an evaluation of any changes in harvest. There would be a need for an aggressive outreach and education effort to inform the public of the new regulation and where exactly the Federal public water boundaries are located in Subdistricts 4-B and 4-C. Council members have offered to help inform and educate the public in these communities. Maps could be distributed and markers could be placed along the river bank in higher use areas.

Option B:

Oppose the proposal, consistent with the recommendations of the Yukon-Kuskokwim Delta and Eastern Interior Regional Advisory Councils.

Justification

Another viewpoint of the Interagency Staff Committee is to oppose this proposal based on the following considerations: 1) Yukon River Chinook and chum salmon are identified as Stocks of Concern and are undergoing a period of run rebuilding. Instituting a new subsistence gear type that could target larger adult female Chinook salmon of transboundary origin would be inconsistent with and compromise current efforts to rebuild these runs. 2) Two of the three Yukon River Councils oppose this proposal. Additionally, the Federal Subsistence Board and the Alaska Board of Fisheries did not support similar proposals that were considered this past winter. 3) Yukon River subsistence fisheries management has largely been successful in recent years because managers have been working under the same basic management framework. Drift gillnetting windows within the weekly windowed subsistence fishing schedules (windows within windows) will be confusing and present significant challenges to monitor regulatory

compliance. Separate news releases and management actions would be required by the Federal in-season manager. This approach of separate management actions was used in 2000 and created considerable confusion for subsistence users. 4) Due to the complex nature of the Yukon River salmon fishery and high subsistence dependency by the many communities, it is recommended that adjustments to allowable subsistence gear types and fishing time be approached with recommendations supported by users up and down the river and are consistent with long-term stock conservation goals.

Option C:

Defer the proposal.

Justification

Another viewpoint represented in the Interagency Staff Committee was to defer the proposal, in view of the fact that the three Yukon River Councils were so sharply divided about this proposal. In addition, the Yukon-Kuskokwim Delta and Eastern Interior Regional Advisory Councils have not had an opportunity to give full consideration to the Western Interior Regional Advisory Council's recommended modifications. For these members, it would be best to provide for intensive consultation among the affected Councils during the next year, with the expectation that a unified, compromise position would be developed.

COMMENTS

ADF&G

The Federal Subsistence Board meeting book is being published prior to development of final recommendations and comments by the Alaska Department of Fish and Game. This information will be available on the Department's website by January 4, 2005. See the ADF&G homepage, under the headings of "highlights" and "regulations", at http://www.adfg.state.ak.us. For those without computer access, please call 1-907- 267-2360 for further information.

PUBLIC

Oppose. He feels that drifting the shallow channels of the upper Yukon River do not give the king salmon a fair chance to make it to the spawning grounds. He also thought about the dry fish and smoked strip market that enables someone to make more money than the commercial king salmon market on the lower Yukon Delta.

Mike Moses, Mountain Village

Oppose.

Yukon River Darainage Fisheries Association

STAFF ANALYSIS
FP05-04

ISSUES

Proposal FP05-04, submitted by the Western Interior Subsistence Regional Advisory Council, requests that drift gillnets be allowed in Subdistricts 4-B, 4-C and District 5 of the Yukon River. This gear would be restricted both in depth and length, not to exceed 35 meshes in depth and 150 feet in length. The use of drift gillnets would only be allowed during two-36-hour periods within the current subsistence fishing schedules or periods in Subdistricts 4-B, 4-C, and District 5.

The proponent recommended supporting the proposal with modification during the Regional Council's public meeting in Anvik on October 10, 2004. This analysis includes some additional information to help address these modifications. The recommended modifications to the proposal would limit the area for drift gillnets to only Subdistricts 4-B and 4-C, with seasonal dates of June 10 through July 14 to harvest Chinook salmon and after August 2 to harvest chum salmon. The recommended modifications would also reduce the time allowed to use drift gillnets by half, from two 36-hour periods to two 18-hour periods at the end of the windowed openings and fishing periods stated in regulation. The 35 mesh depth restriction would remain the same as proposed.

DISCUSSION

Current regulations allow the use of drift gillnets to harvest salmon for subsistence in the lower 500 miles of the Yukon River, from the mouth upstream through Subdistrict 4-A near the village of Koyukuk (**Map 1**). If adopted, the proposal would expand the use of drift gillnets for subsistence use on Federal public waters from the current upper boundary of Subdistrict 4-A to the Canadian border.

If the modifications recommended by the proponent were adopted, this would allow the use of drift gillnets for subsistence use in Subdistricts 4-B and 4-C, on Federal public waters within the northern unit of the Innoko NWR and the Nowitna NWR. This would primarily benefit the residents of Galena and Ruby, since they would have the easiest access to those areas. Residents of Tanana would also benefit if they choose to travel approximately 28 miles downstream to the upper boundary of Subdistricts 4-B and 4-C. Residents of Koyukuk would benefit from reduced competition from other fishermen coming downstream to fish in Subdistrict 4-A near their village.

The proponent states that many of the subsistence users in the middle and upper Yukon villages have not been attaining their subsistence needs for salmon. They also believe this would provide more equity of harvest methods for users in the middle and upper Yukon River areas.

Existing Federal Regulation

Yukon-Northern Area – Salmon

§___.27(i)(3)(xv) In Districts 4, 5, and 6, you may not take salmon for subsistence purposes by drift gillnets, except as follows:

(A) In Subdistrict 4-A upstream from the mouth of Stink Creek, you may take king salmon by drift gillnets less than 150 feet in length from June 10 through July 14, and chum salmon by drift gillnets after August 2;

(B) In Subdistrict 4-A downstream from the mouth of Stink Creek, you may take king salmon by drift gillnets less than 150 feet in length from June 10 through July 14.

Proposed Federal Regulation

Yukon-Northern Area – Salmon

§___.27(i)(3)(xv) In Districts 4, 5, and 6, you may not take salmon for subsistence purposes by drift gillnets, except as follows:

(A) In Subdistrict 4-A upstream from the mouth of Stink Creek, you may take king salmon by drift gillnets less than 150 feet in length from June 10 through July 14, and chum salmon by drift gillnets after August 2;

(B) In Subdistrict 4-A downstream from the mouth of Stink Creek, you may take king salmon by drift gillnets less than 150 feet in length from June 10 through July 14.

(C) In the Yukon River mainstem, Subdistricts 4-B, 4-C, and District 5, you may use drift gillnets for subsistence harvest of salmon with nets 150 feet long and 35 meshes deep. Fishing with drift gillnets is limited to two 36-hour periods at the end of the windowed openings and fishing periods stated in regulation for Subdistricts 4-B, 4-C, and District 5.

Relevant State Regulations

5 AAC 01.220. LAWFUL GEAR AND GEAR SPECIFICATIONS. (a) Salmon may be taken only by gillnet, beach seine, a hook and line attached to a rod or pole, handline, or fish wheel, subject to the restrictions set out in this section, 5 AAC 01.210, and 5 AAC 01.225 – 5 AAC 01.249…

(d) In District 4, commercial fishers may not take salmon for subsistence purposes during the commercial salmon fishing season by gillnets larger than six-inch mesh after a date specified by emergency order issued between July 10 and July 31.

(e) In Districts 4, 5, and 6, salmon may not be taken for subsistence purposes by drift gillnets, except as follows:

1) In Subdistrict 4-A upstream from the mouth of Stink Creek, king salmon may be taken by drift gillnets from June 10 through July 14,and chum salmon may be taken by drift gillnets after August 2;

2) In Subdistrict 4-A downstream from the mouth of Stink Creek, king salmon may be taken by drift gillnets from June 10 through July 14;

3) No person may operate a drift gillnet that is more than 150 feet in length during the seasons described in (1) and (2) of this section.

Extent of Federal Public Waters

The proposal would apply to Federal public waters of the Yukon River located within the external boundaries of the Yukon Flats National Wildlife Refuge, Yukon Charley Rivers National Preserve, and those portions of the Nowitna NWR and northern unit of the Innoko NWR that are within Subdistricts 4-B and 4-C (**Map 1**).

The modifications recommended by the proponent would apply only to Federal public waters of those portions of the Yukon River located within the external boundaries the Nowitna National Wildlife Refuge and the northern unit of the Innoko National Wildlife Refuge that are within Subdistricts 4-B and 4-C. This would include approximately 16 miles of river within the Innoko NWR and approximately 74 miles of river within the Nowitna NWR.

Note: For purposes of this discussion, the phrase "Federal public waters" is defined as those waters described under 50 CFR 100.3(b).

Customary and Traditional Use Determinations

§___.24 Customary and traditional use determinations.

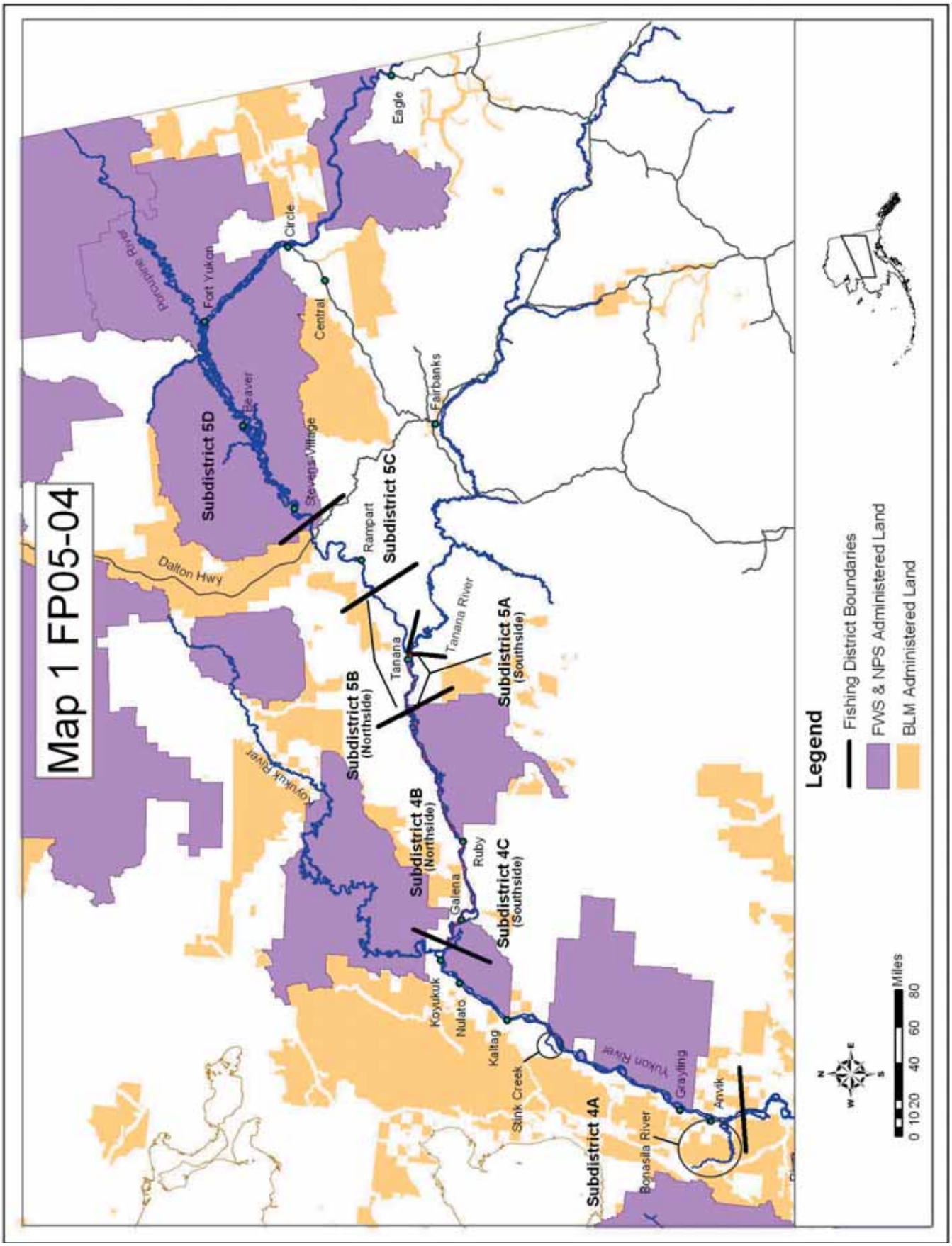
(2) Fish determinations.
Yukon-Northern Area: Yukon River drainage–salmon other than fall chum salmon—Residents of the Yukon River drainage, including the community of Stebbins.

Yukon-Northern Area: Yukon River drainage–Fall chum salmon—Residents of the Yukon River drainage, including the communities of Stebbins, Scammon Bay, Hooper Bay, and Chevak.

Background

State of Alaska Regulatory History

In November 1973, the Alaska Board of Fisheries prohibited the use of drift gillnets for commercial fishing in the Yukon River upstream of the confluence with the Bonasila River. The Bonasila River is near the current boundary line between Districts 3 and 4 (**Map 1**). This action was based on the assessment that drift gillnet use was historically low in the middle and upper Yukon River drainage and the need to prevent possible gear conflicts in the future (ADF&G 2001).


Map 1 FP05-04
Eagle
Circle
Fort Yukon
Porcupine River
Central
Fairbanks
Beaver
Stevens Village
Subdistrict 5D
Subdistrict 5C
Rampart
Dalton Hwy
Tanana
Tanana River
Subdistrict 5A
(Southside)
Subdistrict 5B
(Northside)
Koyukuk River
Subdistrict 4B
(Northside)
Ruby
Subdistrict 4C
(Southside)
Galena
Koyukuk
Nulato
Kaltag
Stink Creek
Yukon River
Grayling
Anvik
Bonasila River
Subdistrict 4A
Legend
Fishing District Boundaries
FWS & NPS Administered Land
BLM Administered Land
Miles
0 10 20 40 60 80

Subsistence users were allowed to continue using drift gillnets throughout the Yukon River drainage until the 1977 season. In December 1976, the Alaska Board of Fisheries prohibited the use of drift gillnets for subsistence fishing in the middle and upper Yukon Areas (Districts 4-6). The Alaska Board of Fisheries discussions at that time indicated that the possible increase in the use of drift gillnets could seriously impact both the conservation and allocation of middle and upper Yukon River salmon stocks, which were being harvested at maximum levels (ADF&G 2001).

In 1981, drift gillnets were again allowed for subsistence salmon fishing in Subdistrict 4-A upstream from Stink Creek (Map 1). Then in 1995, the remainder of Subdistrict 4-A, below Stink Creek, was reopened to the use of drift gillnets for subsistence fishing. Numerous proposals have been submitted to the Alaska Board of Fisheries over the years requesting that Subdistricts 4-B and 4-C be allowed to use drift gillnets, but all have been denied.

Proposals requesting to use drift gillnets for subsistence salmon fishing in Subdistricts 4-B and 4-C were submitted to the Alaska Board of Fisheries by residents of those areas in 1987, 1989/90, 1991/92, 1993/94, 1997, 2001, and 2004. In 1994, the Alaska Board of Fisheries questioned the need for drift gillnets to provide for adequate subsistence opportunity. State staff comments suggested that at that time it did not appear necessary (ADF&G 2001). The Alaska Board of Fisheries stated that the Alaska Department of Fish and Game (ADF&G) could allow increased time for subsistence fishing with other gear types by Emergency Order, as an alternative, if subsistence needs were not being met. In January 2001 and 2004, the Alaska Board of Fisheries again denied similar requests based on concerns of increased harvests and considered the proposals to be a new and expanding fishery that could target a stock of yield concern. Yukon River Chinook and fall chum salmon were designated as stocks of "yield concern[1]" in the fall of 2000. Summer chum salmon were designated as a stock of "management concern[2]".

The depth of gillnets in the Yukon Area is currently only restricted for commercial fishing gear. There are no gillnet depth restrictions for subsistence uses in the Yukon Area. In Districts 4, 5, and 6, commercial gillnets (i.e. set gillnets) with greater than six-inch mesh can be no more than 60 meshes deep and gillnets with six-inch or smaller mesh can be no more than 70 meshes deep. Commercial gillnets in Districts 1, 2, and 3 with greater than six-inch mesh can be no more than 45 meshes deep and gillnets with six-inch or smaller mesh can be no more than 50 meshes deep.

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[1] Yield concern: a concern arising from a chronic inability, despite the use of specific management measures, to maintain expected yields, or harvestable surpluses, above a stock's escapement needs. "Chronic inability" refers to the continuing or anticipated inability to meet expected yields over a four to five year period, which is roughly equivalent to the generation time of most salmon species. "Expected yields" refers to levels at or near the lower range of the recent historic harvests if they are deemed sustainable. A yield concern is less severe than a management concern, which refers to a stock that fails to consistently achieve biological escapement or optimal escapement goals (ADF&G and BOF 2000).

[2] Management concern: a concern arising from a chronic inability, despite use of specific management measures, to maintain escapements for a stock within the bounds of the SEG, BEG, OEG, or other specific management objectives for the fishery. "Chronic inability" means the continuing or anticipated inability to meet escapement objectives over a four to five year period, which is roughly equivalent to the generation time of most salmon species. A management concern is not as severe as a conservation concern, which refers to a stock that fails to consistently meet its sustained escapement threshold (SET) (ADF&G and BOF 2000).

The length of drift gillnets is restricted to 50 fathoms or approximately 300 feet in length for most commercial and subsistence fishing areas in the Yukon Area where drift gillnets are allowed. Subdistrict 4-A is the only area in the Yukon Area where drift gillnets are limited to no more than 150 feet in length.

Federal Regulatory History

Since October 1999, Federal regulations for the Yukon-Northern Area stipulated that, unless otherwise restricted, rural residents may take salmon in the Yukon-Northern Area at any time by gillnet, beach seine, fish wheel, or rod and reel unless exceptions are noted. In Subdistricts 4-B, 4-C and District 5, subsistence regulations have mirrored those of the State, stipulating that fishers may not take salmon using drift gillnets. A less restrictive proposal (FP04-05) to allow the use of drift gillnets in the lower 16 miles of Subdistricts 4-B and 4-C was submitted to the Federal Subsistence Board (Board) in 2003. The Board rejected that proposal based on conservation concerns. However, there were many points discussed on both sides of the issue during that Board meeting. The proponent was encouraged to work with State and Federal staff and subsistence users to craft another proposal with some adjustments that may help address some of the conservation concerns (FSB 2003).

Gear Used in the Middle and Upper Yukon River

Loyens (1966) describes the importance of salmon to the people of the Yukon River as "the staple in the native food supply…and that fishing was the most important subsistence activity" and it remains highly important today. Among salmon, Chinook salmon are foremost in importance for most people, followed by chum and coho salmon (Pope 1979).

Historically, the primary salmon fishing gear types were fish traps used together with fish fences, gillnets, and dip nets prior to the introduction of fish wheels around the turn of the century (Loyens 1966). Around 1910, people along the Yukon began to use the fish wheel almost exclusively in the middle and upper river areas, establishing large camps on the Yukon River (McFadyen Clark 1981).

Drift gillnets were historically used by the Deg Hit'an and Koyukon Athabaskan people in the middle Yukon as an alternative to fish traps or dip nets (Wheeler 2004 pers. comm., and Osgood 1940). Drift gillnets were primarily used to catch Chinook salmon and were deployed from a canoe or suspended between two canoes on the main river. During the 1950s drift gillnets became more common, facilitated in part by the introduction of power motors.

Drift gillnets have been used by some residents of Galena for many years. When drift gillnets were again allowed in the upper portion of Subdistrict 4-A in 1981, fishers from Galena began making the 16-mile trip downstream to drift for Chinook salmon. Typically, unrelated individuals fish together during the evenings for several hours at a time (Marcotte 1990). This method of salmon fishing can be effective for catching Chinook and fall chum salmon with economy of effort since separate trips are not needed to reset or pull gear at the beginning and ends of the open fishing periods (Marcotte 1990).

Drift gillnet use in the upper Yukon River, above District 4, has not been well documented and is likely to have been at very low levels when allowed. However, there has been some reported use of drift gillnets as far upstream as the Teslin River in Canada, just below the highway bridge at Johnson's Crossing (USFWS 1956). There have also been verbal reports from elders and Regional Council members of people using drift gillnets in the Alaskan portion of the middle and upper Yukon River for subsistence fishing prior to the restrictions going into place for this gear type.

Biological Background

Chinook Salmon Stock Status

The first half of the Chinook salmon run is primarily composed of Canadian-bound fish (Holder and Senecal-Albrecht 1998). Middle Yukon Chinook stocks are also important contributors to the first half of the run. Lower and middle river Chinook salmon stocks are thought to contribute mostly to the second half of the run. Early run, Canadian-bound Chinook salmon are the first salmon available each spring when drying conditions are often the best. As a result, these Canadian stocks support the largest share of the Chinook salmon subsistence fishery and about half of the Chinook salmon commercial fishery as they migrate up the Yukon River.

The Canadian border passage estimate of Chinook salmon was the lowest from 1998 to 2000 but has improved over the past four years (**Figure 1).** The current US/Canada Yukon River Panel escapement rebuilding objective for Chinook salmon across the border is 28,000 fish (ADF&G and USFWS 2004). Commercial fishing was drastically reduced during years of lower returns for Yukon River Chinook salmon. Based on the numbers of Chinook salmon migrating past the Canadian border, the commercial fishing closures in 2001 and the conservative strategy used in 2002 and 2003 to delay commercial harvests until about the mid-point of the Chinook salmon run were important and responsive management actions implemented by the in-season managers.

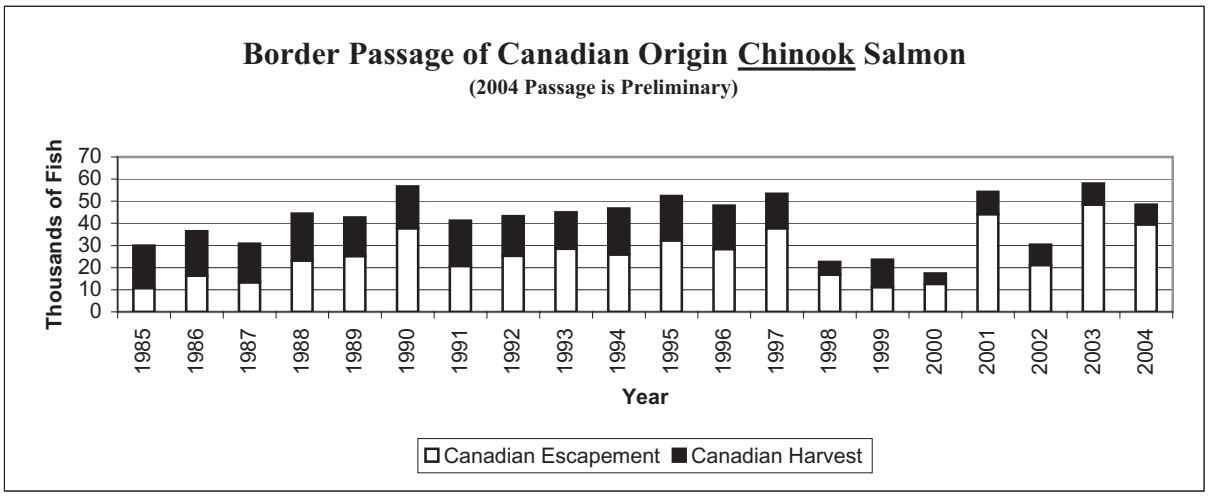

Figure 1. Yukon River Canadian-origin Chinook salmon border passage 1985-2004 (ADF&G and USFWS 2004 and ADF&G 2004).

Yukon River Chinook, summer chum, and fall chum salmon continue to be listed as stocks of concern. Although Chinook salmon are listed as a stock of yield concern, this past season is the fourth consecutive year with improved Chinook salmon returns to the Yukon River. Commercial harvests of Yukon Chinook salmon have improved in recent years but are still below levels commercially harvested in the late 1980s and early 1990s.

Chum Salmon Stock Status

Drift gillnets are currently allowed to harvest chum salmon for subsistence in Districts 1-3 throughout the season and in Subdistrict 4-A upstream of Stink Creek after August 2. They are not allowed in Subdistrict 4-A below Stink Creek after July 14. Although most chum salmon harvested after August 2 in Subdistricts 4-B and 4-C are likely to be fall chum salmon, the stock status of summer chum and fall chum salmon are presented here for a more thorough overview.

Yukon River summer chum salmon have experienced poor to below average returns in recent years. When compared to higher returns such as in 1995, summer chum salmon run strength experienced declines until 2002 when there was a slight increase in the index counts at the Pilot Station and Anvik River sonar projects (**Figure 2**). The Anvik River sonar index has a biological escapement goal of 400,000 to 800,000 summer chum salmon and passage index counts in 2000 and 2001 were below the lower objective. The Pilot Station sonar does not have an established escapement objective but does provide index counts to help assess run strength between years. The drainage-wide minimum management objective for summer chum salmon is 600,000 fish and drainage-wide escapements were below this in 1999, 2000, and 2001 (ADF&G and USFWS 2004). However, summer chum salmon run strength has improved for the past three years and appear to be rebuilding.

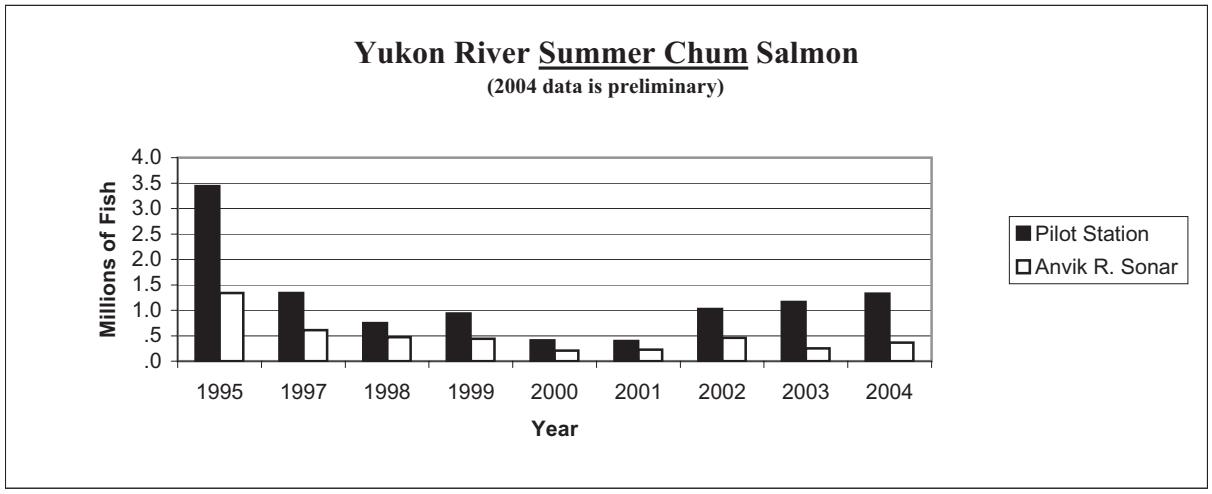

Figure 2. Summer chum salmon sonar index counts for Pilot Station and Anvik River, 1995 to 2004 (ADF&G and USFWS 2003, and ADF&G 2004).

Yukon River fall chum salmon have also experienced declining returns since the late 1990s (**Figure 3**). Fall chum salmon index counts at the Pilot Station sonar declined to a level of around 400,000 fish from 1998 to 2002 (ADF&G and USFWS 2004). The past two years have provided more encouraging returns with Pilot Station sonar passage index counts of over 600,000 fish. However, in-season management restrictions on subsistence harvests for fall chum salmon were necessary to help protect runs in 1998 and 2000 through 2003. The Yukon River Drainage Fall Chum Salmon Management Plan was modified in 2004 so that some level of subsistence harvest restriction may be implemented when the Pilot Station sonar passage index count is between 300,000 and 500,000 fall chum salmon (ADF&G and USFWS 2004). The drainage-wide minimum management objective for fall chum salmon spawning escapement is 300,000 fish. Subsistence harvest restrictions for fall chum salmon have mostly been in the form of less fishing time allowed or even closed altogether, such as in 2000.

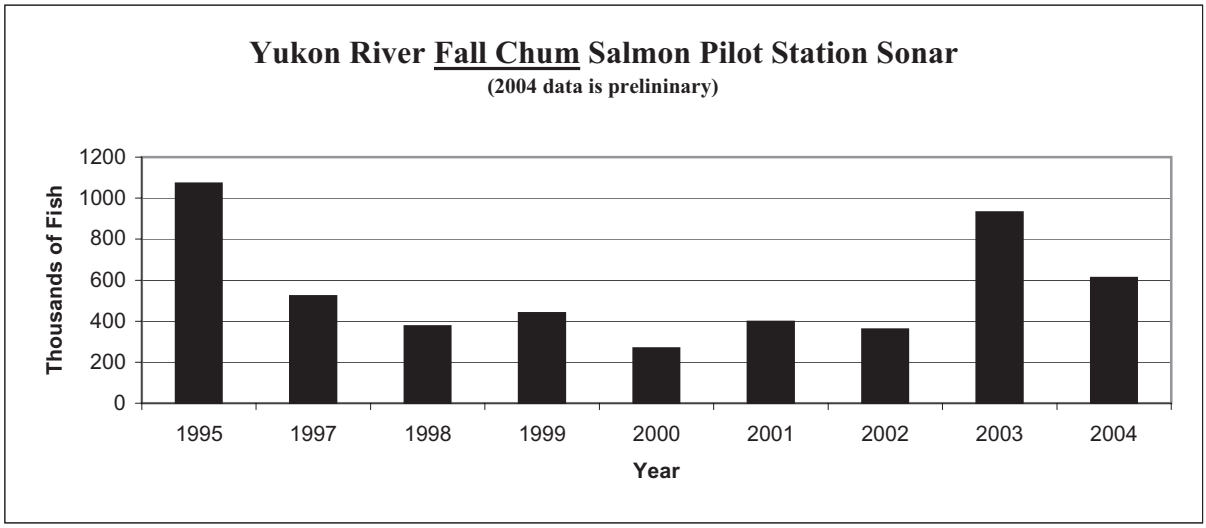

Figure 3. Fall chum salmon sonar index counts at Pilot Station sonar, 1995 to 2004 (ADF&G and USFWS 2003, and Bue 2004, pers. comm.).

Subsistence Salmon Harvests

Chinook Salmon Harvests

Federal public waters are very limited in Subdistricts 5-A, 5-B, and 5-C. Therefore, information in this analysis focuses primarily on Subdistricts 4-B, 4-C, and 5-D harvest levels. Subsistence fishers in Subdistricts 4-B, 4-C, and 5-D harvest salmon primarily with set gillnets and fish wheels as required by regulation. In general, subsistence Chinook salmon harvests in Subdistricts 4-B and 5-D have increased while harvests in Subdistrict 4-C have slightly decreased over the past 30 years (**Figure 4).** The apparent large increase in harvest in Subdistrict 5-D beginning in 1978 was largely due to an increase in reported harvest as people grew accustom to reporting their harvest utilizing a new permit system that started in 1973. Also there were some larger Chinook salmon returns in the late 1970s and 1980s (Borba 2004, pers. comm.). The average annual subsistence harvest of Chinook salmon over the past ten years (1994-2003) has been 1,968 fish in Subdistrict 4-B (Galena), 1,565 fish in Subdistrict 4-C (Ruby) and 8,275 fish in Subdistrict 5-D (8 villages) (**Table 1**). Subsistence harvests of Chinook salmon in District 5 have been the largest of all six districts, with Subdistrict 5-D accounting for

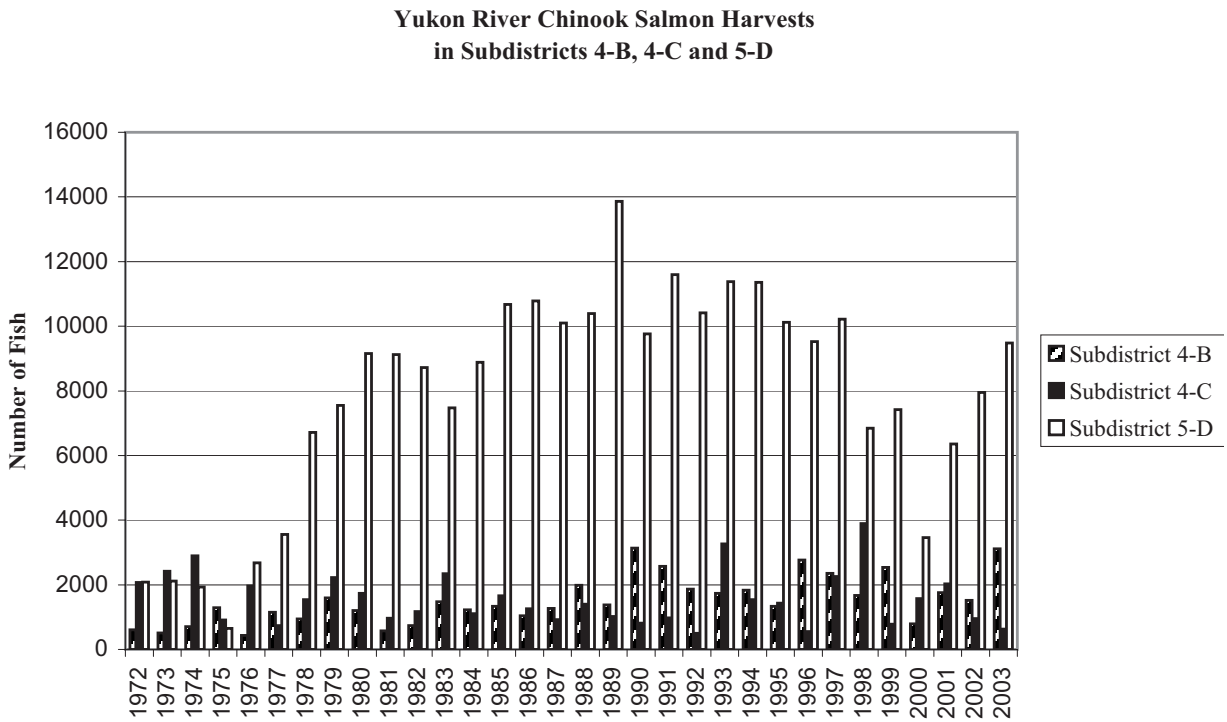

Figure 4. Chinook salmon subsistence harvests in Yukon River Subdistricts 4-B, 4-C, and 5-D, 1972-2003. (ADF&G 1994, ADF&G 1998, ADF&G 2000, Bue 2003, pers. comm., and Busher 2004, pers. comm.).

Table 1. Yukon River Chinook salmon subsistence harvest estimates for Subdistricts 4-B, 4-C, 5-A and 5-B, 5-C, 5-D, and District 5 totals with the percentage of the District 5 subtotal within each grouping (ADF&G 2000, Bue 2003, pers. comm., and Busher 2004, pers. comm.).

	Subdistricts					
Year	**4-B** Galena	**4-C** Ruby	**5-A & 5-B** Tanana	**5-C** Rampart	**5-D** 8 villages	**District 5 Total**
1994	1,834	1,539	2,999 (19%)	1,354 (9%)	11,361 (72%)	15,714
1995	1,336	1,435	2,398 (18%)	1,461 (10%)	10,122 (72%)	13,981
1996	2,770	557	2,741 (19%)	1,751 (13%)	9,528 (68%)	14,020
1997	2,350	2,260	3,596 (22%)	2,203 (14%)	10,218 (64%)	16,017
1998	1,668	3,891	5,212 (40%)	885 (7%)	6,849 (53%)	12,946
1999	2,539	777	3,388 (26%)	2,018 (16%)	7,423 (58%)	12,829
2000	788	1,577	2,895 (40%)	847 (12%)	3,462 (48%)	7,204
2001	1,756	2,033	4,112 (35%)	1,407 (12%)	6,404 (53%)	12,373
2002	1,522	954	2,379 (21%)	852 (8%)	7,952 (71%)	11,183
2003	3,112	631	5,332 (33%)	1,411 (9%)	9,479 (58%)	16,222
10-Year Average	**1,968**	**1,565**	**3,505** (27%)	**1,419** (11%)	**8,280** (62%)	**13,249**

Note: 2003 data is preliminary. Subdistrict 5-D harvest estimates include primarily residents of Stevens Village, Birch Creek, Beaver, Fort Yukon, Circle, Central, Eagle, and Eagle Village.

approximately 62% of the average annual District 5 harvest over the past ten years.

Subsistence harvest levels fluctuate to some degree from one year to the next and these variations between years are difficult to fully explain. These annual variations are likely due to a combination of a number of factors such as the strength of a particular salmon run, regulatory restrictions, fishing conditions, availability of summer jobs, equipment, the availability of other subsistence resources or other reasons affecting subsistence users in any given year.

Chinook salmon subsistence harvests have been approximately 50,000 fish annually for residents in the Alaskan portion of the Yukon River over the past 16 years (**Figure 5**). Chinook salmon subsistence harvests were below this average in two (2000 and 2002) of the five years (1998 – 2002) which had below average Chinook salmon returns. District 5 has experienced the most substantial drop in subsistence harvests of Chinook in recent years, with the recent 5-year average annual harvest from 1999 to 2003 being approximately 27% below the 1988-1992 average annual harvest.

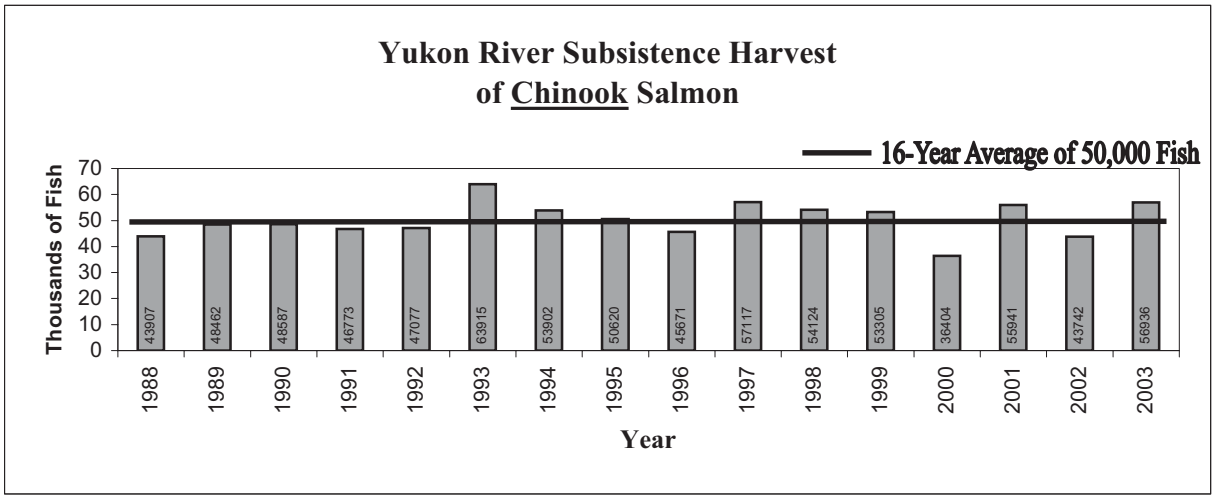

Figure 5. Historical subsistence harvest of Chinook salmon in the Alaskan portion of the Yukon River with the 16-year average (1988 to 2003) as a reference (ADF&G 1994 and ADF&G 2003).

Chum Salmon Harvests

Summer chum salmon subsistence harvests have also declined in response to lower returns. Annual subsistence harvests of summer chum salmon for the Yukon Area have been below the 16-year average annual harvest of approximately 118,000 fish since 1998 (**Figure 6**). These lower harvest numbers have continued even with better returns during the past three years.

Fall chum salmon had poor to below average returns from 1997 to 2002 that required managers to place restrictions on subsistence harvest opportunities during the fall chum salmon season. This resulted in the most substantial reductions of all subsistence salmon harvests for the Yukon Area. Fall chum salmon annual subsistence harvests have been below the 16-year average annual harvest of approximately 102,000 fish for the past seven years (1997 to 2003). Although fall chum salmon returns have improved for the past two years (**Figure 7**).

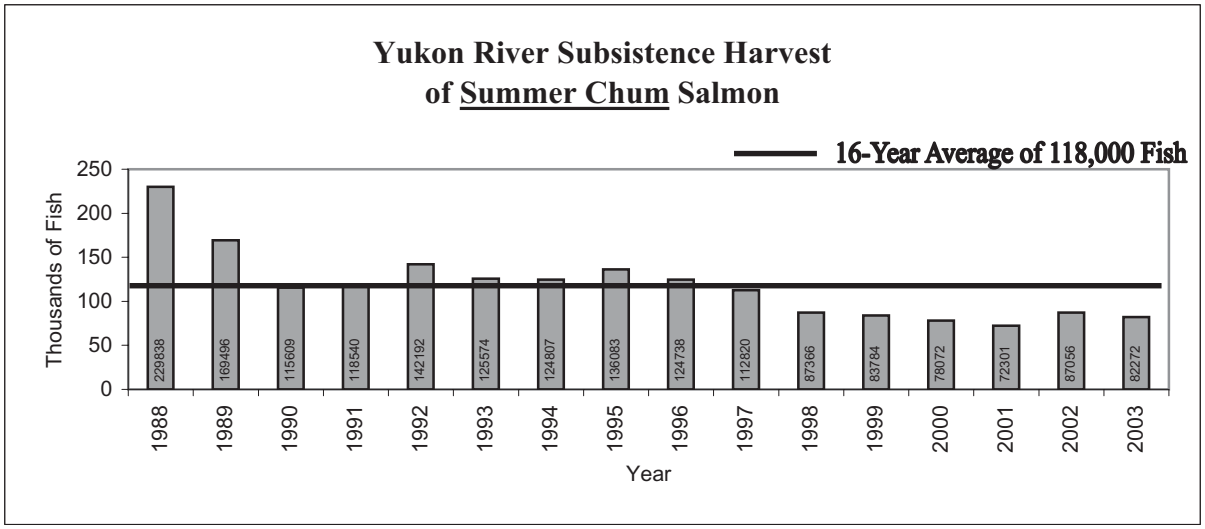

Figure 6. Historical subsistence harvest of summer chum salmon in the Alaskan portion of the Yukon River with the 16-year average (1988 to 2003) as a reference (ADF&G 1994 and ADF&G 2003).

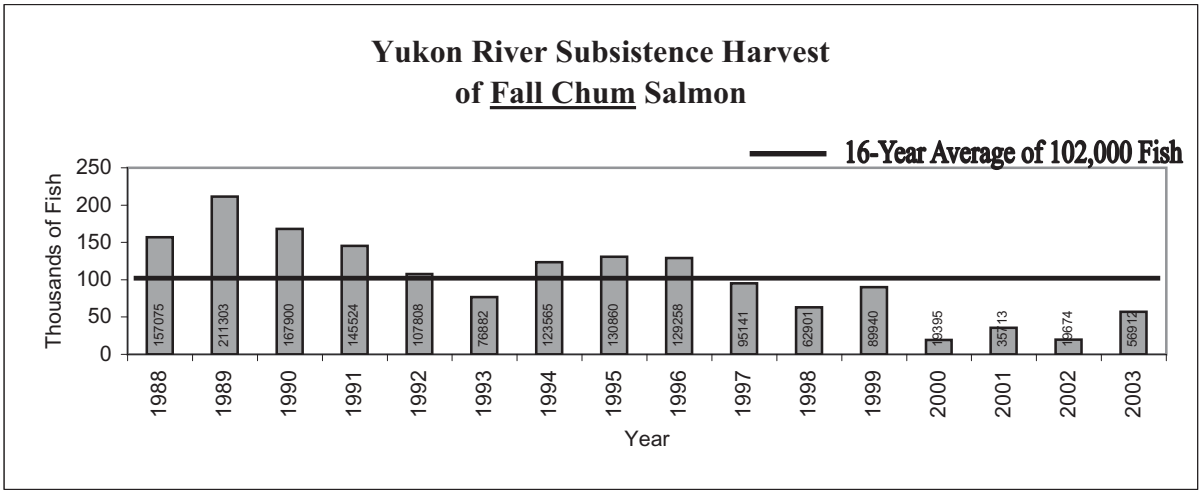

Figure 7. Historical subsistence harvest of fall chum salmon in the Alaskan portion of the Yukon River with the 16-year average (1988 to 2003) as a reference (ADF&G 1994 and ADF&G 2003).

Effects of the Proposal

The proposal, if adopted, could provide residents of Subdistricts 4-B, 4-C, and District 5 with a more efficient method of harvesting their subsistence salmon in Federal public waters. The eleven communities that could benefit directly from this change are Galena, Ruby, Tanana, Rampart, Stevens Village, Beaver, Birch Creek, Fort Yukon, Circle, Eagle, and Eagle Village. However, Tanana and Rampart are not located within or near Federal public lands and are approximately 28 and 63 miles, respectively, from the nearest Federal refuge boundary. It is less likely that people from these two villages would travel these distances to take advantage of the more efficient gear type. Also, the village of Koyukuk, in the upper portion of Subdistrict 4-A could benefit indirectly, in that fishers from further upriver would no longer need to come into their area to use drift gillnets.

The provisions within the proposal, if adopted, would provide for the most conservative regulation in place for the use of subsistence drift gillnets on the Yukon River. It would allow people to use drift gillnets closer to home, requiring less travel time to and from set gillnet and fishwheel sites, more efficient use of available resources to harvest salmon (i.e. fuel), safer travel to the fishing site by reducing the distance traveled to utilize this gear type, and less coordination with neighbors to use set gillnet or fish wheel sites.

Although there is little written documentation of people using drift gillnets in the upper Yukon area, it is reasonable to conclude that some use of drift gillnets did occur in the upper river, similar to that reported in Canada (USFWS 1956), prior to being regulated out of use in 1977. There have been verbal reports from elders and Regional Council members of people using drift gillnets in the Alaskan portion of the middle and upper Yukon River for subsistence fishing prior to restrictions on this gear type. If adopted, it is difficult to predict if drift gillnets would become a widely used gear type in the middle or upper river areas. The majority of people within the proposed area have traditionally used either set gillnets or fish wheels and would likely continue to do so. It is likely that some people would take advantage of a new opportunity which may result in some increase in harvest levels. However, it is not likely that any increases in harvest levels would be substantial enough to detect in the overall harvest totals for the Yukon Area.

Subdistrict 4-A, below Stink Creek, is the best area in the Yukon River to compare historical Chinook salmon subsistence harvest estimates with and without the use of drift gillnets. Drift gillnets have been allowed in Subdistrict 4-A, below Stink Creek, except for an 18 year period from 1977 to 1994 (**Figure 8**). The harvests there since 1995, when drift gillnets were allowed back by regulation, have been higher for five of the nine years, despite lower salmon returns in three of those years. These increases in harvests during those five years did not, however, reflect an increase in the total Yukon Area Chinook salmon harvests beyond levels normally seen, as shown in Figure 5.

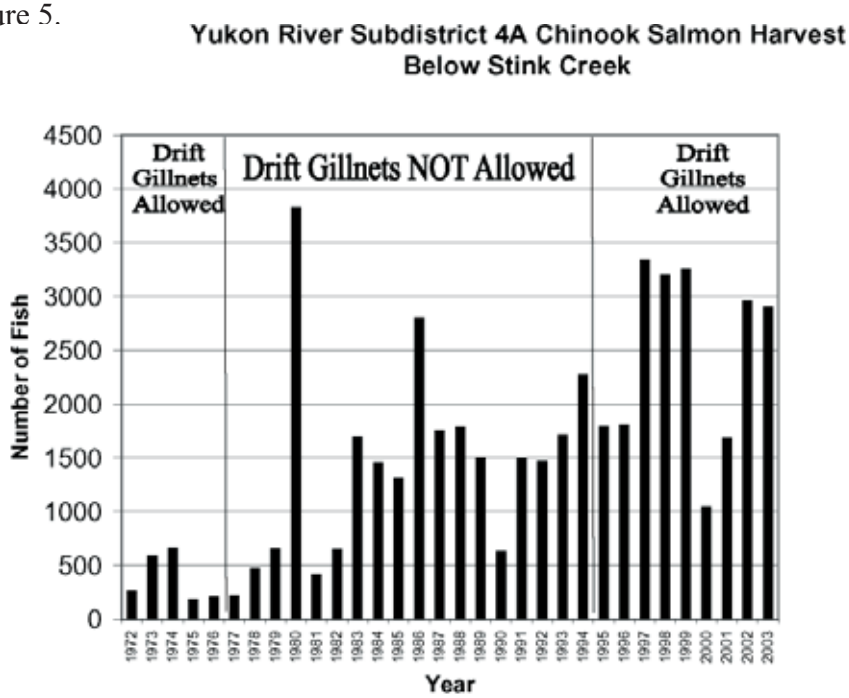

Figure 8. Chinook salmon subsistence harvests in the Yukon River, Subdistrict 4-A below Stink Creek, 1972 to 2003 (ADF&G 1994, ADF&G 2000, Bue pers. comm. 2003, and Busher pers. comm. 2004)

Normal fluctuations in harvest levels can be due to more efficient gear or to unrelated factors such as the strength of the salmon run, availability of summer jobs, equipment, the availability of other subsistence resources, or other unknown factors affecting subsistence users. Subsistence users typically report that their harvest levels are based on their needs for the year rather than what they are able to catch with available gear. If adopted and harvests do increase, however, one explanation could be that subsistence users in these areas were not meeting their needs for Chinook salmon prior to being able to use this gear type.

In response to some of the concerns raised in 2003, the proponent included two conservation measures in the proposal. First, drift gillnets would only be allowed in the proposed areas during two 36-hour periods within the current subsistence fishing schedule. This is the least amount of time allowed in any area of the Yukon River where drift gillnets are currently allowed. The 36-hour time limitation for subsistence fishing with drift gillnets would be equal to the time currently allowed in the lower river when the subsistence fishing schedule is in place. Once the subsistence fishing schedule is relaxed in the lower river, Districts 1-3 are open to subsistence fishing 24-hours a day 7-days per week except immediately before, during, and after commercial openings. Subsistence fishing time in the lower river is reduced around and during commercial fishing periods but most lower river fishers usually have met their subsistence needs when commercial fishing begins. In Districts 4-6 of the Yukon River, once the subsistence fishing schedule is relaxed, specific subsistence fishing periods remain in place to allow fish to move up-river. The two 36-hour periods being proposed would occur within and at the end of the two 48-hour periods currently allowed in Subdistricts 4-B and 4-C. However, Subdistrict 5-D is currently open 24-hours a day seven days per week. If drift gillnets are allowed in Subdistrict 5-D, one 72-hour period (two-36's) would reduce travel time and logistics for subsistence users.

Drift gillnets are recognized as a more efficient gear type than set gillnets or fishwheels. However, limiting them to a maximum of 35 meshes deep and 150 feet in length would provide the most conservative subsistence or commercial regulation for salmon harvests in the Yukon River with this gear type. Currently there are no limits on the depth of subsistence gillnets for the Yukon River and only Subdistrict 4-A has the same net length restriction. It would also make the proposed area consistent with current net depth restrictions for the Kuskokwim River. This could help protect fish traveling in deeper water.

If allowed, drift gillnet use in the middle and upper river would be a relatively new gear type in this area, since it has not been allowed by regulation for the past 28 years. However, ANILCA was intended to allow for changes in technology and/or techniques for subsistence uses. The Congressional committee report on ANILCA provided a detailed description stating that "technology and techniques employed by those making subsistence uses of resources of the public lands may be subject to continuing change in the future as they have been in the past" (H. R. 1978).

The river channel in the upper river areas is generally shallower with many snags. This would require subsistence users to locate areas where drifting gillnets could be done without losing or damaging their gear.

Based on the current regulatory constraints and the low historical documented use of drift gillnets in these upper river areas, it is unlikely a significant increase in drift gillnet use would

occur. It would, however, provide another option to help subsistence users meet their needs for Chinook salmon. This change would allow middle and upper Yukon River subsistence users the opportunity to use the same gear type (drift gillnets) to target the same salmon stocks as both lower river subsistence and commercial fishers.

Adopting these regulations would also create some concerns for implementing such a change. Yukon River salmon stocks are fully allocated (Holder 2004). If harvests do change as a result of allowing this gear type it could affect other fisheries of the Yukon River. There is some concern that allowing drift gillnetting as an efficient gear type may have the potential for changing the effort, location and harvest amounts over time (Holder 2004).

There are also some in-season and post-season reports that suggest we have begun to see Yukon River salmon stocks rebound since 2001 and that upriver subsistence harvesters have had less difficulty in meeting their annual harvest needs for 2003 and 2004 (EIRAC 2004). There have also been reports that many fishers seem to be satisfied with their harvests in recent years.

Coordination, to the extent possible, between Federal and State management continues to be an important aspect of dual management. If this proposal is adopted, it would create a divergence between Federal and State regulations. This would require accurate physical descriptions of Federal public land boundaries, creating and distributing maps, and placing markers along the river bank. The different regulations associated with the varying land status may be confusing. In addition to the land status confusion, this could create law enforcement issues. Given a mixed network of jurisdictions, fishers may be unaware of the differing land status, which would create the need for Federal field personnel to conduct extensive outreach with fishers in order to avoid potential law enforcement issues. Public meetings in the affected villages would likely be needed to help inform local people of regulation changes and land boundaries affected. In addition, since this would be a significant departure from current State regulations, separate in-season Federal News Release announcements would be required. Implementing drift fishing windows within the present windowed schedule is possible but practical implementation will require extensive educational and outreach efforts.

If adopted, the harvest level in these areas would also need to be monitored for significant changes. Monitoring for changes in harvest patterns could best be done through the existing Yukon River harvest monitoring program conducted by the ADF&G. However, this may require additional effort and/or resources to accurately assess any such changes. Another option to help inform the public and monitor the fishery is to require a permit for the use of drift gillnets in the proposed areas. If a permit requirement was added for the use of drift gillnets in these areas, an aggressive education and outreach program would need to be implemented along with a system of making the permits available in each community. However, any new permit data would not likely be comparable to the existing subsistence harvest data to assess the impacts of a new regulation because the current data collected by ADF&G is not required permit data.

In the middle Yukon River area the migration timing of Chinook salmon should coincide with the dates of June 10 to July 14 that are also used in Subdistrict 4-A. The migration timing of Chinook salmon through Subdistrict 5-D would be later and the dates of June 20 through July 31 would be more appropriate, if adopted.

Since Federal public waters are very limited in Subdistricts 5-A, 5-B, and 5-C, a new Federal regulation would only provide a minimal increase in opportunity in areas which are primarily under State jurisdiction.

Concerning the Modifications Recommended by the Western Interior Council

The proponent recommended modifications to their proposal in response to concerns raised by other subsistence users. Most of the effects discussed above regarding the proposal also apply to their recommended modifications. However, there are a few additional effects to be considered regarding these modifications.

The recommended modifications to the proposal would limit the new area for drift gillnets to only Subdistricts 4-B and 4-C, with seasonal dates of June 10 through July 14 to harvest Chinook salmon and after August 2 to harvest chum salmon. They would also reduce the time allowed to use drift gillnets by half, from two 36-hour periods to two 18-hour periods at the end of the windowed openings and fishing periods stated in regulation. The 35 mesh depth restriction would remain unchanged.

If drift gillnets were allowed only in Subdistricts 4-B and 4-C, the villages of Galena, Ruby, Koyukuk, and possibly Tanana, would benefit. Galena is located in Subdistrict 4-B and Ruby is located in Subdistrict 4-C. Fishers in these villages would be allowed to use drift gillnets in their local area. Koyukuk is located in the upper portion of Subdistrict 4-A and would likely benefit from no longer having to compete with fishers coming downriver from Galena and Ruby to use drift gillnets. Tanana is located in Subdistrict 5-B and is the nearest village (approximately 28 miles) upstream from the upper boundary of Subdistricts 4-B and 4-C.

Another effect of the recommended modifications could be that more subsistence users in Subdistricts 4-B and 4-C may choose to use drift gillnets as their primary gear type. ADF&G conducts annual household surveys for all of the Yukon Area to help assess subsistence salmon harvests. The estimated number of fishing households and the primary gear type used by fishers in these communities are summarized in **Table 2**.

As shown in Table 2, the community of Galena has had an average of 56 households that fished for salmon annually over the past ten years (1994-2003). Also, an average of 23% of those households reported that they used drift gillnets as their primary gear type to harvest salmon. Some of these households could have been targeting fall chum salmon with drift gillnets after August 2 but it is likely that the majority of those using drift gillnets used them to target Chinook salmon in Subdistrict 4-A. Fishers in Ruby have historically used drift gillnets opportunistically since they must travel a greater distance to reach the Subdistrict 4-A boundary. As expected their reported use of drift gillnets has been zero in all but one of the past ten years.

If drift gillnets are allowed in closer proximity to the communities of Galena and Ruby, the number of households using drift gillnets would likely increase. This is suggested by the situation where residents in Koyukuk currently are allowed to use drift gillnets directly in front of their village. The fishing households in Koyukuk that primarily use drift gillnets has remained fairly constant at 50% to 60% over the past 10 years. The data from all three villages suggest that the gear type chosen as the primary method of harvest for salmon has remained fairly constant over the past ten years.

Table 2. Estimated number of fishing households in Galena, Ruby, and Koyukuk and the estimated number of households that used drift gillnets as their primary gear type to harvest Yukon River salmon for subsistence use from 1994 through 2003 (ADF&G 1994, 1998, 1999, 2000, Bue 2003, pers. comm. and Busher 2004, pers. comm.).

Year	Galena Households that Fished	* Galena HH Used Drift Gillnets (%)	Ruby Households that Fished	* Ruby HH Used Drift Gillnets (%)	Koyukuk Households that Fished	* Koyukuk HH Used Drift Gillnets (%)
1994	54	15 (28%)	23	0	16	7 (44%)
1995	54	7 (13%)	21	2 (9%)	4	2 (50%)
1996	71	5 (7%)	8	0	10	4 (40%)
1997	45	13 (29%)	19	0	16	4 (25%)
1998	47	19 (40%)	24	0	15	9 (60%)
1999	51	19 (37%)	9	0	19	11 (58%)
2000	49	18 (37%)	15	0	18	9 (50%)
2001	52	12 (23%)	38	0	15	8 (53%)
2002	58	10 (17%)	15	0	7	4 (57%)
2003	78	10 (13%)	16	0	16	9 (56%)
10 - Year Avg.	**56**	**13 (23%)**	**19**	**0**	**14**	**7 (49%)**

* Note: Prior to 2001, estimates of primary gear types used were expanded for households that were not surveyed. For the past three years that information has not been expanded but is rather the actual number households surveyed that report drift gillnets as their primary gear type used. The primary gear type reported by users does not specify which species of salmon were targeted with that gear type.

Another modification recommended by the proponent as an additional conservation measure would limit the use of drift gillnets to two 18-hour periods instead of two 36-hour periods, to be placed at the end of the windowed openings and fishing periods. The current subsistence fishing schedule in Subdistricts 4-B and 4-C is two 48-hour periods per week. If the two 18-hour periods were placed at the end of the fishing periods, drift gillnets would be allowed from midnight on Thursday through 6 p.m. Friday and midnight Saturday through 6 p.m. Sunday. This timing may reduce the actual time fished due to the specific hours allowed.

A few Western Interior Regional Advisory Council members from the upper portion of District 4 have offered to help with public outreach and education in these communities. They do not feel that it would be a problem to communicate a regulatory change such as this to the public in Subdistricts 4-B and 4-C (Kron 2004, pers. comm.).

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Appendix A

Subsistence fishing time allowed by District and Subdistrict in Federal regulation after the "windowed" schedule has been lifted is the same as the openings in State public waters unless superceded by special action. The actual windowed subsistence fishing schedule is defined in the State regulations listed below.

§___.27(i)(3) Yukon-Northern Area.

(i) Unless otherwise restricted in this section, you may take fish in the Yukon-Northern Area at any time. You may subsistence fish for salmon with rod and reel in the Yukon River drainage 24-hours per day, 7 days per week, unless rod and reel are specifically restricted by this paragraph (i)(3) of this section.

(ii) For the Yukon River drainage, Federal subsistence fishing schedules, openings, closings, and fishing methods are the same as those issued for the subsistence taking of fish under Alaska Statutes (AS 16.05.060), unless superseded by a Federal Special Action.

(iii) In the following locations, you may take salmon during the open weekly fishing periods of the State commercial salmon fishing season and may not take them for 24-hours before the opening of the State commercial salmon fishing season:

(A) In District 4, excluding the Koyukuk River drainage;

(B) In Subdistricts 4_B and 4_C from June 15 through September 30, salmon may be taken from 6:00 p.m. Sunday until 6:00 p.m. Tuesday and from 6:00 p.m. Wednesday until 6:00 p.m. Friday;

(C) In District 6, excluding the Kantishna River drainage, salmon may be taken from 6:00 p.m. Friday until 6:00 p.m. Wednesday.

(iv) During any State commercial salmon fishing season closure of greater than five days in duration, you may not take salmon during the following periods in the following districts:

(A) In District 4, excluding the Koyukuk River drainage, salmon may not be taken from 6:00 p.m. Friday until 6:00 p.m. Sunday;

(B) In District 5, excluding the Tozitna River drainage and Subdistrict 5_D, salmon may not be taken from 6:00 p.m. Sunday until 6:00 p.m. Tuesday.

(v) Except as provided in this section, and except as may be provided by the terms of a subsistence fishing permit, you may take fish other than salmon at any time.

(vi) In Districts 1, 2, 3, and Subdistrict 4-A, excluding the Koyukuk and Innoko River drainages, you may not take salmon for subsistence purposes during the 24-hours immediately before the opening of the State commercial salmon fishing season.

(vii) In Districts 1, 2, and 3:

(A) After the opening of the State commercial salmon fishing season through July 15, you may not take salmon for subsistence for 18-hours immediately before, during, and for 12-hours after each State commercial salmon fishing period;

(B) After July 15, you may not take salmon for subsistence for 12-hours immediately before, during, and for 12-hours after each State commercial salmon fishing period.

(viii) In Subdistrict 4-A after the opening of the State commercial salmon fishing season, you may not take salmon for subsistence for 12-hours immediately before, during, and for 12-hours after each State commercial salmon fishing period; however, you may take king salmon during the State commercial fishing season, with drift gillnet gear only, from 6:00 p.m. Sunday until 6:00 p.m. Tuesday and from 6:00 p.m. Wednesday until 6:00 p.m. Friday.

FP05-05 Executive Summary	
General Description	Establish a 6-day fall chum salmon opening for Federally-qualified subsistence users only in Subdistrict 5-D. (Originator: Eastern Interior Regional Council)
Proposed Regulation	**Yukon-Northern Area – Chum Salmon** *§___.27(i)(3)**(xxii) Within Yukon River Subdistrict 5-D within the Federal public waters a September 15–20 fall chum subsistence opening for Federally qualified subsistence users only.***
Region 5 - Yukon-Kuskokwim Delta Regional Council Recommendation	**Oppose.**
Region 6 - Western Interior Regional Council Recommendation	**Oppose.**
Region 9 - Eastern Interior Regional Council Recommendation	**Support.**
Interagency Staff Committee Recommendation	**Oppose**.
ADF&G Comments	The Federal Subsistence Board meeting book is being published prior to development of final recommendations and comments by the Alaska Department of Fish and Game. This information will be available on the Department's website by January 4, 2005. See the ADF&G homepage, under the headings of "highlights" and "regulations", at http://www.adfg.state.ak.us. For those without computer access, please call 1-907- 267-2360 for further information.
Written Public Comments	**2 Oppose.**

REGIONAL ADVISORY COUNCIL RECOMMENDATIONS

YUKON-KUSKOKWIM DELTA REGIONAL COUNCIL

Oppose. If this proposal is adopted, it would jeopardize fall chum recovery because, fall chum is still in its rebuilding stage. Other species of fish are readily available in that area to meet local subsistence fishers' needs. This proposal is confusing as presented to the Yukon-Kuskokwim Delta Council. The Yukon-Kuskokwim Delta Council prefers the original language of the proposal in the booklet that was sent to Council members for review before this meeting.

WESTERN INTERIOR REGIONAL COUNCIL

Oppose. This proposal generates both management and conservation concerns.

EASTERN INTERIOR REGIONAL COUNCIL

Support. The U.S./Canada Agreement provides that whenever possible, small-scale traditional subsistence fisheries should not be disrupted. Dog teams and the use of fall chum salmon for subsistence have declined in this area. It is becoming harder and harder for people to live out in the bush; we need to protect that bush subsistence lifestyle. Pressure on fall chum salmon is much reduced now compared to what it was years ago. As a result of regulatory restrictions and closures in recent years, reasonable opportunity has not been provided to these remote families. ANILCA is designed to protect subsistence. Restrictions and regulations are killing the bush livelihoods of small rural subsistence users in the remote areas of the Yukon River.

INTERAGENCY STAFF COMMITTEE RECOMMENDATION

Oppose the proposal, consistent with the recommendations of the Yukon-Kuskokwim Delta and Western Interior Regional Advisory Councils, but contrary to the recommendation of the Eastern Interior Regional Advisory Council.

Justification

Opposing this proposal would retain the current management scenario, which provides a flexible and responsive approach to differing levels of salmon escapement, and extensively involves the public, Councils, Coordinating Fisheries Committee, and State, Federal, and Canadian fisheries managers throughout the season.

The Eastern Interior Regional Advisory Council's recommendation to support the proposal should be rejected on the basis of the conservation criteria described in ANILCA Section 805(c). If adopted, this proposal would restrict or eliminate the inseason manager's authority to manage subsistence fisheries during the dates proposed, regardless of run strength or timing. This would be inconsistent with the principles of sound fisheries management. The ability to modify the proposed regulation inseason would rest with the Federal Subsistence Board itself, and would require a process that would be more time-consuming. The proposed regulation could also be inconsistent with the U.S./Canada agreement during years of low run strength, because of the inability to quickly close the harvest season based on inseason run estimates.

COMMENTS

ADF&G

The Federal Subsistence Board meeting book is being published prior to development of final recommendations and comments by the Alaska Department of Fish and Game. This information will be available on the Department's website by January 4, 2005. See the ADF&G homepage, under the headings of "highlights" and "regulations", at http://www.adfg.state.ak.us. For those without computer access, please call 1-907- 267-2360 for further information.

PUBLIC

Oppose. The work put out by the Yukon River Panel and the U.S. Fish and Wildlife Service to protect these Canadian bound stocks should remain in effect until such time that they feel protection is no longer needed. Protection of these fall chum salmon should also not end up as dog food. Dogs are able to eat other foods besides salmon; be grateful you can receive fish without due expense.

Mike Moses, Mountain Village

Oppose.

Yukon River Darainage Fisheries Association

STAFF ANALYSIS
FP05-05

ISSUES

Proposal FP05-05, submitted by the Eastern Interior Federal Subsistence Regional Advisory Council (Council), requests that a mandatory six-day fall chum salmon subsistence season (September 15-20) be established in Subdistrict 5-D for Federally qualified subsistence users. At its February 2004 meeting, the Council noted that the reason this proposal was submitted was because they perceived a history of the fall chum harvest season being closed in Subdistrict 5-D, while lower Yukon River users had harvest opportunities. The Council stated that the proposed action would ensure that remote families dependent upon subsistence resources, and unable to participate in assistance programs, would be given a reasonable opportunity to harvest fall chum salmon for personal consumption and use. The Council also noted that the adoption of this proposal would preclude the in-season manager's ability to restrict this fishery during this six-day period This proposal was prepared by the Office of Subsistence Management from the passage of a motion during the Eastern interior Regional Council's 2004 meeting in Beaver, Alaska (EIRAC 2004).

DISCUSSION

Existing Federal Regulation

Yukon-Northern Area – Chum Salmon

§___.27(i)(3)(ii) For the Yukon River drainage, Federal subsistence fishing schedules, openings, closings and fishing methods are the same as those issued for the subsistence taking of fish under Alaska Statutes (AS 16.05.060), unless superceded by Federal Special Action.

Proposed Federal Regulation

Yukon-Northern Area – Chum Salmon

§___.27(i)(3)(ii) For the Yukon River drainage, Federal subsistence fishing schedules, openings, closings and fishing methods are the same as those issued for the subsistence taking of fish under Alaska Statutes (AS 16.05.060), unless superceded by Federal Special Action.

§___.27(i)(3)(xxii) Within Yukon River Subdistrict 5-D within the Federal public waters, a September 15 – 20 fall chum subsistence opening for Federally qualified subsistence users only.

Customary and Traditional Use Determinations

The customary and traditional use determinations for Yukon River drainage salmon are as follows:

Salmon, other than fall chum salmon – Residents of the Yukon River drainage and the community of Stebbins.

Fall chum salmon – Residents of the Yukon River drainage, and the communities of Chevak, Hooper Bay, Stebbins and Scammon Bay.

Extent of Federal Public Waters

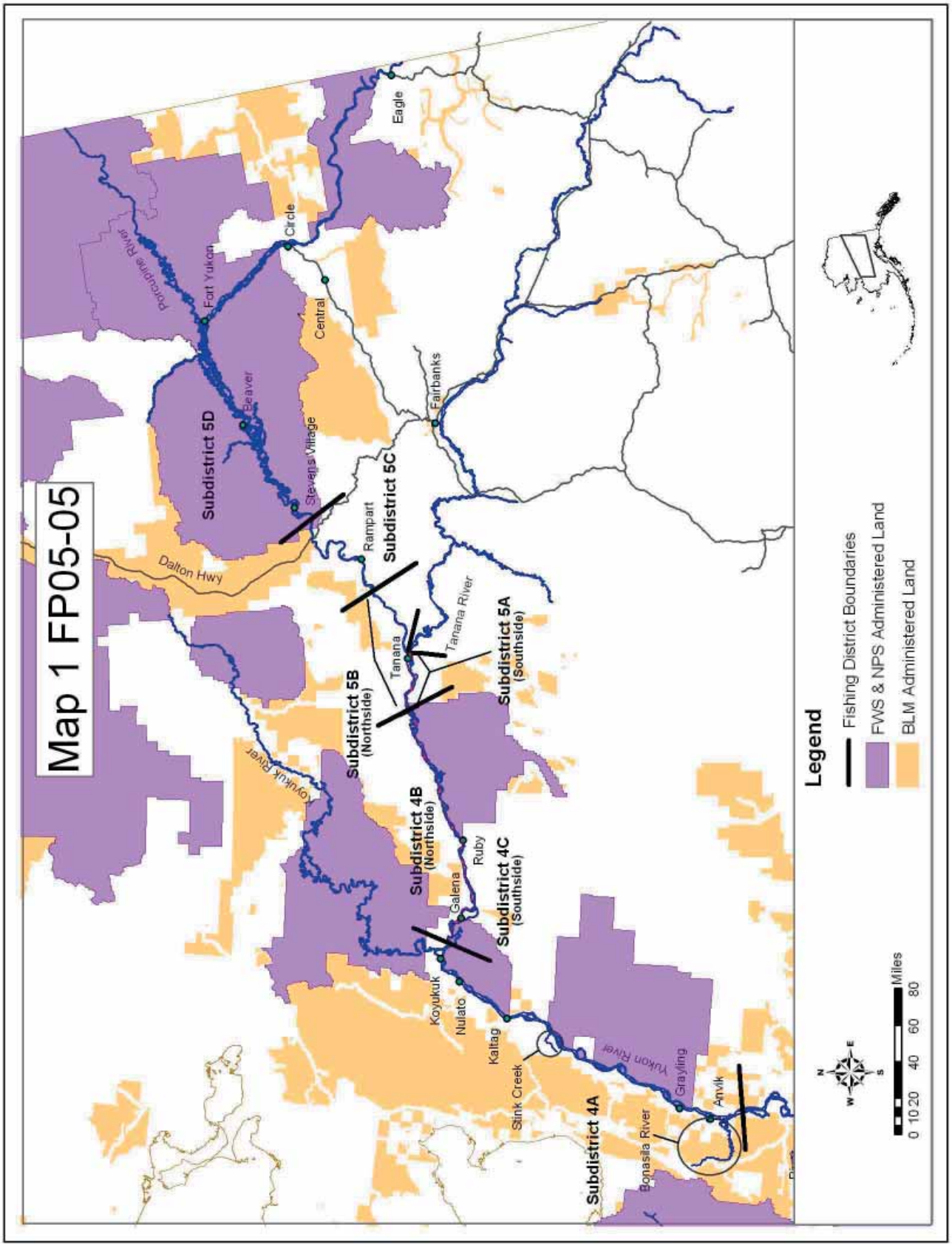
The area addressed by this proposal includes all Federal public waters of the Yukon River. Federal public waters of the Yukon River watershed include all navigable and non-navigable waters, located within and adjacent to the exterior boundaries of the Innoko, Kanuti, Koyukuk, Nowitna, Tetlin, Yukon Flats, Yukon Delta National Wildlife Refuges (NWR); the Arctic NWR; the Denali Preserve; the 1980 additions to the Denali Park; the gates of the Arctic National Park and Preserve; the Wrangell–St. Elias National Park and Preserve; Yukon-Charley Rivers National Preserve; the Steese National Conservation Area; the White Mountain National Recreation Area, and Preserve, and those segments of the Wild and Scenic River system, of the Yukon River drainage, located outside the boundaries of these Federal Conservation System Units (i.e., portions of Beaver and Birch Creeks and the Delta, and the Fortymile Rivers). The area addressed by this proposal includes all Federal public waters of the Yukon River drainage in Subdistrict 5-D, approximately from the village of Stevens Village upstream to the Canadian border (Map 1).

Note: For purposes of this discussion, the phrase "Federal public waters" is defined as those waters described under 50 CFR 100.3(b).

Regulatory History

The Federal Subsistence Board (Board) and the Alaska Department of Fish and Game (ADF&G) cooperate together through an Interim Memorandum of Agreement (MOA) which states that the Federal subsistence program will use existing State fishery management plans unless they do not provide for the subsistence priority in Federal law or a separate plan(s) is developed and adopted by the Board. The current dual subsistence salmon management system between the State and Federal agencies minimizes the impact of two sets of regulations on subsistence users. The MOA between the Federal and State agencies serves as a guide for managers and outlines how the Federal subsistence program will use the existing State fishery management plans unless they do not provide for the subsistence priority in Federal law or a separate plan(s) is developed and adopted by the Board.

Yukon River fall chum salmon are managed by ADF&G following guidelines provided by the Alaska Board of Fisheries in the Yukon River Drainage Fall Chum Salmon Management Plan (5 AAC 01.249). This management plan provides for varying levels of subsistence salmon fishing depending on the estimated in-season run projection. The fall chum salmon management plan implies that drainage-wide escapement and subsistence needs should be provided for with a run size of 500,000 fish (Table 1). An escapement goal review was completed using longer term data and new project data that provide a more comprehensive escapement assessment and resulted in new drainage-wide escapement goals. In January 2004 the Alaska Board of Fisheries acted upon this information which resulted in a lower escapement threshold for fall chum salmon from 350,000 to 300,000 fish drainage-wide. This reduction is outlined in the Yukon River Drainage


Map 1 FP05-05
Subdistrict 5D
Subdistrict 5C
Subdistrict 5B
(Northside)
Subdistrict 5A
(Southside)
Subdistrict 4B
(Northside)
Subdistrict 4C
(Southside)
Subdistrict 4A
Eagle
Circle
Fort Yukon
Central
Fairbanks
Beaver
Stevens Village
Rampart
Tanana
Ruby
Galena
Koyukuk
Nulato
Kaltag
Stink Creek
Grayling
Anvik
Bonasila River
Porcupine River
Dalton Hwy
Tanana River
Koyukuk River
Yukon River
Legend
Fishing District Boundaries
FWS & NPS Administered Land
BLM Administered Land
Miles
0 10 20 40 60 80

Fall Chum Salmon Management Plan and will provide more subsistence opportunity in years with poor runs.

Beginning in 1998, the Yukon River experienced three consecutive years of poor fall chum salmon returns. In September 2000, in response to the Sustainable Salmon Fisheries Policy and the inability of the Yukon River fall chum salmon to maintain expected yields, or harvestable surpluses, above the stock's escapement needs since 1998, the Alaska Board of Fisheries classified the Yukon River fall chum salmon stock as a "yield concern." In 2001, the Federal and State fisheries managers also initiated a windowed fishing schedule, in consultation with local Fish and Game Advisory Committees and the Yukon River Federal Subsistence Regional Advisory Councils. In the years before the windowed subsistence fishing schedule, the Yukon River was open to subsistence fishing 7-days/week, 24-hours/day prior to a commercial season. With the weak returns and the subsistence fishing schedule in place, fishers in some portions of the river were allowed less fishing opportunity than previous years. During some years of

Table 1. Yukon River Fall Chum Salmon Management Plan. Recommended Management Action (5 AAC 01.249).

Projected Run Size[1]	**Commercial**	**Personal Use**	**Sport**	**Subsistence**
300,000 or less	Closure	Closure	Closure	Closure[2]
300,001 to 500,000	Closure	Closure[2]	Closure[2]	Possible Restrictions[2&3]
500,001 to 600,000	Restrictions[2]	Open	Open	Pre-2001 Fishing Schedules
Greater than 600,000	Open[4]	Open	Open	Pre-2001 Fishing Schedules

[1] Projected run size uses the best available data.

[2] The fishery may be opened or less restrictive in areas that indicator(s) suggest the escapement goal(s) in that area will be achieved.

[3] Subsistence fishing will be managed to achieve a minimum drainage-wide escapement goal of 300,000.

[4] Drainage wide commercial fisheries may be open and the harvestable surplus above 600,000 will be distributed by district or subdistrict (in proportion to the guidelines harvest levels established in 5AAC 05.362 (f) and (g) and 5 AAC 05.365).

poor runs, subsistence fishers in the lower river were allowed to subsistence fish for fall chum salmon during the early parts of the run. As more information on run strength became available, in-season management decisions sometimes led to restrictions or closure for upriver subsistence users. Conversely, some years, users in the lower river were restricted from fishing for fall chum salmon while upriver users were unrestricted. The normal windowed fishing schedule varies by location with typically two 36-hour periods per week in the lower river, two 48-hour periods in the middle river and 7-days per week in Subdistrict 5-D.

Background

Fall chum salmon run strength was very poor in 1993 and from 1998 through 2002, with a dramatic improvement in the drainage-wide run size in 2003. The drainage-wide optimal escapement goal of 350,000 fall chum salmon was reached two (2002 and 2003) out of the last five years. The goal was surpassed by a wide margin in 2003 and most tributary escapement goals were generally met throughout the Alaska portion of the drainage. In 2000, the fall chum salmon run was the lowest on record, with 1998 and 2001 close behind (Bue et al. 2004).

The fall chum salmon fishing season in the lower Yukon River begins by regulation on July 16. Most fall chum salmon typically enter the Yukon River from mid-July through early September in erratic pulses that usually last two to three days. Generally, four to five pulses occur each season. These pulses are normally associated with onshore wind events and/or high tides. Consequently, assessing the run strength early in the season is difficult when pulse size and run timing vary drastically each season. Fall chum salmon typically take 34 days to migrate as far as the U.S./Canada border, with stocks migrating the furthest upstream generally entering the river first (U.S./Canada JTC 2002). The Yukon River Rapids test fish wheel provides the first opportunity to evaluate the upper Yukon River component as salmon migrate above the confluence of the Tanana River. Biologists normally cannot determine if the upper Yukon River fall chum salmon component will meet its tributary escapement goals until the first week of September.

Subsistence fishing management in Yukon River Subdistrict 5-D is implemented according to the 2001 Alaska Board of Fisheries windowed subsistence salmon fishing schedule which is seven days per week. If in-season estimates of fall chum salmon run strength are determined insufficient to provide for escapement then: subsistence fishing time may be reduced from the regulatory subsistence salmon fishing schedule; gear restrictions may be implemented; or all subsistence fishing prohibited. Yukon River fall chum salmon in-season run strength projections are determined by monitoring: the lower Yukon River drift gillnet test fishery near Emmonak; the Mountain Village and Kaltag drift gillnet test fisheries; Pilot Station sonar passage estimates; subsistence catch reports; the performance of the summer chum run; the Rapids/Rampart mark and recapture project; upper Yukon River drainage escapement monitoring projects including Chandalar and Sheenjek River sonars and Fishing Branch weir; U.S./Canada border passage estimates based on mark and recapture; and, if available, commercial catch statistics (ADF&G 2003a, ADF&G 2003b).

In July 2001, the subsistence salmon fishing season was initially closed in the lower river. The subsistence fishing schedule was relaxed as the fish progressed upriver. The Subdistrict 5-D subsistence fishing schedule had been reduced from 7-days a week to two 48-hour periods during the Chinook salmon run, but was later restored to 7-days per week in August. The Federal in-

season manager implemented a Federally qualified users only fishing restriction on August 6 that year, but then lifted that restriction on August 10 (Department of the Interior 2001). Most of the subsistence users in Subdistict 5-D are Federally qualified rural users and there is little use by non-rural residents (Andersen 2004, pers.comm.). The 2001 coho salmon run was relatively strong, but no directed commercial fishery was implemented because a harvestable surplus of fall chum salmon was not available (ADF&G 2001). In 2002, the subsistence fishing season was initially open in the lower river then closed at the run midpoint before salmon arrived in the upper river. Subdistrict 5-D was closed to fall chum salmon subsistence fishing and later re-opened after the last large pulse of fish passed through the subdistrict. No directed commercial coho salmon fishing was allowed that year because of the weak fall chum run, even though the coho run was near average (U.S./Canada JTC 2002). In 2003, the subsistence fishing season started with a one-third reduction in the normal schedule in the lower river and then the schedule was relaxed after the run midpoint. The upper river subsistence fishery was initially reduced to one half the normal fishing time in Subdistrict 5-D and was returned to the full fishing time of 7-days per week with a total of 84 -hours lost fishing time for the fall season. The commercial fishery in the lower river harvested 11,000 chum salmon. The coho salmon run was exceptionally strong and commercial harvests also took place in the lower Yukon and Tanana Rivers. The strength of the 2003 fall chum salmon return was not determined until late in the season due to difficulties with in-season assessments during both the summer and fall seasons. Drainage-wide escapement goals were met for all river tributaries, except for the Porcupine River (ADF&G 2004-A).

Subsistence Salmon Harvest & Escapement

In the upriver districts of the Yukon River, large numbers of fall chum salmon are harvested by subsistence users, primarily for dog food. In a number of recent years, fall chum salmon runs have been far below average, resulting in reduced allowable fishing time and correspondingly lower subsistence harvest. Poor fall chum salmon runs in some years have resulted in shortages of food for sled dogs in some villages. The State of Alaska coordinated programs to help rural villages feed their dogs.

Subsistence harvest of fall chum salmon has fallen below the State of Alaska's Amounts Necessary for Subsistence (ANS) range (89,500-167,900) in 1993, 1998, 2000, 2001, 2002, and 2003. In 2003 subsistence harvest estimates of Yukon origin fall chum salmon do not include 15,000 coho salmon provided to residents of Eagle or the commercial-related harvests in District 6. Yukon River fall chum salmon are harvested in both the commercial and subsistence fisheries.

Subsistence users of fall chum salmon in Subdistrict 5-D are mostly from nine communities, although there are some remote families who are also dependent upon fall chum salmon. **Table 2** provides the estimated harvest totals by community of residence from 1995-2002.

Alaska and Canada fall chum salmon are managed consistent with jointly developed stock rebuilding and conservation objectives. In 2004 the U.S./Canada Yukon River Salmon Panel agreed to a fall chum salmon Canadian Yukon River Mainstem spawning escapement rebuilding objective of 65,000 chum salmon, and a spawning escapement goal of 15,000 chum salmon into the Fishing Branch (ADF&G 2004b). Fall chum salmon escapements into the Canadian portion of the Yukon River from 1996-2003 are shown in **Table 3**.

Table 2. Fall chum salmon subsistence harvest totals in Subdistrict 5-D by community of residence, 1994-2002. Harvests are estimated from post season survey, returned permits and test fish projects (ADF&G 2004a).

Community	1994	1995	1996	1997	1998	1999	2000	2001	2002
Stevens Village	45	3,194	991	1,585	1,076	20	10	20	0
Beaver	2,069	1,231	9	243	409	16	0	21	1
Fort Yukon	6,827	9,196	8,144	6,119	3,035	9,702	355	2,209	3,523
Circle	4,581	5,102	5,308	3,707	37	2,722	0	2,588	74
Central	0	0	132	0	0	0	0	0	0
Eagle	8,263	13,115	14,916	14,488	543	11,292	32	2,714	339
Venetie	4,302	6,085	7,195	1,564	658	2,011	130	3,286	680
Chalkyitsik	1,751	845	1,230	936	433	442	0	73	4

Table 3. Fall chum salmon escapements into the Canadian portion of the Yukon River, 1996-2003.

Project	BEG Range	1996	1997	1998	1999	2000	2001	2002	2003
Canada Fishing Branch Weir	50,000-120,000	77,278	26,959	13,564	12,904	5,053	21,635	13,563	29,519
Canada Mainstem Tagging	>80,000	122,429	85,439	46,305	61,905	55,362	33,679	93,638	132,128

Effects of the Proposal

This proposal seeks to guarantee Federally qualified subsistence users the opportunity to fish for fall chum salmon in Subdistrict 5-D from September 15-20 each season without regard to in-season indicators of run strength. There are a few, remote families which rely on fall chum salmon for their subsistence needs and who cannot easily attain alternatives on short notice, in-season. This proposal would provide a six-day opportunity to subsistence fish regardless of fish run strength. This proposal would restrict subsistence fishing to only Federally qualified users and prohibit non Federally qualified subsistence users from harvesting fall chum salmon. Adoption of this proposal would take away the Federal in-season manager's authority to manage subsistence fishing from September 15-20 each year. During years of low fall chum salmon returns, subsistence harvest during this requested six-day period could remove fish from returns that might be below escapement requirements, thereby hampering stock recovery. The proposal would be inconsistent with the existing U.S./Canada agreement for border passage of fall chum salmon.

The current management approach provides a flexible and responsible model or strategy for providing for escapement and subsistence needs. In years of low run strength fisheries managers must retain the flexibility to restrict fisheries in order to meet escapement objectives. The current in-season strategy involves the public, affected Councils, the Coordinating Fisheries Committee (CFC), and Canadian fisheries managers in developing management recommendations throughout the fishing season.

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Supplemental Meeting Materials to the Federal Subsistence Board

11-13 Jan 2005

7 January 2005 4:00 PM

FEDERAL SUBSISTENCE BOARD
PUBLIC MEETING

January 11-13, 2005

Egan Civic and Convention Center

Supplemental Material

1) Supplemental Item: ADF&G Final Comments on 2005-06 Federal Subsistence Fisheries Proposals.

2) Supplemental Item: *Regulatory History and Stock Status of Trout in Southeast Alaska*, by ADF&G.

3) Supplemental Item: *Supplemental Materials for FP05-25*, by ADF&G.

4) Supplemental Item: Letter from Raincountry Flyfishers to Mr. Mitch Demientieff, Chair, Federal Subsistence Board, dated December 20, 2004, regarding comments on proposals FP05-28 and FP05-30.

5) Supplemental Item: Appendix A. Customary and Traditional Use Determinations for Southeast Alaska for the 2004-2005 Regulatory Year.

6) Correction Item: Federal Subsistence Board Book, FP05-17, replacement pages 191-196.

7) Correction Item: Federal Subsistence Board Book, FP05-30, replacement pages 299-302.

8) Correction Item: Federal Subsistence Board Book, FP05-03, replacement pages 425-426.

Alaska Department of Fish and Game
Final Comments on 2005-06 Federal Subsistence Fisheries Proposals

January 5, 2005

Yukon-Northern Area

Opening comments for Yukon-Northern and Kuskokwim proposals FP2005-02 through FP2005-06.

The department has continuing concerns with the process the Federal Subsistence Management Program now uses to review proposals that pertain to the Yukon and Kuskokwim rivers. As we have indicated before, there are three Regional Advisory Councils (RAC) involved with Yukon River proposals and two RACs involved with Kuskokwim River proposals. No matter the origination of a proposal, because of the complexity, particularly of the Yukon River, each proposal affecting migratory fish will likely affect all fishers. For all of the proposals identified here, the separate RACs have substantially opposing viewpoints. Each individual RAC has been provided different information and modifications pertaining to some Yukon River proposals (FP2005-04 for example) in this cycle. Although the proposal number is the same, each RAC may be voting and taking action on proposals portrayed differently at each separate meeting. As a result, communication is lacking when the RACs meet separately and conflicts between users are unnecessarily exacerbated. The department urges that steps be taken to assist the RACs in having a meaningful role in the decisions affecting subsistence uses of fish and wildlife, such as assuring the RACs are being clearly and uniformly informed about management concerns.

Given that, the department urges that OSM consider combining the three RACs for the Yukon River to discuss and take joint actions on proposals as a single body. Similarly for the Kuskokwim River, the two RACs encompassing the drainage should meet as a combined council to discuss and take joint action on Kuskokwim River migratory fish proposals. Combined meetings of the affected RACs would be far more beneficial and ensure information provided is the same for all RAC members. Further, proposals would be discussed by all affected users and a single recommendation on proposals would provide much more clarity to the federal Interagency Staff Committee and Federal Subsistence Board than two or three completely separate responses on the same proposals. This suggested approach would be more efficient and cost effective in the long run.

Proposal FP2005-02

Existing state management plans and fishing regulations provide a reasonable opportunity for subsistence fishing and customary and traditional subsistence uses are given a meaningful priority. This proposed wording would not change management actions. However, adoption of this proposal will increase the likelihood of users believing the schedule will be relaxed earlier than managers can agree. Currently, management tools are already in place to relax the subsistence salmon fishing schedule on the Yukon River if the run strength is strong enough to do so. There was confusion in 2002 under regulations passed by the Alaska Board of Fisheries (BOF) in January 2001 regarding relaxing the subsistence schedule when Chinook salmon run strength was large enough to provide other uses above escapement and subsistence needs. The BOF addressed this issue in March 2003, and provided language necessary to relax the schedule in districts or subdistricts where commercial fishing would not occur. Relaxing the schedule is not directly related to commercial fishing as several districts and subdistricts have not had

commercial opportunity in 2003 and 2004, but the subsistence schedule was relaxed to the pre-2001 subsistence salmon fishing schedule throughout the drainage.

A similar proposal to the BOF was not adopted in January 2004. Fishery managers and users understand that the schedule will be relaxed when the inseason run strength is strong enough to do so.

Recommendation: Do not support the proposal. The department does support the Interagency Staff Committee recommendation.

Proposal FP2005-03

Currently, the State is working with Yukon River Drainage Fisheries Association (YRDFA) in collecting information on existing gear types used throughout the drainage during the next two years prior to the next BOF regulatory cycle. The Office of Subsistence Management is currently analyzing age, sex and size structure to see if there has been any change in fish size at age. A report describing this work is expected by the first of March 2005. The U.S./Canada Joint Technical Committee has a subcommittee also working on this issue. If it is determined that a gear change is necessary in the future, the state would support a river wide approach. Making a change in only applicable waters is not appropriate, nor is it practical. Additionally, if a modification in gillnet gear is necessary, the state would also work through the Yukon Panel to make changes in Canadian fisheries. There would be little benefit to the resource if Alaska fisheries changed gear, but Canadian fisheries did not.

Recommendation: Do not support the proposal.

Proposal FP2005-04

The state is very concerned about potential biological impacts caused by changes in stock composition of harvests taken by a new gear type, potential of user conflicts with a regulation that is only applicable to a patchwork of Yukon River waters, substantial difference in federal and state regulations impacting management coordination, possible increased harvests, and potential negative impacts to existing fisheries including subsistence fishers farther upriver as well as other user groups along the river (also noted in ANILCA), and meeting U.S./Canada Agreement obligations. Changing allowable gear types can result in many unforeseen impacts, which the federal analysis fails to adequately address.

The Federal Subsistence Board and the Alaska BOF carefully considered similar proposals in 2003 and 2004 and opposed them. There is nothing new in this analysis that provides substantial evidence to adopt the original or the Western Interior RAC modification of the proposal, particularly for a much larger geographic area. The department is not aware of data nor does the analysis provide data indicating that reasonable opportunity and customary and traditional subsistence uses being given a meaningful priority are not being provided by the current regulations. The current regulations for existing gear types provide for reasonable opportunity for subsistence harvest. Several Western Interior RAC members, who are proposing this regulation change, and public participants stated that Chinook salmon subsistence needs have been met at the October 2004 RAC meeting. In fact, Chinook salmon subsistence harvests have increased in District 4 in recent years. A large abundance of Chinook salmon has been available for harvest in recent years with 2 of the 4 largest runs across the border into Canada since 1981 documented in 2002 and 2004. About 50% of the Chinook salmon, and 90% of the fall chum salmon subsistence harvests drainage wide are already harvested under the existing regulatory structure in the Upper

Yukon Area. The component of the proposal to allow drift gillnets for fall chum salmon has not been adequately addressed by the RACs, public, or in the Federal analysis, which provides scant evidence for adopting a new regulation.

It was clear from Western Interior RAC members (see testimony on pages 48-49) that this proposal was submitted primarily to alleviate the "overcrowding" of drift gillnet fishermen near Koyukuk village. Numerous subsistence salmon fishers utilizing a specific portion of the river is not unique. There are several locations from the mouth into Canada where drift gillnet, set gillnet, and fish wheel sites are limited and entire villages take turns fishing these sites. This proposal is not necessary to provide for reasonable or meaningful subsistence fishing opportunity in Subdistricts 4-B and 4-C.

Although use of drift gillnets may or may not increase the overall subsistence harvest, this gear type will change the composition of stocks harvested. Stationary set gillnet and fish wheel gear likely harvest more local Chinook salmon stocks, while mobile drift gillnet gear will likely harvest more Canadian origin Chinook salmon stocks. This observation is common TEK along the Yukon River and should be appropriately accepted as the best available information. Drift gillnet gear may also shift the timing of harvest to earlier in the run than traditional gear currently in use, thus increasing the harvest of Canadian bound Chinook salmon. In addition, Federal regulations allowing the sale of subsistence caught salmon may result in increased harvest using a new gear type. All of these factors, if this proposal were adopted, would be inconsistent with the conservation of natural and healthy populations of fish and wildlife and heighten complexity of regulations.

Current regulations are based on traditional fishing patterns and gear types used; and subsistence fishing time is based on the historical gear types utilized. If a different, more efficient gear type is allowed, a fishery manager must consider decreasing overall subsistence fishing time to account for increased efficiency and changes in stocks harvested. Allowing drift gillnets in applicable waters would create a patchwork of state and federal regulations in Subdistricts 4-B and 4-C with differing regulations that may radically change traditional fishing patterns. Regulations would greatly differ between the state and federal systems and management would not be coordinated resulting in separate public news releases and potentially different state and federal fishing schedules. This would lead to confusion as to who is allowed to use which gear type, when fishing is open and where.

The federal analysis of this proposal seems at odds with the analysis presented in FP05-03 where there is an extensive discussion of the concerns associated with use of large mesh gillnets. If proposal FP05-04 is adopted, it will likely be more difficult to get public support for potential future gear changes envisioned in proposal FP2005-03 if such changes are necessary.

Concerns for potential impacts to other users, Canadian Chinook stocks, and fisheries management appear to be the reasons the Y-K Delta and Eastern Interior RACs as well as YRDFA oppose this proposal.

Recommendation: Do not support the proposal.

Proposal FP2005-05

During runs of sufficient strength, fishing time is already open seven days per week in Subdistrict 5-D. Therefore, this proposal would be completely unnecessary given that a surplus was

available to all users. During years of low fall chum salmon returns, subsistence harvests during this requested six-day period could be detrimental to meeting escapements, thereby hampering stock recovery. In addition, this proposal requests a preferential harvest for Subdistrict 5-D when the fall chum stock is weak which may require another region to further reduce their harvest. The proposal would also be inconsistent with the existing U.S./Canada agreement for border passage of fall chum salmon. The current management approach provides a flexible and responsible strategy for providing for escapement and subsistence needs. In years of low run strength fisheries managers must retain the flexibility to restrict fisheries in order to meet escapement objectives and obligations the U.S. has to Canada.

Recommendation: Do not support the proposal.

Kuskokwim Area

Proposal FP2005-06

Existing state management plans and fishing regulations provide a reasonable opportunity for subsistence fishing and customary and traditional subsistence uses are given a meaningful priority. This proposed wording would not change management actions. However, adoption of this proposal will increase the likelihood of users believing the schedule will be relaxed earlier than managers can agree. Currently, management tools are already in place to relax the subsistence salmon fishing schedule on the Kuskokwim River if the run strength is strong enough to do so. During the 2001 season the schedule remained in effect for all of June and July, as the schedule was necessary to achieve salmon escapement goals and to provide opportunity for fishers to achieve amounts necessary for subsistence. However, during the 2002, 2003 and 2004 seasons, the schedule was relaxed to allow seven day per week subsistence fishing beginning June 29, July 6 and June 20, respectively.

During the January 2004 Board of Fisheries meeting, in response to a proposal from AVCP, the Kuskokwim River Salmon Rebuilding Management Plan was amended to clearly break the link between relaxing the subsistence-fishing schedule to seven days per week and implementing a commercial fishery: *5 AAC 07.365. Kuskokwim River Salmon Rebuilding Management Plan. (c) (1) the subsistence salmon net and fish wheel fisheries will be open for four consecutive days per week in June and July as announced by emergency order based on run strength and to achieve escapement goals.* This wording provides the department guidance to manage the subsistence fishery to achieve escapement goals and gives the flexibility to relax the subsistence fishing schedule based on run abundance. Fishery managers and users understand that the schedule will be relaxed when the inseason run strength is strong enough to do so.

Recommendation: Do not support the proposal. The department does support the Interagency Staff Committee recommendation.

Proposal FP2005-07

The federal analysis for this proposal adequately addresses the documented information regarding customary and traditional use of trout by the communities of Tuntutuliak, Napakiak, Napaskiak, Oscarville, Bethel, Atmautluak, Nunapitchuk, Kasigluk, Tuluksak, Upper Kalskag, and Lower Kalskag. We concur that under the current federal and state subsistence regulations, we would not expect to see a change in harvest as an effect of this proposed regulation.

There is a finding in state regulations for the Kuskokwim area for customary and traditional use of all finfish, which includes trout. We have relatively little information about trout stocks, and have only very limited data about harvest use patterns, however. Future OSM Fisheries Resource Monitoring Program project proposals to assess the populations and subsistence harvests of trout and other resident species should be a priority in order to provide for sustainable populations and harvests of these species. As the Regional Advisory Councils consider the upcoming research priorities for the next FIS project cycles, we recommend consideration of coordinated stock and harvest assessments for non-salmon fish such as trout. Baseline information is needed, as well as monitoring to assess potential changes and ensure that the resource and harvests will be fully sustainable. These issues can also be considered when FIS develops a strategic research plan for this part of the state.

Recommendation: Support the proposal.

Proposal FP2005-08

The federal analysis for this proposal adequately addresses the documented information regarding customary and traditional use of trout by the communities of Aniak, Chuathbaluk, and Crooked Creek. We concur that under the current federal and state subsistence regulations, we would not expect to see a change in harvest as an effect of this proposed regulation, as modified by federal staff.

The department's comments are similar to those for Proposal #7. There is a finding in state regulations for the Kuskokwim area for customary and traditional use of all finfish, which includes trout. Although there are recent FIS-funded project data regarding harvest use patterns, we have no information about trout stocks. Future OSM Fisheries Resource Monitoring Program project proposals to assess the populations and subsistence harvests of trout and other resident species should be a priority in order to provide for sustainable populations and harvests of these species. As the Regional Advisory Councils consider the upcoming research priorities for the next FIS project cycles, we recommend consideration of coordinated stock and harvest assessments for non-salmon fish such as trout. Baseline information is needed, as well as monitoring to assess potential changes and to ensure that the resource and harvests will be fully sustainable. These issues can also be considered when FIS develops a strategic research plan for this part of the state.

Recommendation: Support the proposal.

Bristol Bay Area

Proposal FP2005 - 09

This proposal seeks to eliminate the requirement to obtain a federal subsistence permit to harvest char. In December 2003 the Alaska BOF agreed to eliminated the recording of trout and char harvested on state subsistence salmon permits in Bristol Bay. This would align state and federal regulations for char but not rainbow trout.

Recommendation: Support the proposal.

Cook Inlet Area

Proposal FP2005-10

This regional proposal would establish limits on the amount of customary trade allowed for salmon harvested by subsistence fishers in the Cook Inlet Area. The department fundamentally does not support regulations authorizing customary trade of salmon where the customary nature and levels of trade have not been demonstrated in the regulatory record. Given the past adoption of such regulations by the Federal Subsistence Board, however, the state does generally support restrictions in the amount of fish or dollar values allowed to prevent abuse and commercialization of the practice.

It is unclear how the proposed limits would be assessed, because customary trade between rural residents would not have a reporting requirement.

Recommendation: Do not support the proposal.

Prince William Sound Area

Proposal FP2005-11

This proposal requests a determination for customary and traditional use of eulachon for residents of Cordova in the Bering River Area. Further contact by the federal Office of Subsistence Management clarified that the communities of Chenega Bay and Tatitlek were also seeking these determinations.

The department notes that the federal analysis of this proposal adequately addresses documented customary and traditional uses of eulachon in this area for residents of Cordova. However, the analysis does not provide documentation to substantiate such use by the other two communities.

Recommendation: Support the original proposal.

Proposal FP2005-12

This proposal requests determinations for customary and traditional use of eulachon for residents of Cordova in the Copper River Delta. Further contact by the federal Office of Subsistence Management clarified that the communities of Chenega Bay and Tatitlek were also seeking these determinations.

The department notes that the federal analysis of this proposal adequately addresses documented customary and traditional uses of eulachon in these areas.

Recommendation: Support the proposal as modified to include all three communities.

Proposal FP2005-13

This regional proposal would establish limits on the amount of customary trade allowed for salmon harvested by subsistence fishers in the Upper Copper River District. The department fundamentally does not support regulations authorizing customary trade of salmon where the

customary nature and levels of trade have not been demonstrated in the regulatory record. Given the past adoption of such regulations by the Federal Subsistence Board, however, the state does generally support restrictions in the amount of fish or dollar values allowed to prevent abuse and commercialization of the practice.

It is unclear how the proposed limits would be assessed, because customary trade between rural residents would not have a reporting requirement. We note the RAC does propose amending the proposal to require reporting customary trade between rural residents.

Recommendation: Do not support the proposal.

Proposal FP2005-14/15

These proposals would revise the determination of customary and traditional uses for salmon in the Chitina Subdistrict (#14) and the Glenallen Subdistrict (#15) for the community of Chickaloon.

The department notes that the federal analysis of this proposal adequately addresses documented customary and traditional uses of salmon in these areas.

Recommendation: Support the proposal.

Yakutat Area

Proposal FP2005 – 16

This proposal would eliminate the requirement for qualified federal subsistence users to obtain both federal and state subsistence permits for Situk River steelhead, requiring users to apply for just one permit, from the State.

In cases where the state and federal regulations are aligned, it benefits the user and the regulatory agencies to issue one permit that works for both federal and state rules. This is also simpler and more reliable for reporting harvest. However, in this case the federal rules for federally qualified users on federally managed lands and waters differ in a number of respects from conditions on the state permit. These include gear type, use of bait, annual guideline harvest limit, and weekly reporting. Thus we conclude, as does the federal staff analysis, that separate Federal and State permits are needed in this case. The state considers permit coordination issues on a case-by-case basis.

Recommendation: Do not support the proposal. Concur with federal staff analysis and Interagency Staff Committee recommendation.

Southeastern Alaska Area

Proposal FP2005 – 17

This proposal would change the notification and reporting requirements for taking of fish in waters within Federal jurisdiction, for traditional or religions ceremonies that are part of funerary or mortuary cycles.

The federal staff analysis for this proposal provides current and accurate information. We share the concern that fisheries managers need the opportunity to coordinate with requestors to ensure that the harvest and subsequent reporting will successfully support sustainable salmon resources.

Recommendation: Do not support the proposal.

Proposal FP2005 - 18

This proposal would allow subsistence fishing with rod and reel within 300 feet of a fish ladder unless marked.

State sport fishing regulations currently allow this activity. Proposal 18 would change the federal regulations by providing comparable rules for federally qualified subsistence users, as noted in federal staff analysis. We note however that the proposed change would shift but not eliminate the difference between federal and state regulations. Specifically, federal harvest limits would not be the same as in the State sport fishing regulations, which for salmon are six fish per species, per day except for king salmon. Federal harvest limits may also change as a result of action that the Federal Subsistence Board may take on other proposals. Also, under subsistence regulations for the state, rod and reel gear is not allowed in most areas, nor is fishing allowed within 300 feet of a fish ladder or other structure.

We have found that the department's data regarding customary and traditional fishing are at a broader scale than would be relevant to this proposal. Thus, we have no information to assess whether fishing at fish ladders is part of customary and traditional use patterns.

Because most of the 50+ Southeast fish ladders are moderately difficult to access and are on federally managed lands, it is likely that most federally qualified subsistence users previously have been using state sport fishing regulations if they have fished with rod an reel within proximity of a fish ladder. Having a new federal subsistence regulation would allow these same fishers to conduct their fishing activities under that rule rather than state sport fishing rules. Thus, in some areas the harvest could remain similar to that at present. However, because the limits are higher under proposed federal rules for salmon, and may change as previously mentioned, we further note that there could be increased overall harvests in some sites with fish ladders.

We request that the Forest Service look closely at the harvest potential for this proposed rule at all fish ladders, and develop a means to monitor the harvest to ensure that more sensitive sites would be managed. If necessary, the Forest Service would need to promptly close and post sites to ensure that enough fish would pass upstream to meet management goals. In cooperation with this assessment, State fishery managers would provide background and input, as well. We consider that it would be clearer to use the substitution language proposed in the federal staff analysis, stating that the marked site would be "posted by the USDA Forest Service".

Recommendation: Neutral.

Proposal FP2005 – 19

This proposal would specify the list of legal gear in federal regulation for subsistence fisheries in the Southeastern Alaska Area.

The current list of allowable gear types is closely similar to the state's list. The advantage of that approach is that local fishery managers maintain flexibility to specify gear types in different watersheds. State fishery managers in southeast Alaska currently seek and consider public information such as local Advisory Committee input when specifying and adjusting gear types as appropriate for subsistence uses in specific locations.

In contrast, this proposal would generally delete possible gear types from the statewide list. We consider that it is unnecessary to do this given that managers continue to have flexibility to specify gear by areas and species. A drawback to having different basic gear lists in federal and state regulations is that it leads to further regulatory divergence and complexity of subsistence users. Although either approach can be used effectively to specify allowable gear, it is problematic to require user to compare substantially different list in states and federal regulations.

The proposal may highlight that subsistence harvests under federal regulations are in fresh waters where some gear types are not practical. If so, it seems inconsistent that the proposed language would include gill nets, which are not further defined. In most waters under federal regulation, gill nets would be impractical to use. In marine waters, under state regulations, drift gill nets account for more than 80% of the subsistence harvest in the terminal areas while set gill nets generally are not allowed. Because this proposal includes fewer gear types than the state list, it appears to limit the options for federally qualified subsistence users. The one additional gear type on the proposed federal list is rod and reel.

In sum, this proposal offers substantially divergent, generally more restrictive provisions in federal regulations compared with state subsistence regulations. It would also increase the burden on the public to assess the differences in state and federal lists for subsistence fishing gear types.

Recommendation: Do not support the proposal.

Proposal FP2005 – 20

The original proposal would allow the use of a handline to take salmon in the Southeastern Alaska Area. The proposal was modified to allow the use of a handline to take steelhead. This was not addressed in original federal staff analysis.

Under state permits for subsistence fishing, the handline gear type is not specified but can be added on a case-by-case basis. This proposal requests a specific type of handline with one treble hook, which is known to be traditionally used for a selective form of fishing in freshwater. We note that the federal staff analysis of this proposal accurately states that the federal and state regulations are not identical at this time, nor would this proposal align them. We also concur with the statement in the analysis that it is not necessary at this time to address this gear type in the Stikine River.

This proposal does not appear to pose a potential conservation concern for salmon, as noted in the federal staff analysis. However, the staff analysis does not address the effects of this proposal on steelhead, a species that was added during the SE RAC meeting. The history of steelhead

declines and subsequent conservation measures in Southeast warrants careful consideration of any changes to harvest regulations. The effects of adding gear types that increase harvest potential of steelhead in small drainages presents conservation concerns that were not addressed in the staff analysis. The department recommends that such information should be fully considered as part of the public process prior to regulatory action. Therefore we recommend that the proposal revision regarding steelhead be deferred until the next regulatory cycle.

Recommendation: Neutral on the original proposal for salmon. Defer action at this time for steelhead.

Proposal FP2005 - 21

This proposal seeks to provide additional harvest opportunity for all fish species by allowing federally qualified users who have taken annual harvest limits under Federal regulations to continue to harvest fish as provided under state sport fishing regulations. We support the intent of the original proposal.

The SE Regional Advisory Council modified this proposal to allow for duplicate Federal and State subsistence harvest limits to be accumulated. The harvest limits currently in place are intended to be liberal thus providing efficiency and flexibility to individual harvesters. This modification carries sweeping effects to all subsistence fisheries region wide. If this regulation were adopted as proposed by the RAC, the state would likely have to re-consider harvest limits in state managed subsistence fisheries for both sockeye and coho salmon in order to ensure that harvests occurring at numerous small systems are sustainable.

Recommendation: Support the intent of the original proposal and support the Interagency Staff Committee Recommendation. Do not support the proposal as modified by SE RAC.

Proposal FP2005 – 22

This proposal addresses incidental harvest in the region's subsistence fisheries.

This proposal appears to be more restrictive than the state personal use or subsistence regulations for incidental harvest of trout. State subsistence permits, unlike federal regulations, specify fishing seasons, which helps limit incidental harvest. We appreciate that this proposal was intended to prevent potential management problems. However, there does not seem to be a conservation issue that this proposal would address at this time. Thus, the resulting divergence between state and federal regulations could be burdensome for federally qualified subsistence fishers, as noted in the federal staff analysis.

Recommendation: Neutral.

Proposal FP2005 – 23

This proposal would close targeted subsistence fishing for Chinook salmon in waters applicable to federal regulations, and set an incidental harvest limit in the region.

A virtually unregulated federal subsistence fishery for Chinook salmon currently exists under federal regulations and poses a potential threat to the conservation of the region's small Chinook salmon stocks. This proposal is a reasonable response to the conservation issue posed by current regulations.

In the Southeast region, the size of the particular Chinook salmon stocks that are in waters applicable to federal regulations is very small. For example, the King Salmon River stock has an escapement goal of only 120 to 250 fish. Actual escapements have been as low as 117 fish in 2003. Even the larger stocks, with the exception of the Taku and Stikine, are still relatively small, with escapement goals between 500 and 2,000 spawners. Obviously, such small stocks are susceptible to over harvest, especially in river, where spawning fish are congregated and very susceptible to harvest.

This proposal would align federal regulations with state regulations. It also provides incidental harvest limits that align with most state sport fishery and personal use fishery limits. The state's subsistence rules for incidental harvest are less restrictive, but it is important to note that those rules apply to marine waters and not to fresh waters, where individual stocks are more vulnerable to over harvest. Although the state generally voices concern about divergent regulations, this particular case highlights the corresponding differences between marine and freshwater environments, in this case, protecting the spawning stocks in streams.

Modifications could address the Stikine River or other exemptions as needed.

Recommendation: Support the proposal.

Proposal FP2005 – 24 & 26

These proposals seek to clarify possession and annual household harvest limits that are not currently defined in federal regulations, for sockeye salmon stocks (Proposal #24) and for pink and chum salmon stocks (Proposal #26).

The proposal for sockeye salmon (Proposal #24) provides consistency with harvest limits specified by state subsistence permit, which in turn benefits the management and conservation of these fishery resources.

As noted in the federal staff analysis for Proposal #26, any future conservation issues for pink or chum salmon can be addressed through coordination with the state fishery managers and in season management actions. Conservation issues for pink or chum salmon, however, are unlikely as only a small harvest in now occurring. This specific proposal does present a divergence from state regulations that specify limits, however state limits are intended to be liberal for these species.

There remains the issue of whether a state subsistence permit can be used in the federal subsistence fishery. In this case where the federal subsistence fishery provides an additional gear type, there may be two options. The federal program can issue a separate permit. Alternatively, state and federal managers can work together to potentially develop a single permit that specifies the distinction between the state and federal regulations. The state considers these permit coordination issues on a case-by-case basis.

Recommendation: Support Proposal #24 as modified by Interagency Staff Committee; Neutral on Proposal #26 as modified by the ISC.

Proposal FP2005 - 25

The Department submitted and supports this proposal to remove the closure for non-Federally qualified users in Bay of Pillars drainages.

During the 2000/2001 regulatory cycle, the Federal Subsistence Board prohibited non-Federally qualified subsistence users from harvesting sockeye salmon in Pillar Bay drainages, along with Falls Lake and Gut Bay streams. Because there were questions regarding sockeye salmon stock status at the three locations, a stock assessment project, funded by the Office of Subsistence Management (OSM), was conducted for Kutlaku Lake sockeye salmon during 2002 and 2003. The project fieldwork has now been completed and data from the study are available.

This most recent, best available escapement estimate from the Kutlaku Lake project contributes substantially to help answer current questions about this stock. The escapement estimate from 2003 indicated 7,500 to 9,000 sockeye entered the system. When viewed with past harvest and escapement information, data from this project strongly support that the degree of harvest from federal subsistence and other uses is proportionally low relative to escapement and well within the range of sustainable use. This also includes a potential projected small increase in harvest that may result from adopting this proposal. Other uses should be provided when a harvestable surplus is available.

The state approaches these situations conservatively and provides for subsistence and other uses when a harvestable surplus is available. The state will continue to monitor harvest information by all users, as well as coordinate with federal land managers. The state and federal staffs, working with the public, can resolve potential user conflicts in state marine waters or on federal lands. The department notes that support from OSM funds had been key in getting the information needed to evaluate current sockeye escapements. Another source of information will be available annually, beginning in 2005, when freshwater logbooks will be required to show guided sport harvest as part of implementing the new guide licensing law.

Additional harvest information and a summary of the stock assessment work conducted at Kutlaku Lake are also available in a handout titled "Supplemental Materials for FP05-25".

Recommendation: Support the proposal.

Proposal FP2005 – 27

This proposal would remove the annual harvest limit for coho salmon and delete the prohibition on retaining incidentally caught trout and sockeye salmon outside Section 3-A, 3-B, and 3-C.

All coho fisheries in the region have a season and annual limits under state subsistence regulations, and stocks are healthy. The Alaska Board of Fisheries had previously aligned state regulations with the federal regulations that would diverge again if this proposal were adopted. We note that harvest data suggest that most fishers are obtaining fish using rod and reel in marine waters, under state sport fishing regulations or by retaining some of their commercial catch. Proposal #27 would standardize the federal rules throughout the region, as noted in the federal

staff analysis, while diverging from the state subsistence permits regarding the annual harvest limit. For the immediate future, the state will monitor harvest trends in the coho subsistence fishery as reported on the permits but will retain annual limits at the discretion of area management biologists. When regulations by the Alaska Board of Fisheries providing for a subsistence coho fishery in state managed waters were adopted, there was a concern with potentially excessive harvest of the many small coho salmon systems. Annual limits do help to alleviate those concerns until harvest patterns are better understood.

We recommend an alternative approach to this proposal. If the current federal subsistence regulations for coho salmon outside of Sections 3A, 3B, and 3C were also extended to Prince of Wales Island, they would align the annual limits throughout Southeast with state subsistence fishing regulations. The department would support this coordinated approach to state and federal regulations.

Although the State does not limit incidental harvest of trout and Dolly Varden in the subsistence salmon fisheries there are two important distinctions between State and Federal regulations in this regard: 1) the State does not allow a directed subsistence fishery for these species (so there is no confusion between 'targeted' and 'incidentally' caught trout and Dolly Varden), 2) and defined seasons apply in State salmon fisheries while federal regulations are year-round. Federal staff has clarified that incidental subsistence harvest of trout and Dolly Varden taken with rod and reel gear will be limited to state sport fishing bag limits.

Without defined fishing seasons there is concern about the levels of incidental harvest of trout and Dolly Varden that would occur under the federal salmon regulations. Further, because existing Federal regulations also provide for directed harvest of trout and char, the resulting harvest potential for incidentally caught trout and char could far exceed the opportunity provided for 'targeted' trout and Dolly Varden harvest limits. Repealing the incidental harvest provisions, combined with a year-round federal fishing season, raises conservation concerns and may result in enforcement problems.

Recommendation: Do not support proposal as written; would support coho modification as noted above.

Proposal FP2005 – 28

This proposal would liberalize steelhead subsistence harvest regulations region-wide.

Creation of a region-wide subsistence fishery for steelhead, rather than continuing fisheries based on specific community C&T findings, represents a step backwards in the application of the ANILCA subsistence priority. ANILCA does not authorize subsistence fishing that is not customary and traditional. The harvest and usage data available to the Board does not support a finding that subsistence uses by all rural Southeast Alaska residents of all steelhead stocks in Southeast Alaska is customary and traditional. While the Board's initial region-wide findings for stocks and populations may have been understandable as a way of not precluding some customary and traditional uses, now that community-specific findings have been adopted, there is no legal or factual justification for a region-wide subsistence fishery in this case.

The department has several concerns with this proposal. These include conservation concerns for small spring and fall steelhead stocks created by the increased harvest potential, lack of current data to evaluate impacts on stocks if the proposal is adopted, and the broad geographic scale of

this proposal. Both Federal and State staff have expressed similar concerns in past regulatory cycles related to proposals to liberalize steelhead regulations on PWI.

The department supports providing subsistence harvest opportunity for steelhead where the uses are part of a traditional and customary pattern and where stocks can support the harvest. Where harvestable surplus is sufficient, other uses can also be provided. The limited information in the federal staff analysis reflects that there is a substantial need for community-specific information about subsistence uses of steelhead. Proposals focusing on specific areas and drainages where there is a question regarding harvest opportunity would more properly address specific stock and subsistence harvest assessments concerns. This could help provide the basis for project requests for cooperative research and local involvement in areas of concern. The resulting information would then be directly useful in crafting regulatory provisions that address customary and traditional use patterns, conservation concerns, and other uses where harvestable surplus is sufficient.

Most steelhead stocks in the region are small (of the 271 known steelhead streams in southeast Alaska, 205 are estimated to have annual escapements of 100 or fewer adult steelhead) and therefore susceptible to declines from over harvest. Following an extensive literature review, consultations with researchers from west coast states and British Columbia, and an extensive public review process, the Alaska Board of Fisheries substantially restricted the harvest in the Southeast sport fishery to rebuild steelhead stocks. Prior to the 1994 regulatory restrictions, sport fishing harvest regulations were associated with declines in steelhead populations. Since that time, available stock assessment programs do not indicate a clear trend in abundance. The regional harvest potential that would be created for steelhead under the proposed regulations is a concern because we know from the recent past that over harvesting can occur. Specific information on Southeast steelhead conservation regulations is included in the paper entitled "Regulatory History and Stock Status of Trout in Southeast Alaska".

The Federal staff analysis has yet to fully address our concerns. The modified proposal adopted by the SE RAC would have a season starting date of January 1, which would expose fall steelhead stocks to harvest. Fall stocks are more susceptible to over harvest because the fish hold in freshwater longer (6 to 8 months). Also fall runs occur in only a handful of streams in SE Alaska and they are known to have fewer numbers of spawners than spring steelhead stocks. The staff analysis recognizes that this proposal could potentially expose fall stocks to over harvest, and suggests modifying the proposal to limit the season dates to protect fall stocks. This proposal's effect on small steelhead stocks is especially important because few stocks numbering more than 200 fish are known to occur in SE outside of PWI. The analysis does not address our concerns for the effect on small spring stocks, its impact to other fisheries, or it's broad geographic scope.

In past regulatory cycles, members of the FSB expressed concern with the lack of data on which to base a decision for PWI steelhead and asked staff to collect better information. The availability of data on steelhead harvest and stocks is as limited now for areas outside of PWI as it was in the past for the PWI area. In addition, the primary new information available since the December 2002 FSB meeting – a key respondent survey on PWI conducted by ADF&G Subsistence Division – calls into question the validity of using PWI steelhead subsistence permits to assess subsistence harvests. This heightens our concerns for both the existing PWI subsistence steelhead fishery and for the expansive scope of this proposal if adopted. It would be problematic to monitor and manage harvests of a region-wide steelhead subsistence fishery without first addressing the harvest assessment issues that came to light in the PWI steelhead fishery.

Federal and state staff both previously voiced concerns for fall stocks and small spring steelhead stocks and did not support fishing regimes that substantially liberalize opportunity on small stocks without better harvest information and stock assessment data. The latest staff analysis recommends substantially liberalizing opportunity region wide. We remain concerned that this proposal does not assure that small stocks and fall stocks would be protected from over harvest. Conservation of fisheries resources must come first. The analysis fails to explain what new information now exists that suggests stocks in Southeast can support substantially liberalized opportunity on a region wide basis.

Recommendation: Do not support the proposal.

Proposal FP2005 - 29

This proposal would require a 36-inch minimum size and a harvest limit of two per year for steelhead on Prince of Wales Island, thereby restricting subsistence opportunity to the level provided prior to the 2003-2002 Board cycle. In doing so, this proposal seeks to provide additional conservation benefits to steelhead, and reduce impacts to other fisheries, on Prince of Wales Island.

Before the SE Regional Council met in October 2002, Federal and State staff agreed that small steelhead stocks should be protected and that additional harvest opportunity proposed at the time should be directed away from fall stocks. Conservation provisions on spring and winter permits issued since 2003 provide some protection for small steelhead stocks utilizing 21 streams. However, small stocks cannot sustain the harvest opportunity provided by the new regulations. We feel that all small stocks, not just those identified on the permits, should be similarly protected. We also recommend that additional protection be afforded fall systems.

We remain concerned that existing Federal steelhead regulations and permit provisions applied to date do not assure that small stocks and fall runs are adequately protected. Please see the comments for Proposal 28, which include relevant background information as well as recommendations to obtain specific stock and harvest assessment to help determine steelhead abundance, and harvest use patterns. See also the background paper "Regulatory History and Stock Status of Trout in Southeast Alaska".

The federal analysis notes the intent of the Federal Subsistence Board that the current federal regulation be assessed after two years.

Preliminary results from a key respondent survey conducted in 2004 indicate that the current permit return system is not capturing all contemporary harvest. The study concluded that the actual harvest of steelhead is greater than the number reported on Federal permits. This suggests that the new regulations may not be providing the benefit of improved harvest reporting as originally intended, and raises our concern with the existing regulations.

Recommendation: Support the proposal with modification.

Adoption of the proposed regulations as written could unnecessarily limit harvest opportunity on larger streams thought to be able to sustain an increased level of harvest. However, we would recommend that the proposed regulations apply to all small streams on Prince of Wales Island that could not sustain increased harvest. This would protect all steelhead systems thought to support 100 or less adult spawners while maintaining harvest opportunity on large systems. Also,

we encourage the Federal Subsistence Board to support improved subsistence steelhead harvest monitoring and reporting, as well as stock assessment of steelhead on Prince of Wales Island.

Proposal FP2005 - 30

This proposal seeks to provide additional harvest opportunity for trout, char and grayling region-wide, to meet subsistence needs for these species.

Creation of a region-wide subsistence fishery for trout, char, and grayling, rather than continuing fisheries based on specific community C&T findings, represents a step backwards in the application of the ANILCA subsistence priority. ANILCA does not authorize subsistence fishing that is not customary and traditional. The harvest and usage data available to the Board does not support a finding that subsistence uses by all rural Southeast Alaska residents of all trout, char, and grayling stocks in Southeast Alaska is customary and traditional. While the Board's initial region-wide findings for stocks and populations may have been understandable as a way of not precluding some customary and traditional uses, now that community-specific findings have been adopted, there is no legal or factual justification for a region-wide subsistence fishery in this case.

In December 2000 the FSB rejected a similar region-wide trout proposal, FP01-22. At that time the federal Interagency Staff Committee and the state agreed that the proposal, which sought to increase the region-wide rainbow and cutthroat trout harvest limits and remove the existing size limits, was unsustainable and would lead to population declines. The ISC recommendation then was to mirror existing State sport fishing bag limits, harvest size regulations, and require a federal subsistence permit.

The current staff analysis does not provide any new data to justify their change in position. Significantly, the effects of removing the minimum harvest size regulations on the reproductive potential of trout populations are not addressed. Further, the analysis ignores the substantial data that led the Alaska Board of Fisheries to enact the existing conservation measures protecting rainbow and cutthroat trout stocks in Southeast Alaska. Specific information on the conservation measures enacted by the state are provided in the paper entitled "Regulatory History and Stock Status of Trout in Southeast Alaska".

Trout and char occur in at least 5,000 water bodies spread throughout Southeast Alaska. There are valid abundance estimates or weir counts for only 43 of these waters (less than one percent). Many waters support small populations and are extremely susceptible to over harvest. Research conducted on cutthroat trout in Idaho (Rieman et al. 1989) showed that under the best conditions it could take a population of cutthroat trout about 10 years to recover when they are severely depressed. In cases with low recruitment (i.e. few young fish growing to maturity), it can take up to 50 years to recover. The Alaska Board of Fisheries recognized that region-wide liberal harvest limits (daily harvest limit of 5) were not sustainable when it enacted revised trout regulations in 1994.

The federal staff analysis fails to provide any explanation of how they can manage a region-wide subsistence fishery open to all rural residents without causing stock declines. Federal permits may provide harvest data, but given the proposed removal of the harvest size regulations and liberal subsistence harvest limits, post-season reporting may be too late to prevent stock declines. For example, Lower Wolf Lake, near Ketchikan has an estimated abundance of fewer than 200

cutthroat trout. It would not take much harvest effort, with liberalized limits and removal of the harvest size slots, to cause a decline in abundance. This lake is not appropriate for a subsistence fishery and there are hundreds, if not thousands, of similar lakes and streams in SE Alaska.

Federal managers do not have the capacity to ensure that over harvest will not occur. ADF&G has a staff of 12 biologists and fishery technicians who work primarily on trout research and 11 area biologists and assistant area biologists located throughout the region whose job it is to monitor fisheries and fish stocks. This staff, although significant, can monitor only a small fraction of the trout stocks and fisheries in the region. Federal managers have a smaller staff, but will be managing a fishery that has a much higher harvest capacity than the existing sport fishery. The state contends that under these circumstances, the proposed regulations for cutthroat trout, rainbow trout, grayling, and brook trout are certain to lead to over harvest and stock declines.

The limited information in the federal staff analysis reflects the need for community-specific information about subsistence uses of these species. Subsistence regulations should be tailored to specific areas and drainages where there is an unmet subsistence need, where the resource has the capacity to meet the need, and where federal managers can monitor fisheries and resources to ensure that sustainability of the resource. Conservation of fisheries resources must come first. This proposal puts trout, char, and grayling stocks in jeopardy and the staff analysis fails to explain what new information now exists that suggests stocks in Southeast can support substantially liberalized opportunity on a region wide basis.

Recommendation: Do not support the proposal.

Note: For questions or additional information contact Marianne See at (907) 267-2360.

Note: This report was inadvertently left out of the Federal Subsistence Board book of meeting materials. Alaska Department of Fish and Game originally presented this report at the Fall 2004 Southeast Alaska Regional Advisory Council meeting, and is applicable to proposals FP05-28, FP05-29, and FP05-30.

REGULATORY HISTORY AND STOCK STATUS OF TROUT IN SOUTHEAST ALASKA

Prepared for:

The Southeast Alaska Regional Advisory Council
Juneau

By:

The Alaska Department of Fish and Game
Division of Sport Fish
September 27, 2004

ADF&G Paper on Regulatory History and Stock Status of Trout in Southeast Alaska (Applicable to Proposals 28, 29, and 30)

INTRODUCTION

In the late 1980s and early 1990s, biologists from the Alaska Department of Fish and Game (ADF&G) became increasingly concerned that trout in Southeast Alaska were being over harvested. Angler based feedback and public comments reported lower catch rates. ADF&G closed trout fisheries by emergency order in 1991 –1993. In 1992 and 1993, ADF&G completed an extensive literature review and consulted with researchers from west coast states and British Columbia to explore trout management strategies. A public review process, including extensive public meetings and mail-out questionnaire, contributed to a revised set of regulations adopted by the Alaska Board of Fisheries (Board) in 1994.

Trout, including steelhead trout, are harvested incidentally in Southeast Alaska's commercial and subsistence fisheries and targeted in freshwater sport fisheries under State regulations. A directed subsistence fishery for steelhead has been permitted in the Yakutat area since 1997, but there was no participation until 2001. Federal rules provided for a subsistence fishery for cutthroat and rainbow trout in six areas (Baranof, Florence, Mirror, Virginia, and Wilson Lakes, and Hasselborg Lake and River) beginning in 2001, and for steelhead on Prince of Wales Island beginning in 2003.

In 2004, the Southeast Alaska Regional Council and Federal Subsistence Board will consider regulatory proposals that potentially affect trout, including steelhead. FP05-28 proposes to increase subsistence harvest opportunity for steelhead region wide. FP05-30 seeks to do the same for cutthroat, rainbow trout, char (Dolly Varden and brook trout), and Arctic grayling. The purpose of this paper is to explain the basis for concerns that prompted regulatory changes for trout in 1994, provide an overview of recent changes to sport fishing regulations, and provide a summary of the status of steelhead and cutthroat trout.

BIOLOGICAL CHARACTERISTICS OF CUTTHROAT TROUT AND STEELHEAD

Cutthroat trout occur as sea-run and resident forms in streams and lakes along the coastal range throughout Southeast Alaska and are the most common trout species in the region. Resident trout live in a wide variety of habitats, from small headwater tributaries and bog ponds to large lakes and rivers. Sea-run cutthroat trout are usually found in river and stream systems with accessible lakes, mostly south of Federick Sound. In some watersheds the two forms are found together. Resident stocks are found primarily in lakes but may also be found in some streams above barriers. Resident cutthroat do not migrate to sea like sea-run cutthroat, but spend their entire lives in fresh water. Sea-run cutthroat typically reside in lakes over winter but leave in early spring and migrate through saltwater feeding areas to streams for spawning.

Biological characteristics of cutthroat trout in Southeast Alaska put this species, compared with others targeted in freshwater fisheries, at a high risk to stock declines. Populations of resident coastal cutthroat in Southeast Alaska are relatively small compared to those found in other areas of the west coast. Median population size for lakes the department has studied is about 2,200 fish of catchable size (Bentz et al. 1996). This also does not detail the fact that there are lakes within the region of variable size. Florence and Baranof Lakes are two lakes in Southeast that have estimated average abundances that are above the median size for the region. These two

lakes will be detailed further in this report under the *stock status* section. Sea-run populations are usually smaller than resident populations. Individual fish are relatively slow growing, reaching 8 inches after 4 or more years. Recent findings at Turner Lake confirm that the larger resident cutthroat trout (>23 inches) may be as old as 15 years. Fecundity of cutthroat trout is the lowest of any trout species. Maturity studies conducted in Southeast in 1997 and 1998 found that mature females produced an average of only 259 eggs per fish. Annual survival, stemming from a combination of natural mortality experienced over winter and fishing mortality, is also low. Survival rates estimated at Turner and Baranof Lakes (1994-2003) averaged 63% and 52%, respectively.

Steelhead are found in coastal streams of Alaska from Dixon Entrance, north and westward to the Alaska Peninsula, but the majority of streams that support populations are located in Southeast Alaska. Southeast Alaska has 271 uniquely identified steelhead main stem systems which include an additional 60 tributaries flowing into these 271 systems, for a total of 331 known water bodies containing steelhead. Most populations are believed to contain 200 or fewer spawning adults. Major sport fisheries occur on larger systems such as the Naha, Karta, and Thorne rivers near Ketchikan, which support up to 1,000 spawning steelhead, and on the Situk River, which has had annual returns of 6,000 to 8,000 or more steelhead. Like cutthroat trout, steelhead trout are easily susceptible to stock declines. Ward (1996 and 2000) suggested that steelhead stocks can sustain only low harvest levels and are easily over exploited.

MANAGEMENT HISTORY

Regulations for trout have changed over the years, largely in response to increased fishing pressure. "Trout" in this section refers to regulations made for cutthroat, rainbow, and steelhead trout unless otherwise noted. The primary changes have been reduction in the bag limit, originally set in the 1940s at 20 trout, of which no more than three could be over 20 inches in length. That limit was reduced to 15 trout (1970) then to 10 trout (1975), of which no more than three could be over 20 inches in length. In 1980, the limit was reduced to 4 trout, of which only one could be over 16 inches in length. The limit was increased to five trout, with only one over 16 inches, in 1985. Prior to 1994, the use of bait was allowed year round and the possession limit was two bag limits.

Prior to statehood and through the 1960s and early 1970s, Southeast Alaska trout resources were not surveyed in any meaningful way. Local fishing lore documented in part by photographic evidence suggested that the trout resources in at least some Southeast lakes prior to statehood were exceptional compared to present day. Cutthroat trout appear to have been available in larger size and quantity relative to what resource managers were able to begin documenting in more recent years. It was not an uncommon practice to visit lakes in the region with the intent to bring home as many trout as possible. The regulations were liberal and the concept of "filling the coolers" with trout was not contrary to many looking to supply themselves with food from the land and water.

By the late 1970s, catch success in many lakes had likely dwindled such that the reduced bag limits put in place in 1980 had little effect on harvest. In 1980, the bag limit for trout in Southeast Alaska was reduced from 10 fish per day, any size, to 4 fish per day, of which only

one could be 16 inches or greater in length. The only large scale monitoring of freshwater fishing effort, catch, and harvest was the Alaska Statewide Harvest Survey (SWHS). The SWHS indicated basically no change in regional harvests of trout before and after this significant regulatory reduction. Still, when the regulation went into effect, there was a large public outcry, as anglers said it would no longer be worthwhile to travel to a remote lake to go trout fishing. Over time, anglers began to accept the reduced bag limits as a necessary tool for maintaining the trout populations.

In the late 1980s and early 1990s, ADF&G biologists became increasingly concerned that trout in Southeast Alaska were being over harvested. These concerns stemmed from research findings and perceived reduced abundance reported by members of the public and fishing guides. Trends reported in the SWHS showed a 72% increase in the number of days fished in freshwater of Southeast Alaska between the three-year averages of 1980-1982 and 1990-1992, while the number of cutthroat trout harvested in freshwater declined by 43% during the same periods (Mills 1983, Mills 1993; **Figures 1 and 2**). The number of steelhead harvested increased more than two-fold between 1977 and 1986, when a little more than 4,000 were harvested (**Figure 3**). After 1986, however, steelhead harvests declined even as the number of days fished continued to increase. Trends in effort targeting cutthroat trout and steelhead may have been masked because estimates of freshwater effort include effort that targeted other species, including salmon. Nevertheless, managers became concerned that existing regulations were not adequate to protect trout from over harvest.

These concerns prompted ADF&G to close steelhead and cutthroat trout sport fisheries by emergency order. In 1991, the Situk River was closed to steelhead retention, and Turner Lake was closed to cutthroat trout retention. The following year, 24 steelhead systems and 3 cutthroat trout lakes (Turner, Wilson, and Reflection lakes) were closed. In 1993, the department closed 48 steelhead streams to retention of steelhead and retained the restrictions on the 3 cutthroat trout lakes. ADF&G staff and the public recognized a need to evaluate existing trout regulations and to develop new management strategies and regulations to protect trout resources in Southeast Alaska while providing maximum fishing opportunity.

Development of Current Wild Trout Regulations

The following description of the development and adoption of the trout regulations is based largely on a paper published in the Proceedings of the 2004 Wild Trout VIII Symposium (Harding and Jones, *in press*).

The strategy adopted in 1992 to develop new trout regulations was to combine information collected from our trout research projects with the best management practices, then develop management options and present these options to the public for their input and preferences. We decided to continue our historic practice and keep the regulations for cutthroat trout and rainbow trout combined under one "trout regulation" because of difficulties distinguishing between the two species. Moreover, because cutthroat trout are more vulnerable to angling pressure and habitat degradation (Behnke 1992), we felt that the biological principles used to protect cutthroat trout should also serve to adequately protect rainbow trout populations. We also discussed steelhead stock status and management options at our public meetings, and new steelhead

regulations were developed concurrently with the proposed trout (cutthroat and rainbow trout) regulations.

Review of Literature and Trout Management Strategies

A review of the existing literature and contacts with other trout and steelhead managers revealed that cutthroat are the most easily caught of the trout species. Cutthroat trout are aggressive feeders and can be caught on a wide variety of gear types. They are particularly vulnerable to bait, and studies (Mongillo 1984, Wright 1992, Taylor and White 1992, Pauley and Thomas 1993) show that mortality rates for cutthroat caught and released using natural bait are as high as 48%, whereas mortalities from artificial gear (lures, flies, etc.) are lower than 5% (3,981 fish, in 16 total studies). Mortality rates for rainbow trout caught and released with bait were 28%, still much higher than artificial gear types (6.8% or 7,234 fish, in 21 total studies).

Hunt (1970) stated that size limits, if wisely applied, are the best regulations for preventing excessive harvest, because the size limit applies to every fish caught and thus can be related to specific biological parameters. Wright (1992) expanded upon Hunt in his review of the regulatory selection process for Washington State by discussing their regulation preference to protect a full age-class of female spawners. To maintain a trout population's reproductive potential, the minimum size limit should be set at a level that provides an opportunity for a full age-class of females to spawn at least once. However, because sport fishing regulations are based on length and not age-class, a minimum size limit was needed in order to protect all female trout until they reached the size at which they were mature. Males typically mature when they are somewhat younger and smaller (Downs et al. 1997), thus any minimum size limit regulation designed to protect females should adequately protect males.

Length at maturity data for Alaska cutthroat trout stocks were limited to several years of data collected during the 1960s from sea-run fish in Petersburg Creek (ADF&G unpublished data). Other sources we used in establishing our minimum size limits came from landlocked populations in Mosquito Lake in the Queen Charlotte Islands, British Columbia (Leeuw 1987) and literature on trout populations in Washington and Oregon (Wright 1992). Information from these sources suggested that a 12-inch minimum size limit would allow approximately 85% of cutthroat trout in Southeast Alaska an opportunity to spawn at least once, and a 14-inch size limit would allow nearly all fish an opportunity to spawn at least one time.

Upon completing the literature review, ADF&G Sport Fish staff agreed that the two key management issues with trout (cutthroat and rainbow) were (1) establishing an appropriate minimum size limit and (2) restricting use of bait. A minimum size limit could be effective only if hooking mortality was low, and it would be meaningless without concurrent bait restrictions; a ban on bait in fresh water was an essential element of the new regulations. Further, because Southeast Alaska has thousands of remote lakes and streams, we can evaluate abundance in only a few; therefore, the new trout regulations needed to cover a wide range of situations and levels of fishing pressure. Many of the trout populations were known to be small and unable to sustain much harvest. Thus, a minimum size limit that protected the majority of fish until they had the opportunity to spawn at least once made the most sense to ADF&G biologists.

Overview of Our Public Process

ADF&G staff held two series of public meetings throughout Southeast Alaska. In the first, we shared our concerns about declining trout populations and sought input from citizens about their opinions of the status of trout stocks in their local areas. After all input was reviewed, preferences were incorporated into draft management options, and a second series of public meetings was held. Objectives at these meetings were to garner comments on the management options and develop support for preferred management options.

During February and March of 1993, biologists from ADF&G Sport Fish held 14 public meetings in large and small communities throughout Southeast Alaska with a wide variety of groups to discuss their concerns and determine if the angling public had information and/or similar concerns for trout stocks. Additionally, we distributed over 7,000 copies of an informational leaflet briefly outlining trout life history and our management concerns in newspapers around Southeast Alaska, primarily to the smallest communities. We set up booths at each of the main boat shows in Southeast to talk with individuals and distribute the informational leaflet. The leaflet was distributed as well to everyone who reserved a U.S. Forest Service cabin at a cutthroat lake in 1992, and a questionnaire accompanied, requesting opinions on proposed management options.

Public response to our request for trout management input was generally supportive. Anglers generally concurred that there was a problem with declining numbers and/or sizes of trout. Many highlighted specific systems where they had seen declining catches and/or sizes of cutthroat trout and steelhead. At the end of each public presentation, we distributed the trout questionnaire to evaluate public opinion and solicit suggestions on potential management options.

We received 192 responses to our questionnaires. Nearly 76% of the respondents favored a 14-inch minimum size limit, and support for bait restrictions was even stronger (80%) for cutthroat trout in fresh water. Most questionnaires (81%) were from Alaska residents; 19% were from nonresidents. Responses from both groups were strongly in favor of both the 14-inch limit and bait restrictions. Over 70% of the respondents were in favor of making all sea-run cutthroat populations catch-and-release-only. Nearly 60% favored special restrictions for the 13 lakes in Southeast Alaska that are known for their trophy-size cutthroat trout.

Concurrent with the public process to develop the trout regulations, the Division of Sport Fish initiated a separate planning process to evaluate steelhead regulations and public attitudes about future management strategies. At the time, the steelhead bag limit was 1 fish per day with 2 in possession and no minimum size limit. The Commissioner of ADF&G appointed a 9-member citizen committee to make recommendations on how to manage steelhead in Southeast Alaska. Committee members included steelhead anglers from Anchorage, Yakutat, Juneau (two members), Sitka, Petersburg, Ketchikan (two members), and Prince of Wales Island. This committee developed a survey that was sent to 1,768 steelhead anglers. The list of those surveyed included all respondents to the SWHS who had fished on a steelhead system in Southeast Alaska in 1992 or 1993.

The 678 returned surveys confirmed that most steelhead anglers felt steelhead should be managed more conservatively to rebuild abundance and provide continued fishing opportunity.

When asked why anglers fish for steelhead, most answered that they liked to fish (55%) and enjoy the outdoors (35%) as prime reasons, while keeping a trophy or eating a steelhead were minor considerations (<10%). If restrictive regulations are necessary (i.e., steelhead populations continue to decline), most respondents preferred a catch-and-release-only management option (42% of the residents and 49% of the nonresidents); reducing the total harvest (daily bag limit) was a preferred (33%) second option (36% of the residents and 32% of the nonresidents). If there is a harvestable surplus of steelhead, 39% of the respondents preferred management options that include an annual bag limit (38% of the residents and 34% of nonresidents) and gear restrictions (34% of the residents and 32% of the nonresidents).

By fall 1993, the Sport Fish Division had developed a set of draft trout regulations and, through another series of public meetings, presented the management package to all communities with local Fish and Game Advisory Committees.

Adoption of new regulations

In early 1994, new trout regulations were adopted in Southeast Alaska by the Board, combining bag limits, size limits, and bait restrictions. A 12-inch minimum size limit for cutthroat and rainbow trout was implemented throughout the region to (1) provide protection for juvenile steelhead and sea-run cutthroat trout before they emigrate to the ocean, and (2) protect cutthroat and rainbow trout until the majority can spawn at least once. A larger size limit (14-inch minimum size) was adopted for areas with developed access and/or intensive fisheries, i.e., "high use." Under this more restrictive limit, all female cutthroat trout are protected from harvest until they have had the opportunity to spawn at least one time. A maximum size limit of 22 inches (fish greater than this size cannot be legally harvested) was also implemented to protect returning adult steelhead. In addition, a 10-month (November 16 through September 14) ban on fishing with bait was implemented in freshwater systems to reduce hooking mortality on trout and steelhead. The 2-month period in which bait is allowed provides anglers the opportunity to use bait when adult coho salmon are present in fresh water. A year-round bait ban was adopted in all areas where the 14-inch minimum size was implemented. More conservative steelhead regulations were adopted by the Board: a minimum size limit of 36 inches, and a bag limit of 1 steelhead per day and an annual limit of 2 steelhead trout per year.

The region wide minimum size limit provides a practical and cost-effective way to manage the numerous trout populations throughout Southeast Alaska without the need for detailed biological data on each system. However, because of diverse management situations, the Board also provided several exceptions to the region wide minimum size limit, including "high-use," "trophy" (25-inch minimum size limit), "stocked lakes," "small lakes" (9-inch minimum size limit), and "special lakes" (one catch-and-release-only lake and one lake with less restrictive harvest regulations).

Board action since new trout regulations adopted

During 1997, the Board considered thirty proposals related to trout and steelhead. There was general agreement that steelhead populations had not had time to respond to the new regulations and should be left unchanged. A concern expressed by the public was that young anglers could not use bait and were being excluded from fishing. The Board implemented a provision that

allowed each of the primary communities in Southeast to designate a nearby lake at which the use of bait would be allowed. The Board also asked ADF&G to evaluate cutthroat trout length at maturity in more lakes and report the results during the next meeting (2000).

As a result, in 1997 and 1998, Sport Fish Division funded and conducted a study on cutthroat trout length at maturity at 21 lakes throughout Southeast Alaska to evaluate whether the 12-inch minimum size limit effectively protected the majority of trout until they have the opportunity to spawn at least once. Five sea-run and 16 resident cutthroat trout populations in Southeast Alaska lakes were sampled to determine the proportion of cutthroat trout that are sexually mature within 1-inch size increments. Overall, 60% of 1,864 females sampled were mature by the time they reach 11 inches; 62% were mature at the then-current minimum regulatory size of 12 inches.

In February 2000, the Board received only 12 proposals that directly addressed trout or steelhead management in Southeast Alaska. ADF&G staff submitted a proposal to reduce the region wide trout minimum size length limit from 12 inches to 11 inches. This proposal stemmed from results of the maturity study conducted in 1997 and 1998. That work revealed that there was no significant difference between the percentage of mature female cutthroat trout at 11 inches or 12 inches. On the basis of these results, the Board adopted the department's recommended 11-inch minimum size limit.

During the 2003 Board meeting, 10 proposals dealing with trout and/or steelhead were discussed. Most sought more restrictive gear regulations in trout and salmon waters; i.e., requesting waters be made fly-fishing-only or single barbless hooks. The Board adopted an ADF&G proposal to remove a region wide regulation allowing anglers to legally harvest adipose clipped steelhead; this proposal was submitted to simplify existing regulations and eliminate the perception that hatchery fish were available throughout Southeast Alaska. The Board also adopted ADF&G proposals that requested a year-round bait closure on several anadromous lakes on the Juneau road system, and reduced the minimum size limit at Lost Lake from 11 inches to 9 inches. A public trout proposal adopted by the Board made unbaited, single hook, artificial lures the only legal gear in the Karta River drainage.

STOCK STATUS

Cutthroat Trout

The level of work completed on cutthroat trout systems in Southeast Alaska range from long-term to one-year studies, but overall extensive data is limited. Staffing and funding limitations coupled with the challenging aspects of cutthroat trout life history adds to the complexity of getting complete, regionwide information on cutthroat trout. There is a minimum of 273 *known* trout lakes ranging in size, and 350 *known* mainstem streams with 300 associated tributaries where cutthroat trout are noted in both northern and southern Southeast Alaska. Of the *known* cutthroat trout lakes, long-term (over five years) information exists for four lake systems and short-term (less than 5 years) information for 19 lakes in southeast. Estimated annual abundance across *known* cutthroat trout lakes ranged from 134 (at Helm Bay) to 14,780 (at Florence Lake) cutthroat trout. With respect to streams, information on cutthroat exists for 10 streams with the

majority of information originating from one-year studies. Only one anadromous stream, Auke Creek near Juneau, Alaska, has long-term data on sea-run cutthroat trout.

Information on cutthroat trout population trends exists for four systems in Southeast Alaska: Turner Lake, Baranof Lake, Florence Lake, and Auke Lake. In 1988, ADF&G initiated a stock-monitoring program at Turner Lake followed by work at Baranof Lake in 1994, to estimate cutthroat trout populations and sustainable harvest levels. In 1994, abundance and survival rate estimates for Turner Lake suggested that populations this population was depressed. Although cutthroat trout harvests have been prohibited in Turner Lake since 1991, there have not been noticeable increases in abundance to signify a rebounding population even though abundance appears to be stable (**Figure 4**). The average annual abundance estimated for cutthroat trout in Turner Lake is 1,961 (SD = 599, range 1,242 to 3,621). For Baranof Lake, cutthroat trout numbers have remained consistent during the study period, with the exception of an unusually low abundance estimated in 2002. On average, Baranof Lake has an estimated annual abundance of resident cutthroat trout of 6,846 (SD = 2228, range 3,387 to 12,186). For Florence Lake, consecutive abundance estimates were made from 1990 to 1994, and then again for 2002 and 2003. The average annual abundance estimated for cutthroat trout in Florence Lake is 10,895 (SD = 2,173, range 8,382 to 14,780), with the period from 1990 to 1994 having an average annual abundance estimated at 10,692 (SD = 2,510) and the period of 2002 to 2003 estimated at 11,403 (SD = 1,556). Overall, the annual abundance for Florence Lake appears to be consistent if not slightly increasing over the last two years. For Auke Lake, studies for resident cutthroat trout abundance were initiated with a pilot study in 1997. Multi-year studies yielded an estimated average annual abundance of 477 (SD = 139, range 329 to 652) resident cutthroat trout for 1999-2002. Annual abundance estimates of resident cutthroat trout in Auke Lake do appear to be level with the exception of the low estimate in 2002; however, weir information on the sea-run component shows signs for concern for this particular system. In our only long-term weir site (22 years), Auke Creek, sea-run cutthroat trout numbers increased from 1980-1990, and then experienced three consecutive years of low counts in 1991-1993 prior to the 1994 regulatory actions. In 1994 and 1995, sea-run cutthroat trout counts rose to the level experienced in 1990, peaked in 1996, and then declined through 2004 to levels half the annual average for the period 1980-2004 (**Figure 5**).

Information on the regional harvest and catch showed noticeable differences between cutthroat trout caught and harvested before and after the 1994 regulatory change taken by the Board. As expected, harvests of cutthroat trout in the sport fishery declined substantially starting in 1994. Average annual harvests following the regulatory change (1994-2002) were 66% less than harvests prior (1989-1993). Since the trout regulations went into effect in 1994, annual estimates of the number of cutthroat trout caught (includes fish harvested as well as those caught and released) averaged about 38,000 (1994 – 2002), approximately 4,800 less than the average prior to the adoption (1990-1993) (**Figure 6**). This may be reflective of reduced effort resulting from the regulatory change, and should not be looked upon as a long-term indicator of region wide trends in trout abundance. Changes in fishing effort and patterns can potentially mask or confound changes in abundance.

In summary, the limited information provided does not allow for definitive comments to be made on the condition of regionwide cutthroat trout populations. From the limited data that exists for the region, resident cutthroat trout populations seem to be constant with the exception of declines

noted at Auke Lake near Juneau and the slight increase estimated at Florence Lake. Increased residential and urban influences could be one of the explanations for the trends being recorded at Auke Creek and Lake.

Steelhead

The level of work completed on steelhead trout systems in Southeast Alaska is limited. Staffing and funding limitations coupled with the challenging aspects of steelhead trout life history adds to the complexity of getting complete and reliable, regionwide information on steelhead trout. There are a minimum of 271 *known* mainstem streams with 60 associated tributaries where steelhead trout are noted in Southeast Alaska. Of the *known* steelhead trout systems, multi-year information from fish counting weirs exists for three systems (Situk River, Karta River, and Sitkoh Creek) and snorkel surveys since 1997 exist for 13 streams. Estimated annual weir counts for steelhead ranged from 863 (SD = 458) at Karta River to 7,709 (SD = 2,783) at Situk River, and 761 (SD = 181) at Sitkoh Creek.

Information on steelhead trout population trends exists for three systems in Southeast Alaska: Situk River, Karta River, and Sitkoh Creek. Since 1995, ADF&G has operated a weir to count post-spawning steelhead (kelts) emigrating from the Situk River. Annual counts range from 6,688 (1995) to nearly 12,500 (2004) but typically range from 6,000 to 8,000 adult steelhead (**Figure 7**). The annual average count of emigrating steelhead trout is 7,709 (SD = 1990) for the Situk River for 1995-2004. For the Karta River, emigrant counts were collected for 1983, 1989, and 1992. Although the data on this system is limited and not very current, counts in 1983 and 1989 were fairly constant, 1,022 and 1,220 kelts respectively. The most recent counts in 1992 dropped to one forth of the counts taken in the 1980's. Although this is a concern without more recent counts, one cannot say much about an abundance trend for the Karta River system. For Sitkoh Creek, there is historical information on escapement counts for this system back to 1936. Although these counts are not for consecutive years, the average escapement count for steelhead trout in Sitkoh Creek is 761 (SD = 181) for years 1936-37, 1982, 1990, 1993, 1996, and 2003-2004. Overall the Sitkoh Creek steelhead counts over these years appear to remain constant with the exception of a peak of 1,108 steelhead trout in 1937 and a low of 520 steelhead trout in 1993.

Information on the regional harvest and catch showed noticeable differences between steelhead trout harvested before and after the 1994 regulatory change taken by the Board, but catch rates were variable and may not indicate a trend in abundance. Harvests of steelhead in the sport fishery declined substantially following action by the Board in 1994; annual harvests from 1994 through 1999 were 92% less than harvests (1989-1993) prior to the regulatory action. Since 1994, annual steelhead trout harvests have remained low. Between 1994 and 2002, an annual average of 220 steelhead trout has been harvested in the Southeast Alaska sport fishery. Annual estimates of the number of steelhead caught in the sport fishery are variable and although catches in Southeast Alaska between 2000 and 2002 decline they stay well within the range of annual catches for the last seven years. Annual regionwide estimates of catch more than doubled from about 10,000 in 1994 to nearly 25,000 in 2000 but has decreased to 16,000 in 2002 (**Figure 8**). The estimated freshwater angling effort (number of days fished) followed a similar trend with the number of days fished reaching 87,500 days in 1994, increasing to 106,500 days in 2000 and then declining to 101,700 days in 2002. Catch rates (number of steelhead caught per angler-day fished) over the same period ranged from 0.6 fish/day (1995) to 0.24 fish/day (1996) and

were 0.16 in 2002. The harvest decline may be reflective of reduced effort resulting from the regulatory change, and should not be looked upon as a long-term indicator of region wide trends in steelhead trout abundance. Changes in fishing effort and fishing patterns can also potentially mask or confound changes in abundance.

Sport Fish Division implemented the use of stream and snorkel survey programs in 1997 to increase the opportunity to obtain information on more steelhead streams regionwide. High staff and operational costs and logistical constraints of operating fish weirs to assess multiple stocks of steelhead were the main reasons for looking at comprehensive survey programs in the attempt to provide an index of abundance for steelhead. Staff identified populations throughout the region that, by nature of the habitat attributes and location could be practically surveyed in a repeated and consistent manner. **Table 1** summarizes the snorkel and stream survey results for 1997 through 2004. In a rough comparison, there were fewer steelhead trout counted from 2000 through 2002 in regionwide snorkel surveys, however, counts in 2003 and 2004 appear to be higher than surveys since 1997. Water, weather conditions, and budgetary constraints precluded staff from conducting as many surveys as scheduled, affected counts conducted, and reduced the number of bracketed peak counts.

In summary, how well annual peak counts of steelhead track abundance is not known. Because of the inability to consistently obtain "peak" counts rather than high counts or one-time counts during the survey year, it is sometimes difficult to compare annual surveys or relate these numbers back to actual abundance. With the limited historical information from weirs and with the problems associated with relating survey counts to actual abundance, it is difficult to make definitive comments on regionwide steelhead abundance. The snorkel surveys allow detection of gross or major changes in the population, but do not allow detection of declining trends prior to reaching levels of concern which stresses the need for conservative management on these steelhead systems. At this time, large or obvious changes in the surveyed streams have not been detected. From the few weir locations, escapement counts of steelhead appear to be constant with the exception of the Situk River, where escapement counts in 2004 were significantly higher than in 2002 and 2003.

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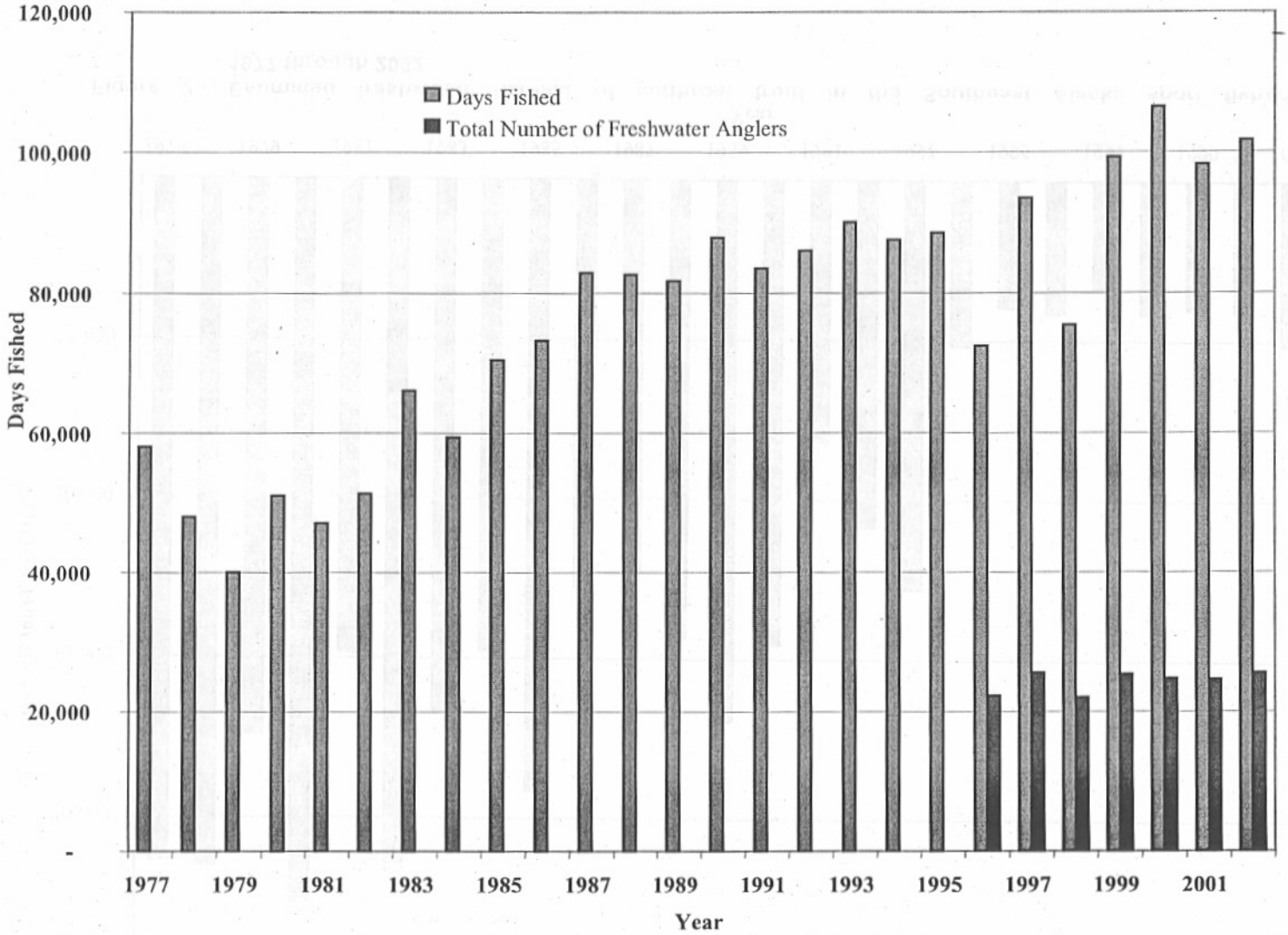


Figure 1.- Estimated freshwater fishing effort (number of anglers and days fished) in the Southeast Alaska sport fishery.

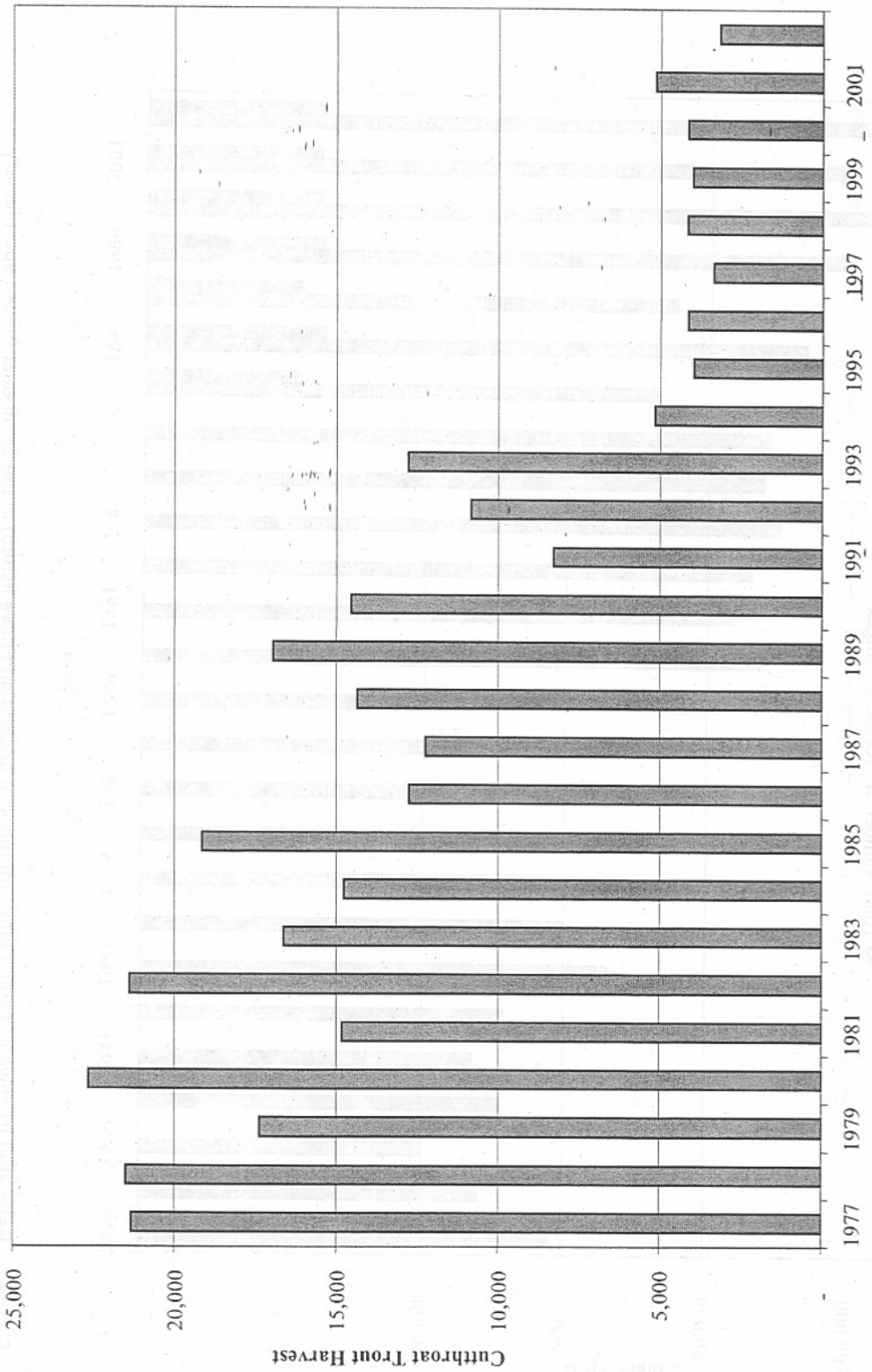


Figure 2.- Estimated freshwater harvest of cutthroat trout in the Southeast Alaska sport fishery, 1977 through 2002.

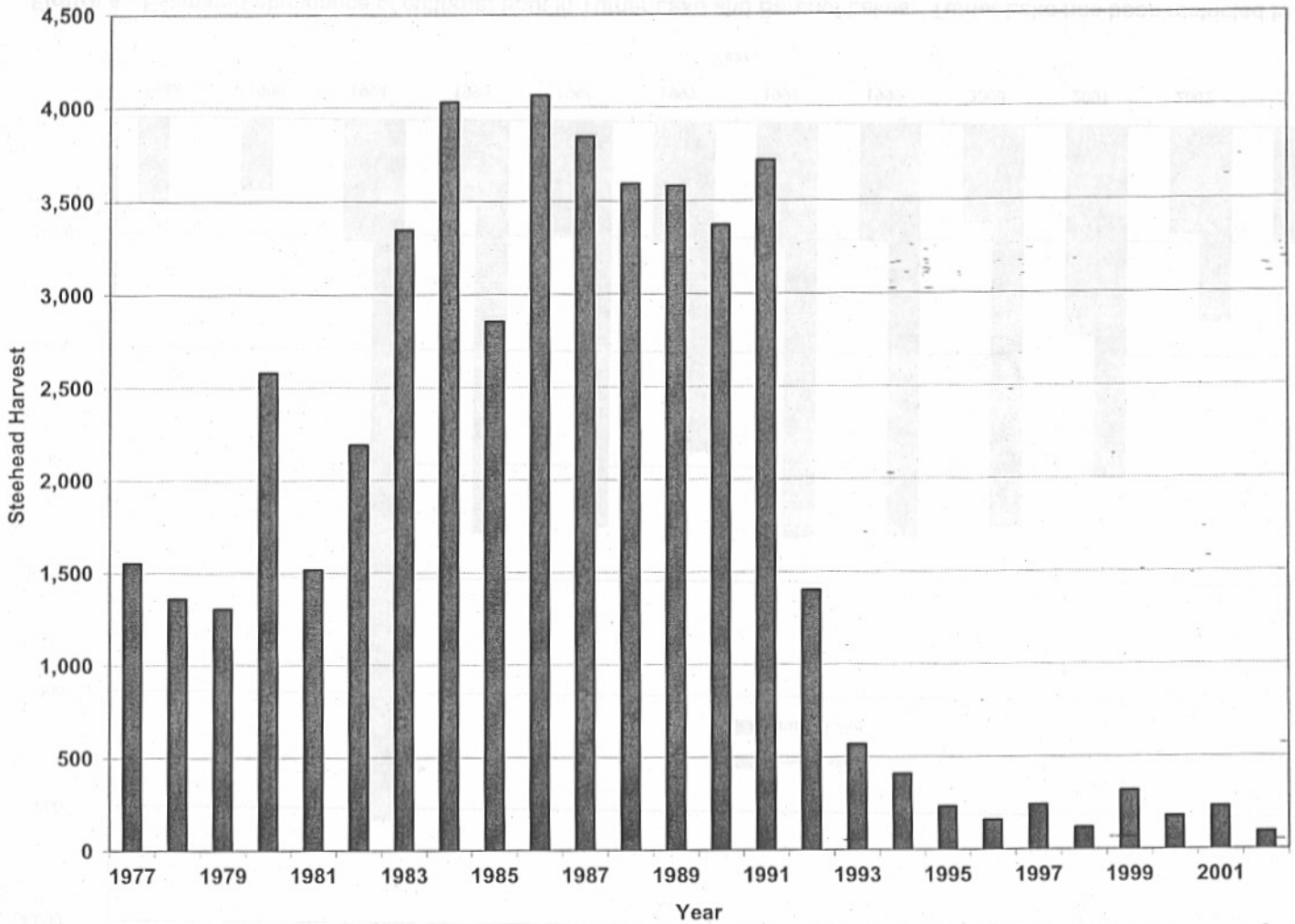


Figure 3.- Estimated freshwater harvest of steelhead in the Southeast Alaska sport fishery, 1977 through 2002.

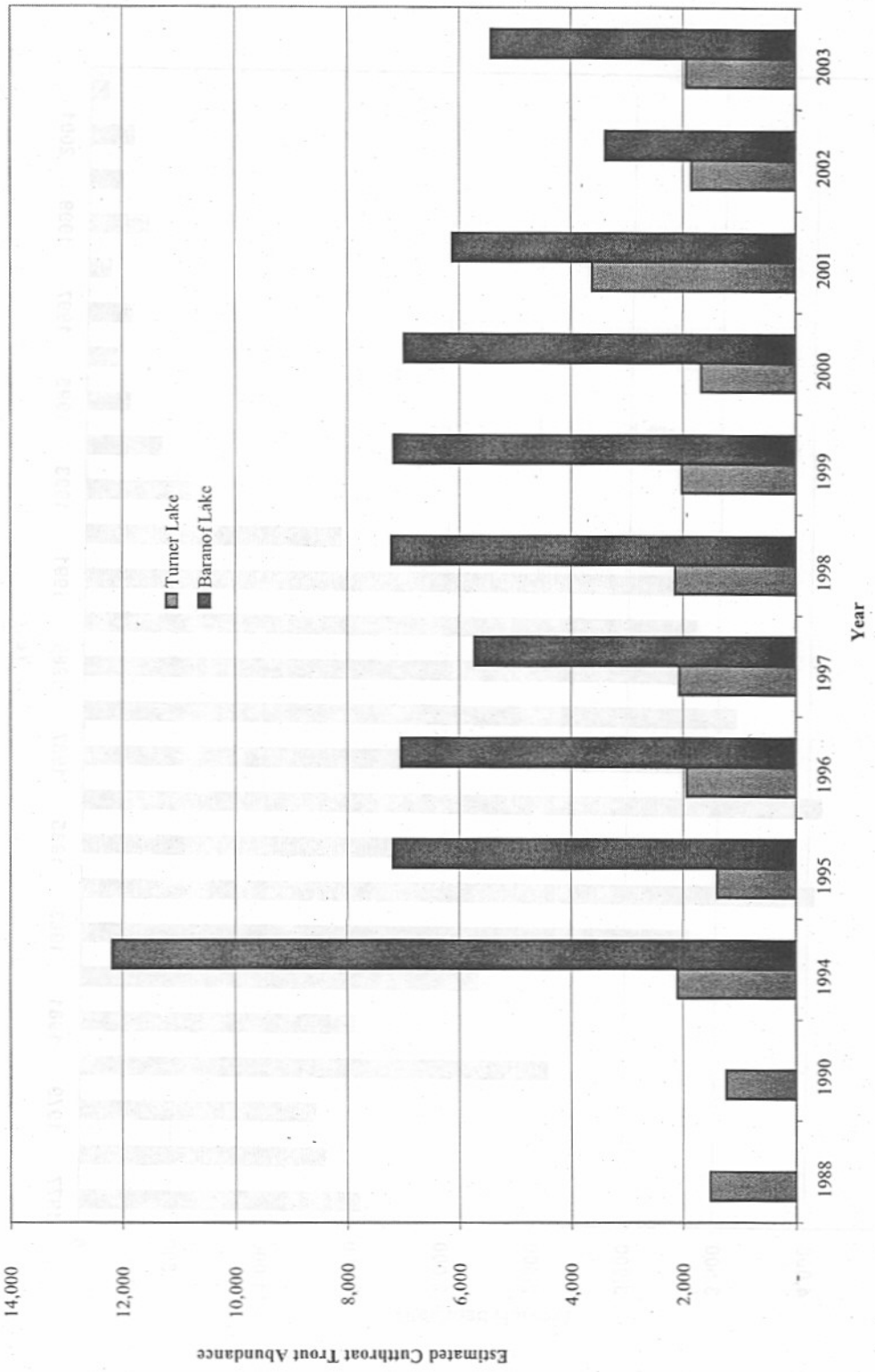


Figure 4.- Estimated abundance of cutthroat trout in Turner Lake and Baranof Lakes. Turner Lake has been restricted to catch and release for cutthroat trout since 1991.

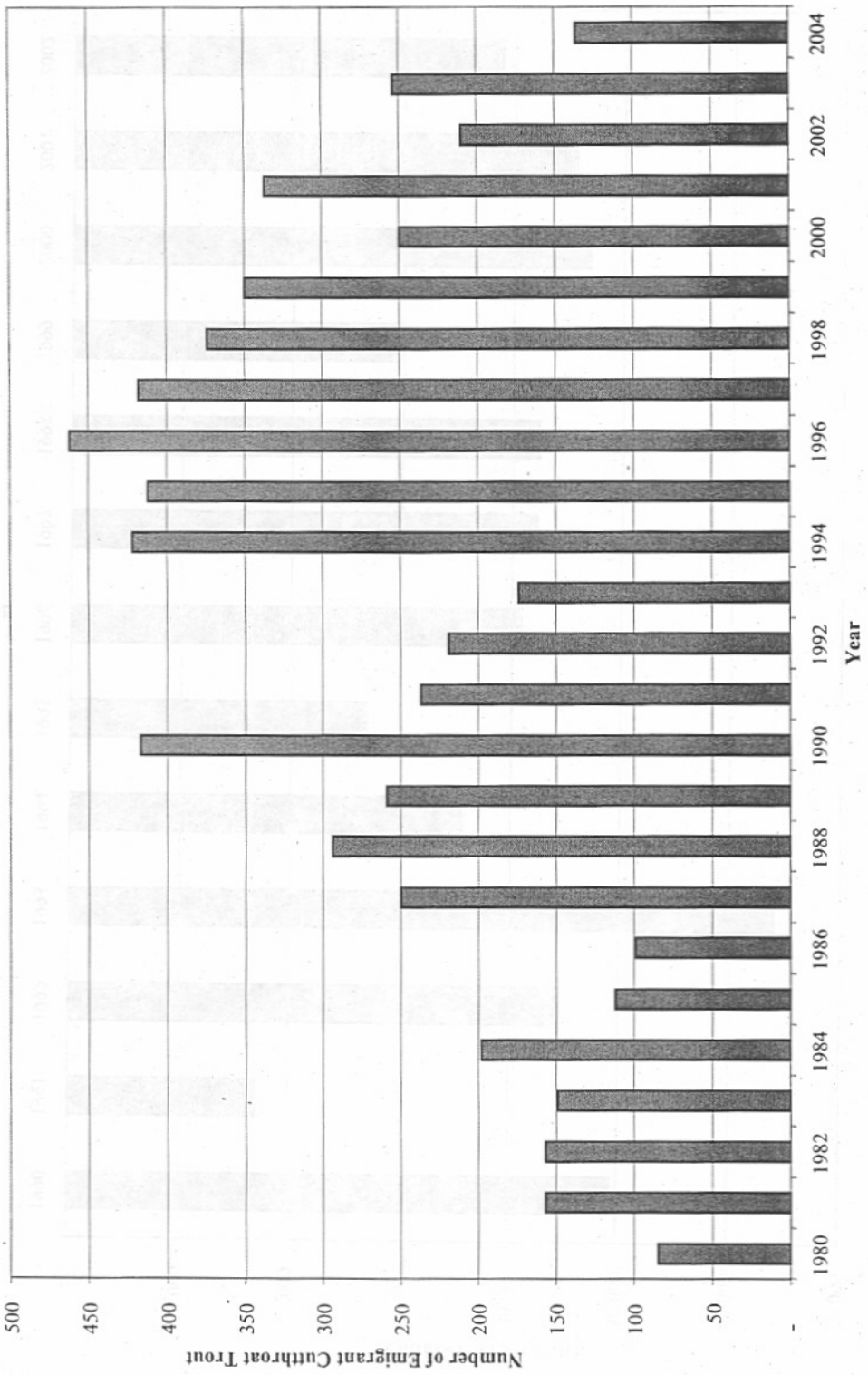


Figure 5.- Auke Creek cutthroat trout outmigration by year 1980-2004.

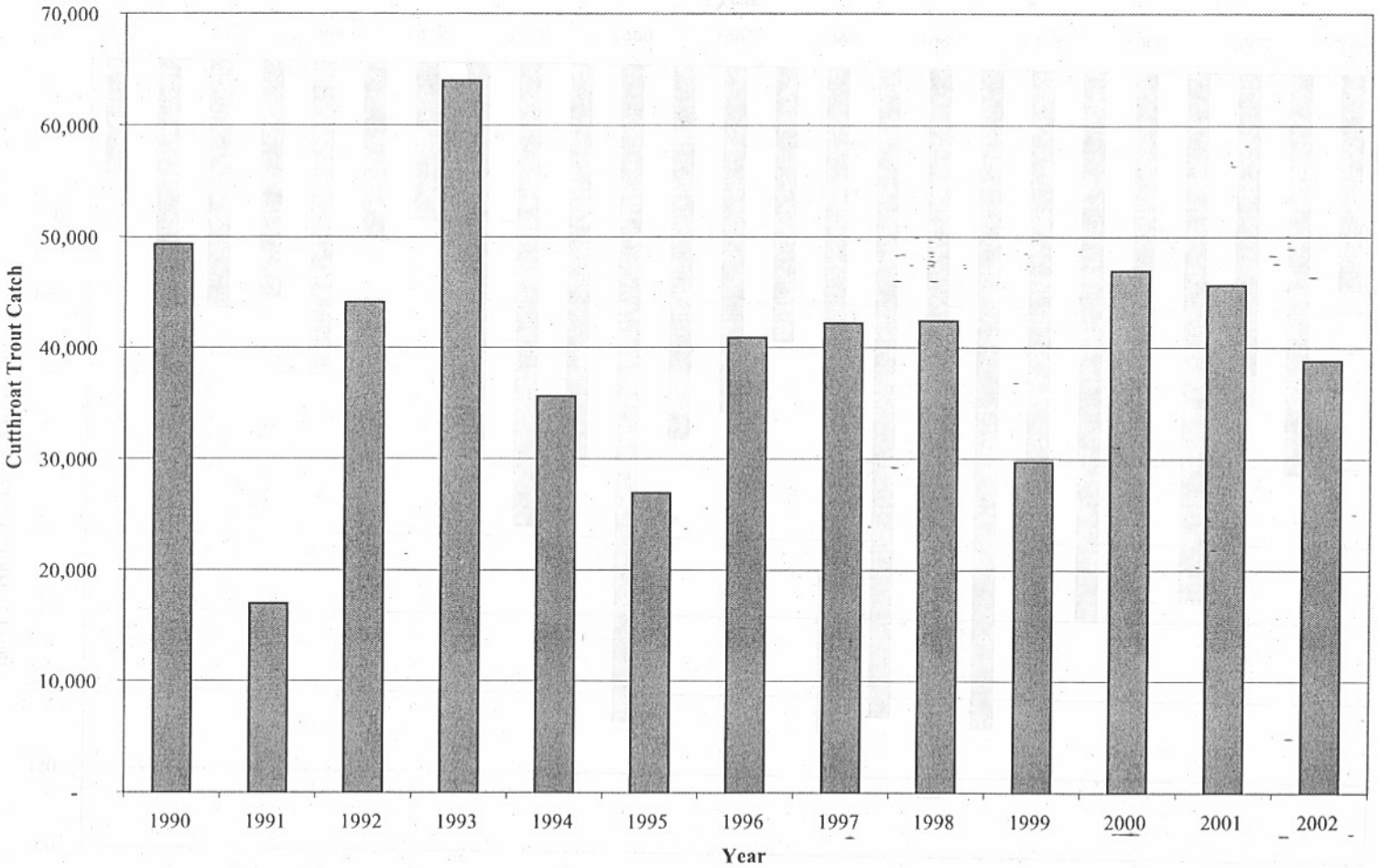


Figure 6.- Estimated freshwater catch of cutthroat trout in the Southeast Alaska sport fishery, 1990 - 2002.

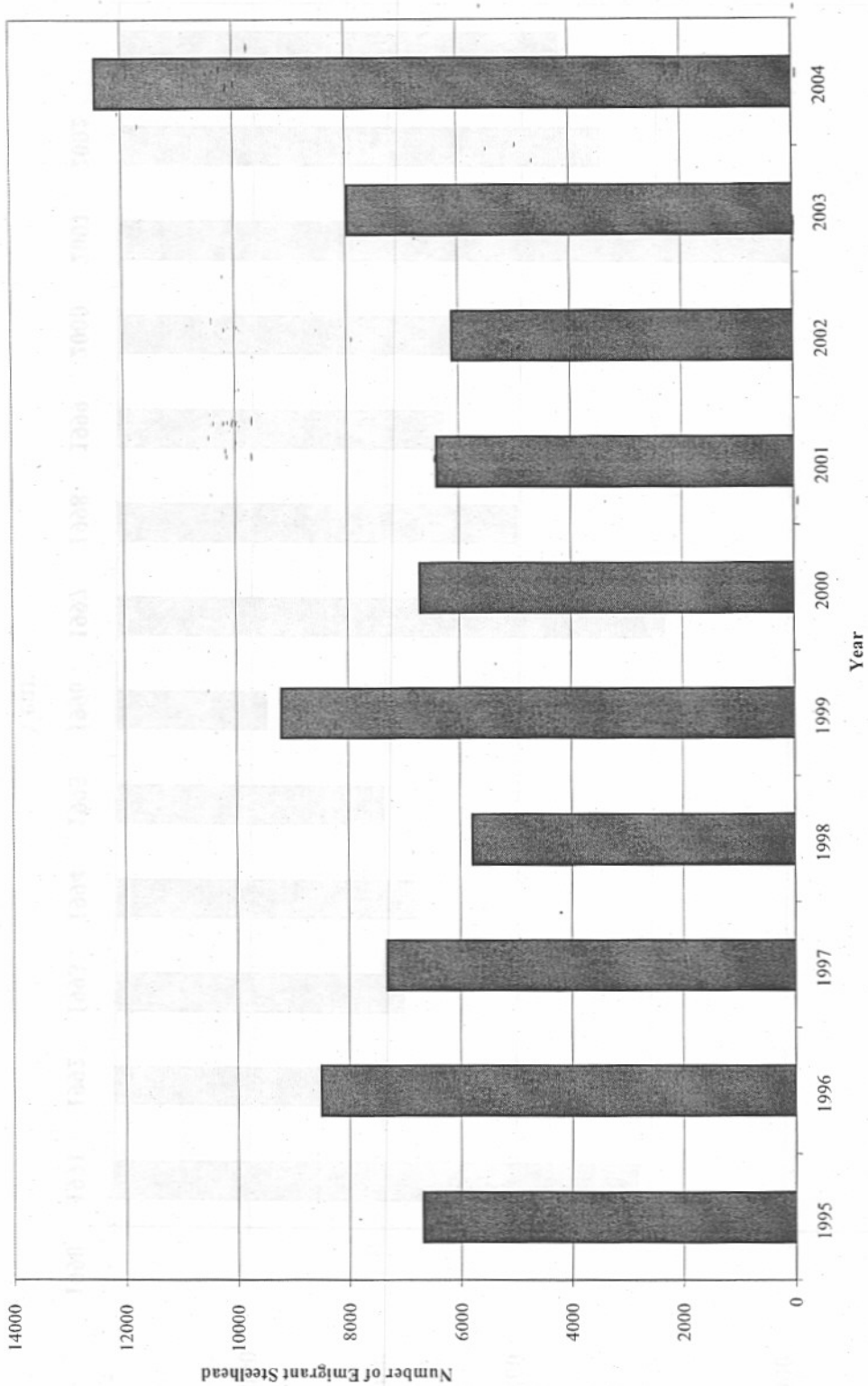


Figure 7.- Annual counts of emigrant steelhead at the Situk River weir, 1995-2004.

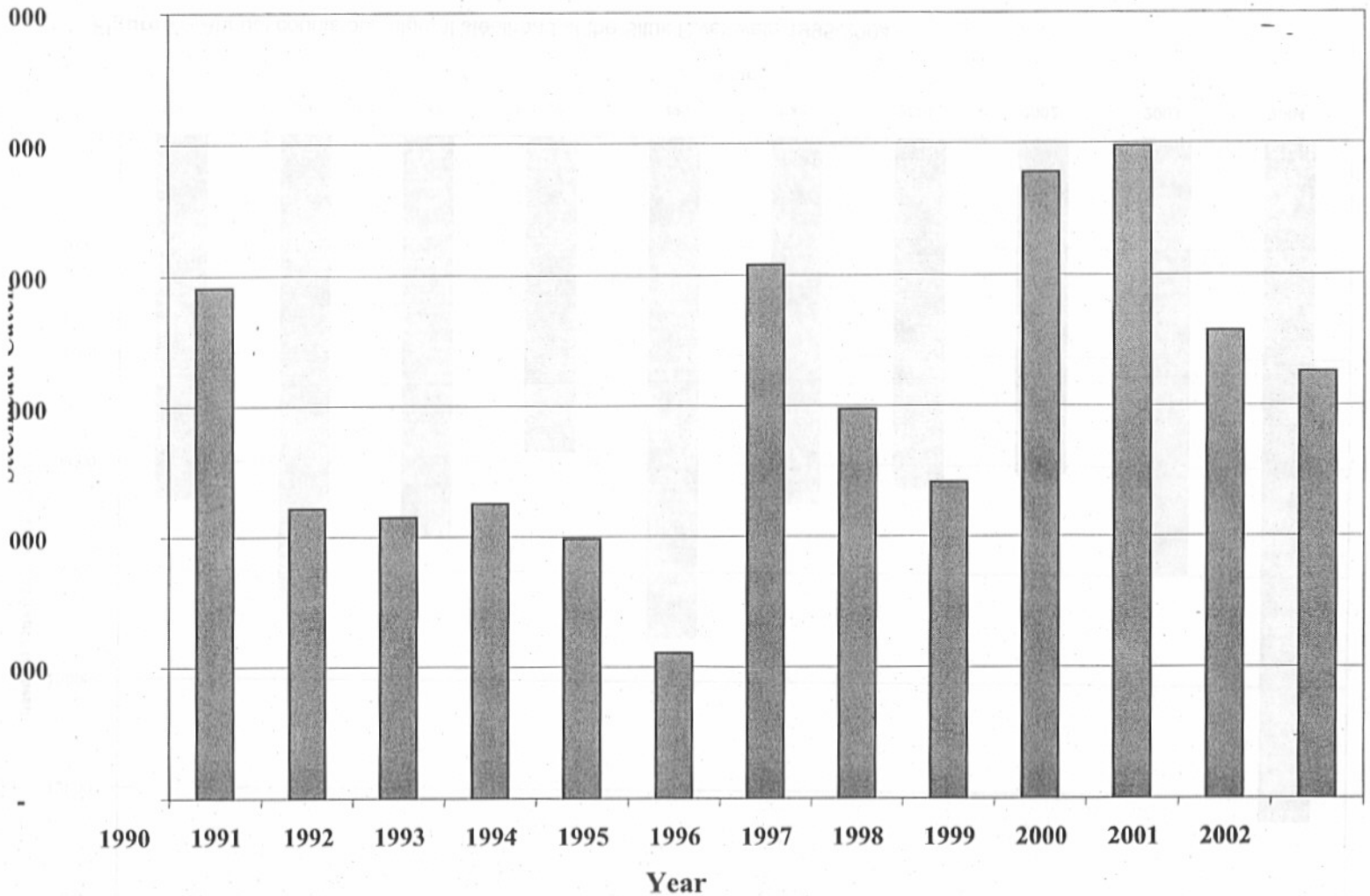


Figure 8.- Estimated freshwater catch of steelhead in the Southeast Alaska sport fishery, 1990 – 2002, includes Yakutat Area. More restrictive sport fishing regulations were implemented in 1994.

Table 1. Steelhead snorkel surveys conducted in Southeast Alaska, 1997 – 2004 (2004 is preliminary). Peak count (**bold**) is defined as a bracketed count or a count having a lower count before and after the high or "peak" count; high count (*Italicized*) defined as an unbracketed count and is the highest count for that year/system.

Management Area	Stream Name	Year 1997	1998	1999	2000	2001	2002	2003	2004
		Peak / *High*	**Peak** / *High*	**Peak** / *High*	**Peak** / *High*	**Peak** / *High*	**Peak** / *High*	**Peak** / *High*	**Peak** / *High*
Juneau	Peterson Creek	**26**	*29*	*38*	*27*	**41**	**13**	**36**	*39*
	Pleasant Bay (Seymour)	*155*	**81**	*132*	**48**	*48*	**36**	**50**	**51**
Ketchikan	Humpback Creek	**91**	*24*	*4*	*7*	*101*	*94*	**105**	*65*
	Ketchikan Creek	*48*	*47*	*19*	**15**	*24*	*5*	**60**	*53*
	McDonald Lake	**145**	**86**	*100*	**47**	*74*[a]	*14*[a]	**79**	*76*
	White River	*84*	**93**	*60*[a]	**38**	**48**	**37**	*77*	*35*
Petersburg	Petersburg Creek	*123*	**152**	**115**	*68*	*64*	*41*	**146**	**330**
	Marten Creek	*14*	*17*	*18*	NA	NA	NA	NA	NA
	Slippery Creek	NA	NA	NA	NA	*41*	*31*	*76*	*92*
Prince of Wales	Eagle/Luck Creek	*90*	**56**	*118*	**82**	NA	**36**	*95*	*67*
	Harris River	*104*	**156**	*192*	**79**	*53*[a]	*200*	*195*	**124**
Sitka	Ford Arm Creek	*296*	*103*	*89*	**134**	*28*[a]	*122*	**181**	**379**
	Sitkoh Creek	*329*[a]	*154*	*120*	*112*	*115*	*65*	**296**	**354**

a) Only one survey count in this year.

SUPPLEMENTAL MATERIALS FOR FP05-25

Prepared for:

The Southeast Alaska Regional Advisory Council

Juneau

By:

The Alaska Department of Fish and Game

September 27, 2004

2002-2003 Kutlaku Lake Sockeye Salmon Stock Assessment Information

- The 2002, the sockeye salmon escapement estimate was incomplete because of inadequate sampling in the stream and unexpected changes in fish spawning behavior:
  - The pooled Petersen estimate in the inlet/beach study area was questionable because of inadequate sampling.
  - The number of spawners on the beach exceeded the number stream spawners as the season progressed.
  - We did not get a mark-recapture estimate on the beach spawners because they appeared late in the season and were widely dispersed around the lake.
  - We did, however, use the spawning behavior and habitat selection observed in 2002 to redesign the study in 2003. Major changes included using a modified Jolly-Seber to estimate the population in the stream/beach study area and adding a second study area along the beach later in the season.

- In 2003, the stream/beach study area estimate was not reliable but the beach study area was considered valid:
  - We estimated about 3,600 sockeye spawners (95% CI=3,000-5,000, CV=15.2%) in the lower reach of the stream and adjacent beach using a modified Jolly-Seber study design.
  - However, because of missed trips due to bad weather, high CVs on the first and last trip (31% and 46% respectively) and possible violations of some assumptions of this model, we do not consider this to be a reliable estimate.
  - Using the modified Jolly-Seber study design for beach spawners, we estimated about 1,700 sockeye spawners (95% CI= 1,500-1,800; CV=4.2%) in the beach study area. We consider this a valid estimate, which represented about 20% of the beach spawning population.
  - Because of our confidence in the beach spawning study area estimate was greater than the estimate obtained in the stream/beach study area, we expanded the beach study area by a factor of 5 to get a rough estimate of the total sockeye population in Kutlaku Lake, 8,500 fish. We obtained a range of the sockeye spawning population estimates by expanding the lower and upper 95% CI of the beach study area estimate, also by a factor of 5.

  - Conclusion: We estimated the total escapement of sockeye salmon into Kutlaku Lake in 2003 was between 7,500 and 9,000 fish.

- The Kutlaku Lake sockeye fry population density estimate in 2002 (25fry/100m^2) was one of the highest in Southeast Alaska, suggesting that this lake is capable of supporting high fry abundance. The zooplankton density and biomass data confirmed that the supply of food was adequate for the current level of fry production and has the potential to support even higher numbers of fry. However multiple years of limnology data and hydroacoustic estimates of fry population coupled with adult returns are needed to describe the mechanisms that limit freshwater sockeye production in Kutlaku Lake.

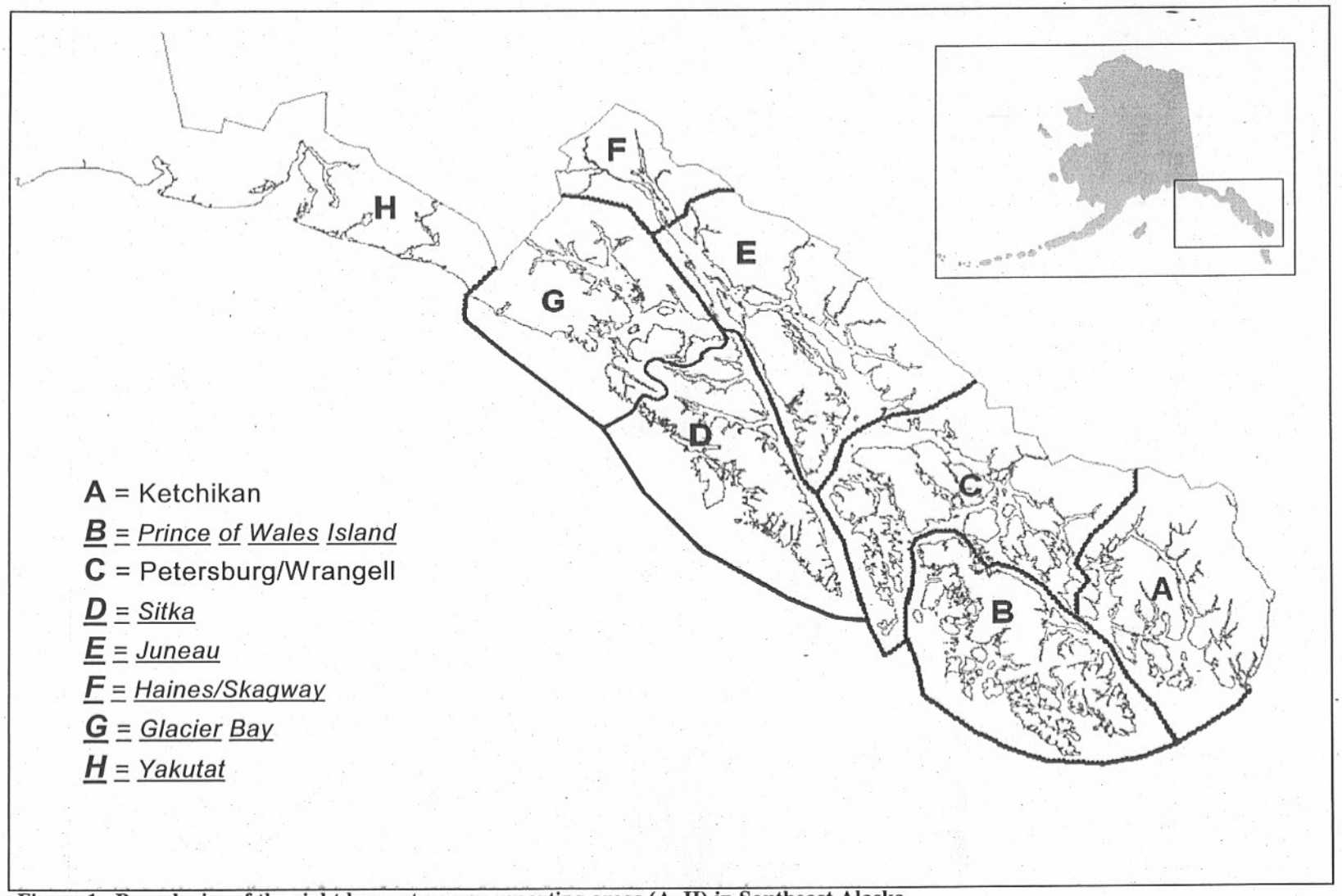


Figure 1.–Boundaries of the eight harvest survey reporting areas (A–H) in Southeast Alaska.

Table 1.- Kake, Petersburg, Wrangell, Stikine Area[a] freshwater sport harvest of sockeye salmon, 1977-2002. Source: SWHS.

	Anan Creek	Blind Slough	Kadake Creek	Kah Sheets Creek	Petersburg Creek	Thom's Creek and Lake	Stikine River	Thom's Creek and Lake	"Other" streams and lakes	Total
1977	0				0				75	75
1978									28	28
1979					0				136	136
1980					0				129	129
1981			0	0	0				172	172
1982					0				283	283
1983									129	129
1984					12				107	119
1985					0				44	44
1986	0				0				15	15
1987					0		0		55	55
1988	0				0				18	18
1989	0				0		0		804	804
1990	0				124				77	201
1991	33				0				316	349
1992	33		0		25	25	0	25	386	494
1993	0		0		77				488	565
1994					9				149	158
1995	0				10				201	211
1996		0			46				306	352
1997		0			60				721	781
1998		5		536	108				0	649
1999		33			0		0		225	258
2000		0		716	95				129	940
2001		0			0				571	571
2002		0			19				245	264

[a] Kake, Petersburg, Wrangell, Stikine (Area C): All waters of Alaska, including drainages, from Ernest Sound to Cape Fanshaw, including Wrangell, Etolin, Zarembo, Mitkof, Kupreanof, Kuiu, and Coronation Islands, and Ernest Sound.

Table 2.-Saltwater charter salmon fishing effort (no. of boats and clients) and harvest in select areas near Pillar Bay, 2000 - 2003. Source: Saltwater charter vessel logbooks.

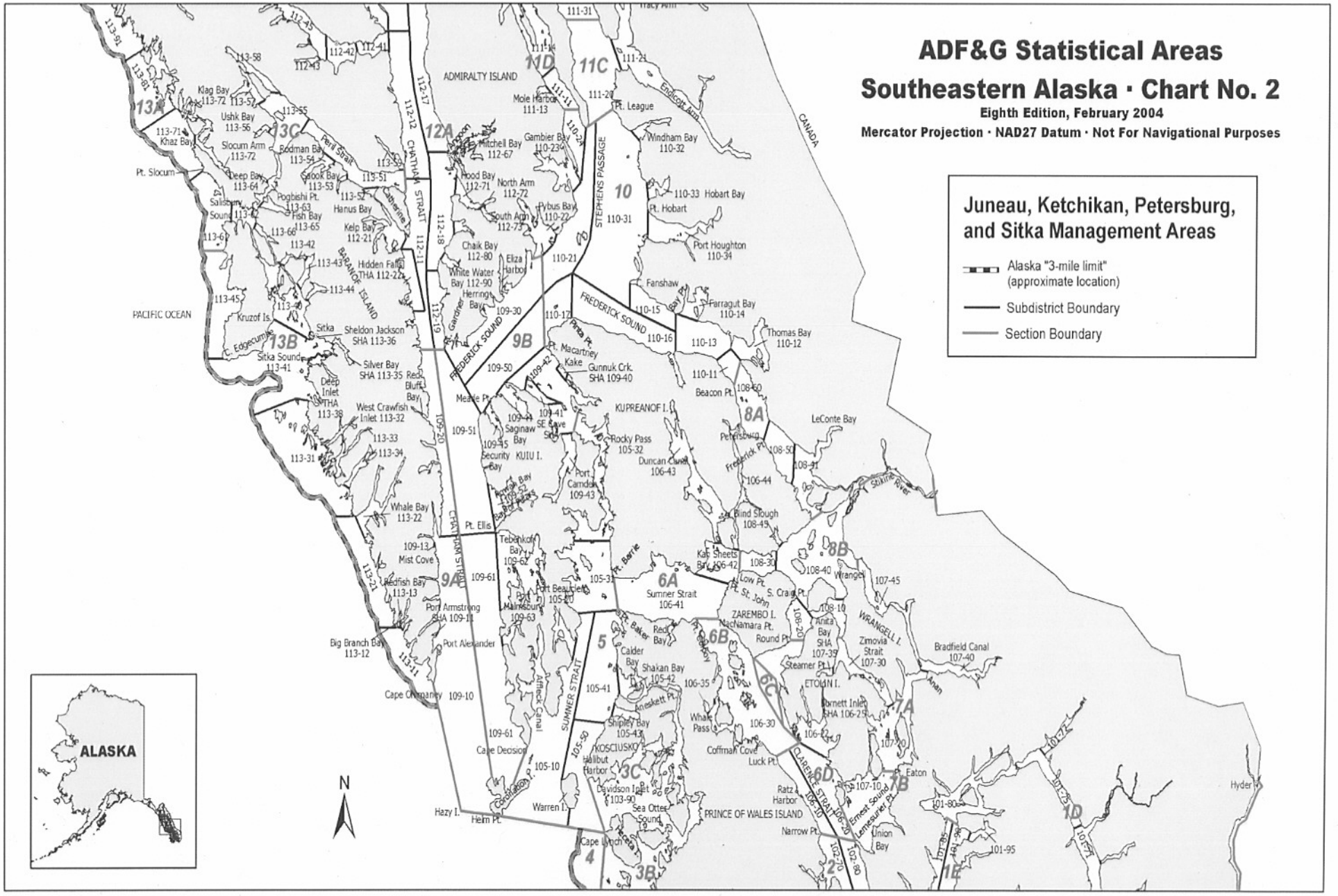
Stat Area/ Year	No. of vessels	No. of Clients	No. of Salmon Hours	King salmon	Coho salmon	Sockeye salmon	Chum salmon	Pink salmon
109510 - Chatham Straight								
2000	10	117	109	5	138	0	15	109
2001	11	197	254	7	273	0	112	185
2002	8	132	156	9	217	1	17	365
2003	9	91	85	7	90	0	29	100
Average	10	134	151	7	180	0	43	190
109520 - Bay of Pillars								
2000	5	176	244	31	405	0	2	18
2001	2	139	147	25	266	0	11	15
2002	3	231	294	23	921	0	2	32
2003	2	87	90	9	330	0	4	13
Average	3	158	194	22	481	0	5	20
109610 - Chatham Strait								
2000	7	113	134	26	152	1	10	19
2001	7	119	95	36	127	0	5	38
2002	9	139	127	44	60	0	1	24
2003	6	92	93	31	145	0	2	52
Average	7	116	112	34	121	0	5	33
109620 - Tebenkof Bay								
2000	5	172	212	68	144	0	1	1
2001	3	411	458	111	1020	2	21	36
2002	9	385	453	130	413	0	3	116
2003	8	362	365	84	1500	0	17	76
Average	6	333	372	98	769	1	11	57

Appendix A. Commercial harvest of sockeye salmon in southern Chatham Strait, by sub-district (locations of sub-districts shown in Fig. 2). Average annual harvests for years with commercial harvest are shown, by decade, for each sub-district and all sub-districts combined.

	sub-district (of district 109)							
YEAR	**10**	**20**	**51**	**52**	**61**	**62**	**63**	**All Sub-Districts**
1970	2	71	1,668	174	211	44	1	2,171
1971		205	1,209	490	153	285	2,303	4,645
1972		12	617	24		200	240	1,093
1973		6	0	1	139	164	0	310
1974		0	1,492	10	964	1,626	740	4,832
1975	2							2
1976					0	0		0
1977	300					46		346
1978						554		554
1979	139	10,564	162	35	4	857	133	11,894
1980	602	11	175	6	16	110	0	920
1981	44	134	299	0		48		525
1982	2,964	2,994	1,013	0		2		6,973
1983	191	480			16	43	0	730
1984	419	1,473	407	12		318	22	2,651
1985	330	3,622	9,242	25		673	34	13,926
1986				29	211	1,756		1,996
1987	4	1,794	4			10		1,847
1988	0	767	1,132	167		3,769	43	5,878
1989	4	1,639	5,409			183		7,241
1990	119	2,568	3,506	115	606	318	428	7,699
1991	47	2,221	2,563		1,321	359		6,522
1992	2,604	2,647	9,539	13	1,724	1,290	829	18,888
1993	2,880	10,994	12,027		2,524	1,639		30,134
1994	2,374	10,696	9,401	78	11,901	1,217	119	35,811
1995	2,506	1,288	2,859		15,853	1,243	386	24,151
1996	626	934	4,267	48	403	506	10	6,804
1997	1,507	4,062	5,447	6	440	13		11,498
1998	553	3,741	6,691	182	6,012	368		17,554
1999	166	3,342	5,893	84	847	99	90	10,543
2000		1,305	4,482	134	168	1,307		7,396
2001	119	410	35,122	346	4,960	863	56	41,879
2002	6	483	8,145	67	1,917	514	12	11,144
2003	54	253	18,492	554	5,369	1,893	11	26,629
decade averages*								
1970-79	111	1,810	858	122	245	420	570	4,135
1980-89	506	1,435	2,210	34	81	691	20	4,978
1990-99	1,338	4,249	6,219	75	4,163	705	310	17,061

2000-03	60	613	16,560	275	3,104	1,144	26	21,782
All Years	714	2,370	5,402	108	2,424	676	273	11,967

*averages of years with reported harvests only


ADF&G Statistical Areas
Southeastern Alaska · Chart No. 2
Eighth Edition, February 2004
Mercator Projection · NAD27 Datum · Not For Navigational Purposes
Juneau, Ketchikan, Petersburg, and Sitka Management Areas
Alaska "3-mile limit" (approximate location)
Subdistrict Boundary
Section Boundary
ALASKA
N
PACIFIC OCEAN
CANADA
ADMIRALTY ISLAND
PRINCE OF WALES ISLAND
KUPREANOF I.
KUIU I.
ZAREMBO I.
WRANGELL I.
ETOLIN I.
KOSCIUSKO
CHATHAM STRAIT
STEPHENS PASSAGE
FREDERICK SOUND
SUMNER STRAIT
CLARENCE STRAIT
BARANOF ISLAND
Peril Strait
Tracy Arm
Endicott Arm
Stikine River
Taku River
Bradfield Canal
Sitka Sound
Sitka
Petersburg
Wrangell
Hyder
Pt. Slocum
Pt. Ellis
Pt. Barrie
Pt. Baker
Pt. Gardner
Pt. Macartney
Pt. Hobart
Pt. League
Pt. Ogden
Pt. St. John
Cape Decision
Cape Ommaney
Cape Lynch
Hazy I.
Helm Pt.
Warren I.
Eaton
Ernest Sound
Lemesurier Pt.
Narrow Pt.
Union Bay
Ratz Harbor
Coffman Cove
Luck Pt.
Whale Pass
Shipley Bay
Shakan Bay
Calder Bay
Red Bay
Kah Sheets Bay
Steamer Pt.
Round Pt.
Anita Bay SHA 107-39
Zimovia Strait 107-30
Burnett Inlet SHA 106-29
Sumner Strait 106-41
Rocky Pass 105-32
Duncan Canal 106-43
Port Camden 109-43
Port Beauclerc 105-20
Port Armstrong SHA 109-11
Port Alexander
Security Bay
Saginaw Bay
Meade Pt.
Kake
Gunnuk Crk. SHA 109-40
Sheldon Jackson SHA 113-36
Silver Bay SHA 113-35
Deep Inlet THA 113-38
West Crawfish Inlet 113-32
Whale Bay 113-22
Mist Cove
Redfish Bay 113-13
Big Branch Bay 113-12
Kruzof Is.
Eggecumbe
Salisbury Sound
Deep Bay 113-64
Slocum Arm 113-72
Ushk Bay 113-56
Klag Bay 113-72
Khaz Bay
Hanus Bay
Kelp Bay 112-21
Hidden Falls THA 112-22
Fish Bay 113-65
Pogibishi Pt. 113-63
Sashe Bay 113-53
Bodman Bay 113-54
Mitchell Bay 112-67
Hood Bay 112-71
North Arm 112-72
South Arm 112-73
Chaik Bay 112-80
White Water Bay 112-90
Herring Bay
Eliza Harbor
Gambier Bay 110-23
Pybus Bay 110-22
Mole Harbor 111-13
Windham Bay 110-32
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Farragut Bay 110-14
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LeConte Bay
Blind Slough 108-49
Low Pt.
S. Craig Pt.
Round Pt.
Macnamara Pt.
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Davidson Inlet 103-90
Sea Otter Sound
Halibut Harbor
Ratz Harbor
Narrow Pt.
Union Bay
Hyder
Eaton
Bradfield Canal 107-40
Anan
Wrangell
Petersburg
Sitka
Juneau
Ketchikan

Raincountry Flyfishers
8750 North Douglas Hwy
Juneau, AK 99801

December 20, 2004

Mitch Demientieff, Chair
Federal Subsistence Board
Office of Subsistence Management
3601 C Street, Ste 1030
Anchorage, AK 99503

Dear Chairman Demientieff,

Raincountry Flyfishers is a recreational club of Juneau sport fishermen. As residents of Juneau and the Juneau road system, our members are of urban rather than rural designation and therefore not eligible for subsistence fishery in federal waters in the Juneau area. Nonetheless, we do consume fish under state sport and personal use fishery regulations and rely on this fish as an important source of healthy protein as well as recreational and spiritual value. As we feel we may be impacted, we offer the following comments on Proposals FP05-28 and FP05-30.

We are concerned with that Proposals FP05-30 before the Subsistence Board for Southeast Alaska Dolly Varden and Cutthroat trout bring a real possibility of the decimation of these fish in the heavily impacted Juneau area. Recent history shows a drastic decline in Dolly Varden and Cutthroat trout followed by the implementation of restrictive regulations to restore populations in the 1990s. Juneau anglers who fish for Dolly Varden and coastal Cutthroat trout have seen a noticeable rebound in quantity and size in the last five years, and we credit the current state regulations for the health of these fisheries. We have a long way to before these fish are at the levels that elders recall, but we feel that progress made by Alaska Department of Fish and Game attention should be furthered.

Steelhead are found in very small river systems around Juneau and are very susceptible to decimation under the proposed subsistence methods that may make good sense in areas with smaller human population and stronger runs of fish.

We recommend that waters accessible by the Juneau road system be exempt from the Proposals FP05-28 and FP05-30, and that these areas continue to be managed under limits of ADF&G sport and personal use fisheries for steelhead, Dolly Varden, and cutthroat trout. We feel that these limits offer Juneau fishermen, and visiting fishermen that may be qualified rural federal subsistence users, an opportunity for harvest commensurate with the levels that waters hosting these stocks of fish can produce, given the fishing pressure they receive. We also feel that other areas of Southeast Alaska with

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road system access that have had special restrictive regulations established for these species may warrant exclusion from the proposed regulations.

We feel that loosening regulations for a class of visiting rural fishermen is at the long term risk to the sustainability of these vulnerable fisheries, ultimately to the detriment of Juneau users and visiting qualified federally-qualified subsistence users' use.

Thank you for your consideration,

Mark Vinsel

Mark Vinsel
President
Raincountry Flyfishers
Juneau, Alaska

Appendix A. Customary and Traditional Use Determinations for Southeast Alaska for the 2004-2005 Regulatory Year.

The Southeastern Alaska Area includes all waters between a line projecting southwest from the westernmost tip of Cape Fairweather and Dixon Entrance. These regulations apply on inland waters within or adjacent to Admiralty Island National Monument, Misty Fjords National Monument, and Tongass National Forest.

Customary and Traditional Use Determinations		
AREA	SPECIES	DETERMINATION
District 1 Section 1-E in waters of the Naha River and Roosevelt Lagoon	Salmon, Dolly Varden, trout, smelt and eulachon	• *Residents of the City of Saxman.*
District 1 Section 1-F in Boca de Quadra in waters of Sockeye Creek and Hugh Smith Lake within 500 yards of the terminus of Sockeye Creek	Salmon, Dolly Varden, trout, smelt and eulachon	• *Residents of the City of Saxman.*
District 2, 3, and 5 and waters draining into those areas.	Salmon, Dolly Varden, trout, smelt and eulachon	• *Residents living south of Sumner Strait and west of Clarence Strait and Kashevaroff Passage.*
District 5 North of a line from Point Barrie to Boulder Point	Salmon, Dolly Varden, trout, smelt and eulachon	• *Residents of the City of Kake and in Kupreanof Island drainages emptying into Keku Strait south of Point White and north of the Portage Bay boat harbor.*

Customary and Traditional Use Determinations		
AREA	**SPECIES**	**DETERMINATION**
District 6 and waters draining into that District	Salmon, Dolly Varden, trout, smelt and eulachon	• *Residents living south of Sumner Strait and west of Clarence Strait and Kashevaroff Passage; residents of drainages flowing into District 6 north of the latitude of Point Alexander (Mitkof Island); residents of drainages flowing into Districts 7 & 8, including the communities of Petersburg & Wrangell; and residents of the communities of Meyers Chuck and Kake.*
District 7 and waters draining into that District	Salmon, Dolly Varden, trout, smelt and eulachon	• *Residents of drainages flowing into District 6 north of the latitude of Point Alexander (Mitkof Island); residents of drainages flowing into Districts 7 & 8, including the communities of Petersburg & Wrangell; and residents of the communities of Meyers Chuck and Kake.*
District 8 and waters draining into that District	Salmon, Dolly Varden, trout, smelt and eulachon	• *Residents of drainages flowing into District 6 north of the latitude of Point Alexander (Mitkof Island); Residents of drainages flowing into Districts 7 & 8, including the communities of Petersburg & Wrangell; and residents of the community of Meyers Chuck.*
District 9 Section 9-A	Salmon, Dolly Varden, trout, smelt and eulachon	• *Residents of the City of Kake and in Kupreanof Island drainages emptying into Keku Strait south of Point White and north of the Portage Bay boat harbor.*
District 9 Section 9-B north of the latitude of Swain Point	Salmon, Dolly Varden, trout, smelt and eulachon	• *Residents of the City of Kake and in Kupreanof Island drainages emptying into Keku Strait south of Point White and north of the Portage Bay boat harbor*
District 10 West of a line from Pinta Point to False Point Pybus	Salmon, Dolly Varden, trout, smelt and eulachon	• *Residents of the City of Kake and in Kupreanof Island drainages emptying into Keku Strait south of Point White and north of the Portage Bay boat harbor.*

Customary and Traditional Use Determinations		
AREA	**SPECIES**	**DETERMINATION**
District 12 South of a line from Fishery Point to south Passage Point and north of the latitude of Point Caution	Salmon, Dolly Varden, trout, smelt and eulachon	• *Residents of the City of Angoon and along the western shore of Admiralty Island north of the latitude of Sand Island, south of the latitude of Thayer Creek, and west of 134° 30' W. long., including Killisnoo Island.*
District 13 Section 13-A south of the latitude of Cape Edward	Salmon, Dolly Varden, trout, smelt and eulachon	• *Residents of the City and Borough of Sitka in drainages which empty into Section 13-B north of the latitude of Dorothy Narrows.*
District 13 Section 13-C	Salmon, Dolly Varden, trout, smelt and eulachon	• *Residents of the City and Borough of Sitka in drainages which empty into Section 13-B north of the latitude of Dorothy Narrows.*
District 13 Section 13-C east of the longitude of Point Elizabeth	Salmon, Dolly Varden, trout, smelt and eulachon	• *Residents of the City of Angoon and along the western shore of Admiralty Island north of the latitude of Sand Island, south of the latitude of Thayer Creek, and west of 134° 30' W. long., including Killisnoo Island.*
District 14 Section 14-B and 14-C	Salmon, Dolly Varden, trout, smelt and eulachon	• *Residents of the City of Hoonah and in Chichagof Island drainages on the eastern shore of Port Frederick from Gartina Creek to Point Sophia.*
Remainder of the Southeastern Alaska Area	Dolly Varden, trout, smelt and eulachon	• *Residents of Southeastern Alaska and Yakutat Areas.*

Customary and Traditional Use Determinations

AREA	SPECIES	DETERMINATION
District 12 South of a line from Bishop Point to south Passage Point and north of the latitude of Point Caution	Salmon, Dolly Varden, trout, smelt and eulachon	• Residents of the City of Angoon only along the western shore of Admiralty Island north of the latitude of Sand Island, south of the latitude of Tracy Creek and west of 134° 30' W. long., including Kilisnoo Island.
District 13 Section 13-A south of the latitude of Cape Edward	Salmon, Dolly Varden, trout, smelt and eulachon	• Residents of the City and Borough of Sitka in drainages which empty into Section 13-A north of the latitude of Dorothy Narrows.
District 13 Section 13-C	Salmon, Dolly Varden, trout, smelt and eulachon	• Residents of the City and Borough of Sitka in drainages which empty into Section 13-B north of the latitude of Dorothy Narrows.
District 13 Section 13-C east of the longitude of Point Elizabeth	Salmon, Dolly Varden, trout, smelt and eulachon	• Residents of the City of Angoon and along the western shore of Admiralty Island north of the latitude of Sand Island, south of the latitude of Tracy Creek, and west of 134° 30' W. long., including Kilisnoo Island.
District 14 Section 14-B and 14-C	Salmon, Dolly Varden, trout, smelt and eulachon	• Residents of the City of Angoon and in Chatham Island drainages on the eastern shore of Port Althorp from Chatham Creek to Point Sophia.
Remainder of the Southeastern Alaska Area	Dolly Varden, trout, smelt and eulachon	• Residents of Southeastern Alaska and Yakutat Areas.

REGIONAL ADVISORY COUNCIL RECOMMENDATIONS

SOUTHEAST REGIONAL COUNCIL

Support with modification. Council modified the proposal to include all of the Southeastern Alaska and Yakutat Areas:

The modified proposed regulation would read:

§ ___.27(c)(21) The taking of fish from waters within Federal jurisdiction is authorized outside of published open seasons or harvest limits if the harvested fish will be used for food in traditional or religious ceremonies that are part of funerary or mortuary cycles, including memorial potlatches, provided that:

(i) ***Except in Southeast Alaska and Yakutat,*** *prior to attempting to take fish, the person (or designee) or Tribal Government organizing the ceremony contacts the appropriate Federal fisheries manager to provide the nature of the ceremony, the parties and/or clans involved, the species and the number of fish to be taken, and the Federal public waters from which the harvest will occur.* ***In Southeast Alaska and Yakutat, prior to taking fish for a ceremony (koo.eex'), the person or Tribal government organizing the ceremony will inform the appropriate Federal fisheries manager that there will be an attempt to take fish for a ceremony;***

(ii) ***Except in Southeast Alaska and Yakutat,*** *the taking does not violate recognized principles of fisheries conservation, and uses the methods and means allowable for the particular species published in the applicable Federal regulations (the Federal fisheries manager will establish the number, species, or place of taking if necessary for conservation purposes).* ***In Southeast Alaska and Yakutat, the taking does not violate recognized principles of fisheries conservation, and uses the methods and means allowable for the particular species published in the applicable Federal regulations. Only if necessary for conservation purposes, the Federal Fisheries Manager will establish the number, species, and place(s) of taking;***

(iii) ***Except in Southeast Alaska and Yakutat,*** *each person who takes fish under this section must, as soon as practical, and not more than 15 days after the harvest, submit a written report to the appropriate Federal Fisheries manager, specifying the harvester's name and address, the number and species of fish taken, and the date and location of the taking; and*

(iv) No permit is required for taking under this section; however, the harvester must be eligible to harvest the resource under Federal regulations.

The Council appreciated that the Board passed ceremonial harvest regulations in the 2003 regulatory cycle. At its 2003 wildlife meeting, the Board concurred with most of the Council recommendations; however, the Board included a strong reporting requirement to be placed on persons harvesting fish for ceremonial uses. The Council's 2003 recommendation did not include

a reporting requirement. The Council noted that, in Southeast Alaska, *koo.eex'*, or pay off parties, are the final ceremony in traditional Native mortuary cycles. Generally held a year or more after a death, they mark the end of the mourning period. At *koo.eex'* the clan that has lost a member honors the opposing moiety clans that have provided support and distributes food, gifts, and money to the opposing clans. These ceremonies are at the heart of traditional Tlingit spirituality.

In making its 2003 recommendation, the Council did not believe that there was a conservation need to impose reporting requirements on persons organizing *koo.eex'*. A limited number of *koo.eex'* take place each year. *Koo.eex'* are well publicized far in advance of their occurrence, and the Central Council of Tlingit and Haida Tribes of Alaska maintains a web based listing of the *koo.eex'* that will take place in the coming year. This web based listing identifies the organizers of the *koo.eex'*, dates for the ceremony, clans represented, deceased to be honored at the memorial party, and contact information. All local Federal managers should be aware of the mortuary celebrations scheduled for their areas. The Council believed that the amount of fish taken for *koo.eex'* was very limited. Because of the small harvests that are needed for *koo.eex'* and the respect shown for natural resources by Native participants, strict reporting requirements were not needed and would be perceived as being disrespectful of traditional Native spiritual practices concerning death.

The current proposal brought before the Council concerned the respect shown to Native culture and maintained that the current reporting requirement was an unnecessary intrusion in Native spiritual practice. The Council heard very strong testimony from representatives from Craig, Hoonah, and Kake:

> *when we are out there gathering for our koo.eex', we are doing this very religiously. We have our ways of harvesting that are very respectful to the water, to the salmon, to the resources that make all of this happen. We respect that. And we do say our prayers as we do this.*
>
> *it's just the idea that you have to go ask permission, you know, you have to get somebody's blessing to go something that you're going to have to do anyway when you've already got the blessing from your family because they're the ones who told you to go get it.*
>
> *I think that needs to be brought out so it will maybe work its way up the chain in Federal regulations and State statutes, to be sensitive enough to people that want to lay their people to rest.*

The Council also heard that very close harvest monitoring was not taking place for extensive sport fishing harvests in the Hoonah traditional territory. The Council found it disingenuous that regulations required very strict reporting requirements for ceremonial harvests while the much larger sport fishing harvests were not closely tracked. The Council noted that ceremonial harvests take place within Native spiritual and religious traditions. Government should be wary of intruding unnecessarily in the practice of these traditions.

Based on public testimony and the input from Council members, the Council modified the proposal to apply to all of Southeast Alaska and Yakutat.

Council deliberation noted that the limited harvests that are likely to take place under this

regulation do not raise conservation concerns. Information presented substantially supports the proposal—the number of *koo.eex'* held in a given year is limited and harvests are insubstantial compared to other harvests of fish resources. Positive action on this proposal will benefit subsistence users by removing a reporting burden and by demonstrating respect for Native traditions. There will be no adverse effect on other users of fish resources through action on this proposal.

INTERAGENCY STAFF COMMITTEE RECOMMENDATION

The Interagency Staff Committee members did not reach consensus. The vote was evenly split, resulting in two different recommendations to the Federal Subsistence Board.

Option A:

Support with modification, consistent with the recommendation of the Southeast Regional Advisory Council, to not require a written or verbal report, and to apply to all of the Southeastern and Yakutat Areas.

The modified proposed regulation would read:

§___.27(c)(21) The taking of fish from waters within Federal jurisdiction is authorized outside of published open seasons or harvest limits if the harvested fish will be used for food in traditional or religious ceremonies that are part of funerary or mortuary cycles, including memorial potlatches, provided that:

(i) ***Except in Southeast Alaska and Yakutat,*** *prior to attempting to take fish, the person (or designee) or Tribal Government organizing the ceremony contacts the appropriate Federal fisheries manager to provide the nature of the ceremony, the parties and/or clans involved, the species and the number of fish to be taken, and the Federal public waters from which the harvest will occur.* ***In Southeast Alaska and Yakutat, prior to taking fish for a ceremony (koo.eex'), the person or Tribal government organizing the ceremony will inform the appropriate Federal fisheries manager that there will be an attempt to take fish for a ceremony;***

(ii) ***Except in Southeast Alaska and Yakutat,*** *the taking does not violate recognized principles of fisheries conservation, and uses the methods and means allowable for the particular species published in the applicable Federal regulations (the Federal fisheries manager will establish the number, species, or place of taking if necessary for conservation purposes).* ***In Southeast Alaska and Yakutat, the taking does not violate recognized principles of fisheries conservation, and uses the methods and means allowable for the particular species published in the applicable Federal regulations. Only if necessary for conservation purposes, the Federal Fisheries Manager will establish the number, species, and place(s) of taking;***

(iii) ***Except in Southeast Alaska and Yakutat,*** *each person who takes fish under this section must, as soon as practical, and not more than 15 days after the harvest, submit a written report to the appropriate Federal Fisheries manager, specifying the harvester's name and address, the number and species of fish taken, and the date and location of the taking; and*

(iv) No permit is required for taking under this section; however, the harvester must be eligible to harvest the resource under Federal regulations.

Justification

The Southeast Regional Advisory Council's recommendation retains the existing requirement to inform the Federal fisheries manager that there will be an attempt to take fish for a ceremony. This should significantly reduce the potential for conflicts with law enforcement officers when such activities are being conducted. The elimination of the post-harvest reporting requirement is necessary to address important cultural sensitivity concerns associated with these traditional Native spiritual practices. Even without such reporting, adequate information on the species, their amounts, and locations of harvest would still be available to the managers through the initial contact by the harvester and/or the Tribal organization.

Those holding this view do not find justification in rejecting the Council's recommendation based on the criteria outlined in ANILCA Title VIII Section 805(c). The Council recommendation does not present a conservation concern, as the targeted species (coho and/or sockeye salmon) are abundant, and the numbers typically harvested for these ceremonies are low. Additionally, the measures that currently exist in the regulations, to address potential concerns about over-harvest of specific, localized fish populations, are retained. The Council's recommendation is not detrimental to subsistence users, but instead more adequately provides for an important subsistence-related activity, and is supported by evidence provided to them via oral testimony at the fall 2004 Council meeting.

Option B:

Support with modification, contrary to the recommendation of the Southeast Regional Advisory Council. The only modification to the current regulation would be to allow a verbal report in place of a written report.

The modified proposed regulation would read:

§___.27(c)(21) The taking of fish from waters within Federal jurisdiction is authorized outside of published open seasons or harvest limits if the harvested fish will be used for food in traditional or religious ceremonies that are part of funerary or mortuary cycles, including memorial potlatches, provided that:

(i) Prior to attempting to take fish, the person (or designee) or Tribal Government organizing the ceremony contacts the appropriate Federal fisheries manager to provide the nature of the ceremony, the parties and/or clans involved, the species and the number of fish to be taken, and the Federal public waters from which the harvest will occur;

(ii) The taking does not violate recognized principles of fisheries conservation, and uses the methods and means allowable for the particular species published in the applicable Federal regulations (the Federal fisheries manager will establish the number, species, or place of taking if necessary for conservation purposes);

(iii) Each person who takes fish under this section must, as soon as practical, and not more than 15 days after the harvest, submit a written report to the appropriate Federal Fisheries manager, specifying the harvester's name and address, the number and species of fish taken, and the date and location of the taking ***(except in Southeast Alaska where a verbal report may be substituted for a written report)****; and*

(iv) No permit is required for taking under this section; however, the harvester must be eligible to harvest the resource under Federal regulations.

Justification

The existing regulation appears to be working well, including providing explicit authorization to take fish for traditional or religious ceremonies that are part of funerary or mortuary cycles, including memorial potlatches. At the same time, the regulation provides information needed for conservation of fish resources. There is no substantial evidence that the regulation is not working as anticipated on a Southeast-wide basis.

The proposed wording by both the proponent and the Southeast Regional Advisory Council does not provide sufficient information for the manager to assure conservation of the resource or allow for the unobstructed implementation of the take. Those holding this view find justification in modifying the Council's recommendation based on the criteria outlined in ANILCA Title VIII Section 805(c).

The modification to sub-section (i) proposed by the Council would require only informing a Federal fisheries manager that there will be an attempt to take fish for a ceremony. The revised regulation would not be specific in time or place. The informing could occur at the beginning of the regulatory year and be no more specific than, "I plan to take fish in Southeast Alaska for a ceremony." The manager would have no basis to evaluate whether the taking violates recognized principles of fisheries conservation, as required in the proposed regulatory sub-section (ii) and further required by ANILCA, Title VIII, sections 802 and 815. Since the take under Federal regulations must occur in inland waters, there is the potential of over fishing specific stocks. Regulatory sub-section (ii) also states, "Only if necessary for conservation purposes, the Federal fisheries manager will establish the number, species, and places of taking." Since sub-section (i) does not require specific identification of the proposed number, species and place of harvest, it would be internally inconsistent with the requirements of sub-section (ii). If the presence of this language in sub-section (ii) in effect implies or requires this information to be provided in sub-section (i), then the existing regulatory language does that and does not need modification. Regulations must not be vague or inconsistent, otherwise they are unenforceable.

Implementation of the Council's recommendation would also not allow the manager to have a reasonable level of comfort that persons taking the fish would not be harassed by others, or unecessarily contacted by law enforcement officials. Particularly during ceremonial times of

harvest, those taking fish should not be burdened by administrative concerns. If the manager and law enforcement are not aware of the location and time of the harvest, there is substantially greater likelihood that those taking the fish will be stopped, questioned and potentially cited. No permit is required by those taking fish, therefore there will be no record of whether the harvest is legal or illegal. In the long run, this could be more detrimental to the satisfaction of subsistence needs and the effecting of religious ceremonies than what is currently required.

This group of Interagency Staff Committee members does suggest that the reporting requirement after a harvest occurs could be modified to only require a verbal report of the harvest that occurred. The manager would then document the harvest, negating the need for the user to spend time writing a report.

COMMENTS

ADF&G

The Federal Subsistence Board meeting book is being published prior to development of final recommendations and comments by the Alaska Department of Fish and Game. This information will be available on the Department's website by January 4, 2005. See the ADF&G homepage, under the headings of "highlights" and "regulations", at http://www.adfg.state.ak.us. For those without computer access, please call 1-907- 267-2360 for further information.

PUBLIC:

None.

FP05-30 Executive Summary	
Region 1 - Southeast Regional Council Recommendation	**Support with modification** to provide a harvest limit for Dolly Varden, and reduce possession limits for grayling and brook trout.
Interagency Staff Committee Recommendation	The Interagency Staff Committee did not reach consensus, resulting in a majority and minority recommendation. Option A: **Support with modification**, consistent with the recommendation of the Southeast Regional Advisory Council, to provide a harvest limit for Dolly Varden, and reduce possession limits for grayling and brook trout. Option B: **Oppose** the proposal, contrary to the recommendation of the Southeast Regional Advisory Council.
ADF&G Comments	The Federal Subsistence Board meeting book is being published prior to development of final recommendations and comments by the Alaska Department of Fish and Game. This information will be available on the Department's website by January 4, 2005. See the ADF&G homepage, under the headings of "highlights" and "regulations", at http://www.adfg.state.ak.us. For those without computer access, please call 1-907- 267-2360 for further information.
Written Public Comments	**None.**

REGIONAL ADVISORY COUNCIL RECOMMENDATIONS

SOUTHEAST REGIONAL COUNCIL

Support with modification to provide a harvest limit for Dolly Varden and to reduce possession limits for grayling and brook trout. Similar to proposal FP05-28, this proposal would recognize existing subsistence harvests of Dolly Varden, cutthroat trout, brook trout, grayling, and rainbow trout and establish Federal subsistence harvest and possession limits for these species. The Council reviewed harvest data from ADF&G Division of Subsistence household surveys. These data show that communities throughout the region make subsistence use of these species. As we would expect, harvest levels for Dolly Varden, cutthroat and rainbow trout, were higher than the less widely distributed and less abundant brook trout and grayling. The Council reviewed sport harvest and catch data for recent years. Sport harvest and catch and release mortality is significant in the region and may be much higher than subsistence harvests in many areas. A number of Council members were concerned with wasteful catch and release practices; for these Council members catch and release, since fish are killed but not eaten, is not an ethical practice. The Council agreed with the suggested staff modification of the original proposal to provide a harvest and possession limit for Dolly Varden for conservation purposes.

The Council believes that the modified proposal presents no conservation concerns. If adopted, it will recognize existing subsistence practice. The data presented strongly support adoption of this modified proposal. This proposal will benefit subsistence users by allowing take of these species. There will be no significant effects on non-subsistence harvesters. The Council is aware that there may be management situations where additional harvest restrictions are needed to protect these fish species. These may be established through in-season management with consultation with the Council.

The modified proposed regulation should read:

> *§___.27(i)(13)(xvi) In ~~Baranof Lake, Florence Lake, Hasselborg Lake and River, Mirror Lake, Virginia Lake, and Wilson Lake~~, addition to the requirement for a ~~Federal~~ subsistence fishing permit, the following restrictions for the harvest of Dolly Varden,* ***brook trout, grayling****, cutthroat trout, and rainbow trout apply:*
>
> *(A) The daily* ***household*** *harvest and possession limit is ~~10~~* ***20*** *Dolly Varden ~~of any size~~,* ***there is no closed season or size limit;***
>
> *(B)* ***The daily household harvest and possession limit is 20 brook trout, there is no closed season or size limit;***
>
> ***(C) The daily household harvest and possession limit is 20 grayling, there is no closed season or size limit;***
>
> ***(D) For the harvest of cutthroat and rainbow trout,*** *~~T~~the daily* ***household*** *harvest ~~and possession~~ limit is six* ***and the household possession limit is 12*** *~~cutthroat or rainbow trout~~ in combination.* ***There is no size limit or closed season. A rainbow trout is defined as a fish of the species (Oncorhyncus mykiss) with an overall length less than 22".*** *~~You may only retain fish between 11" and 22". You may only use a rod and reel without bait.~~*

(E) You may only use a rod and reel without bait unless the use of bait is specifically permitted in 5 AAC 47.

~~*(xvii) In all waters, other than those identified in paragraph (i)(13)(xvi) of this section, in addition to the requirement for a subsistence fishing permit, you may harvest Dolly Varden and cutthroat and rainbow trout in accordance with the seasons and harvest limits delineated in the Alaska Administrative Code, 5 AAC 47. You may only use a rod and reel without bait unless the use of bait is specifically permitted in 5 AAC 47.*~~

INTERAGENCY STAFF COMMITTEE RECOMMENDATION

The Interagency Staff Committee did not reach consensus, resulting in a majority and minority recommendation.

Option A:

Support with modification, consistent with the recommendation of the Southeast Regional Advisory Council, to provide a harvest limit for Dolly Varden, and reduce possession limits for grayling and brook trout.

The modified proposed regulation should read:

*§___.27(i)(13)(xvi) In ~~Baranof Lake, Florence Lake, Hasselborg Lake and River, Mirror Lake, Virginia Lake, and Wilson Lake,~~ addition to the requirement for a ~~Federal~~ subsistence fishing permit, the following restrictions for the harvest of Dolly Varden, **brook trout**, **grayling**, cutthroat trout, and rainbow trout apply:*

*(A) The daily **household** harvest and possession limit is ~~10~~ **20** Dolly Varden ~~of any size~~, **there is no closed season or size limit;***

(B) The daily household harvest and possession limit is 20 brook trout, there is no closed season or size limit;

(C) The daily household harvest and possession limit is 20 grayling, there is no closed season or size limit;

***(D) For the harvest of cutthroat and rainbow trout, ~~T~~**the daily **household** harvest ~~and possession~~ limit is six **and the household possession limit is 12** ~~cutthroat or rainbow trout~~ in combination. **There is no size limit or closed season. A rainbow trout is defined as a fish of the species (Oncorhyncus mykiss) with an overall length less than 22".** ~~You may only retain fish between 11" and 22". You may only use a rod and reel without bait.~~*

(E) You may only use a rod and reel without bait unless the use of bait is specifically permitted in 5 AAC 47.

~~*(xvii) In all waters, other than those identified in paragraph (i)(13)(xvi) of this section, in addition to the requirement for a subsistence fishing permit, you may harvest Dolly Varden and cutthroat and rainbow trout in accordance with the seasons and harvest limits delineated in the Alaska Administrative Code, 5 AAC 47. You may only use a rod and reel without bait unless the use of bait is specifically permitted in 5 AAC 47.*~~

Justification

The majority recommendation would legalize the opportunity for Federally-qualified subsistence users to harvest the quantities of Dolly Varden, brook trout, grayling, rainbow and cutthroat trout they need for subsistence purposes. The modified harvest limits will more closely resemble long-term customary and traditional use patterns. Unlimited harvest of Dolly Varden, as requested by the proponent, could lead to conservation concerns for that species. The modified harvest limit for this species is consistent with the proposed limits for brook trout and grayling.

Considerable concern has been expressed over the potential effects of eliminating the size slot limit for cutthroat trout. Under current State and Federal regulations, only fish 11-22 inches in length may be retained. Although studies have documented reduced cutthroat populations at a number of Southeast Alaska localities, the influence of subsistence harvest in such declines is unclear, as many systems have been targeted by resident and non-resident sport anglers. The mortality rate associated with cutthroat trout catch and release sport angling is estimated at 5% of the total sport catch in Southeast Alaska [1996-2002 ADF&G annual cutthroat trout catch estimates for Southeast Alaska ranged from 29,736-46,938 fish (Brookover, 2004)]. Therefore, if harvest of fish less than 11 inches is a concern, the substantial sport fishery must be curtailed before restricting the take by Federally-qualified subsistence users.

The Council is aware that there may be management situations where additional harvest restrictions are needed to protect these fish species. The Council agrees that these protections may be established through in-season management action following consultation with the Council.

Option B

Oppose the proposal, contrary to the recommendation of the Southeast Regional Advisory Council.

Justification

The minority view is to oppose this regulatory change because liberalizing subsistence harvests of resident fish on a region-wide basis could place small populations at risk from over-harvest. Small populations of rainbow and cutthroat trout reside in many streams and lakes throughout Southeast Alaska that could not support the harvest limits contained in this proposal. The small introduced populations of grayling and brook trout may also be over-harvested with adoption of this regulation. Past regulatory actions by the Federal Subsistence Board in 2001 indicated there were conservation concerns with a region-wide approach to liberalizing subsistence harvests of

STAFF ANALYSIS
FP05-03

ISSUES

Proposal FP05-03, submitted by the Eastern Interior Regional Advisory Council (Council), requests that, in the Yukon River drainage, all gillnets with greater than 6-inch mesh, may not be more than 35 meshes in depth. The Council believes that deeper gillnets target larger female Chinook salmon. They are concerned that this practice of using deeper gillnets, along with a disproportionately higher rate of Ichthyophonus infection in larger Chinook salmon, creates a conservation concern on the spawning grounds. The Council also stated that, with lower salmon returns, subsistence users are not being allowed a reasonable opportunity to meet their subsistence needs (OSM Eastern Interior Regional Advisory Council Transcripts 2004).

The Council requests that the proposed regulation apply to both subsistence and commercial fishing gillnets. The Federal Subsistence Management Program has not managed commercial fishing along the Yukon River. However, a provision exists for the Federal Subsistence Board (Board) to restrict, close, or open Federal public lands and waters to the non-subsistence taking of fish and wildlife under Subpart B regulations [ANILCA, Section 815 (3); 50 CFR Part 100.19(a)]. The Board may restrict such uses only when it is deemed necessary to assure a viable population of fish or wildlife, to enable continued subsistence uses of a particular fish or wildlife population, or if there is an issue of public safety or administration.

DISCUSSION

Existing Federal Regulation

§___.27(i)(3)(xiii) You may take salmon only by gillnet, beach seine, fish wheel, or rod and reel, subject to restrictions set forth in this section.

Proposed Federal Regulation

§___.27(i)(3)(xiii) You may take salmon only by gillnet, beach seine, fish wheel, or rod and reel, subject to restrictions set forth in this section. ***In the Yukon River drainage, all gillnets with greater than 6-inch mesh, may not be more than 35 meshes in depth. This applies to both subsistence and commercial fishing gillnets.***

Relevant State Regulation

There are no restrictions on the depth of a gillnet in the Yukon River State subsistence salmon fisheries, however, during times when the Commissioner of the Alaska Department of Fish and Game determines it to be necessary for the conservation of Chinook salmon, the Commissioner may implement by Emergency Order limitations on gillnet depth [5 AAC 01.220 (1) (B)]. Many subsistence fishers use the same gear for subsistence fishing and commercial fishing. Following are pertinent commercial fishing gear regulations:

5 AAC.05 331. Gillnet specifications and operations. (f) Gillnets with greater than six-inch mesh may not be more than 60 meshes in depth. Gillnets with six-inch or smaller mesh may not be more than 70 meshes in depth. Beginning January 1, 1996, this subsection only applies in Districts 4-6.

(g) Beginning January 1, 1996, in the Districts 1-3, (1) gillnets with greater than six-inch mesh may not be more than 45 meshes in depth; (2) gillnets with six-inches or smaller mesh may not be more than 50 meshes in depth

Extent of Federal Public Waters

The area addressed by this proposal includes all Federal public waters of the Yukon River (**Map 1**). Federal public waters of the Yukon River watershed include all navigable and non-navigable waters, located within and adjacent to the exterior boundaries of the Innoko, Kanuti, Koyukuk, Nowitna, Tetlin, Yukon Flats, Yukon Delta National Wildlife Refuges (NWR); the Arctic NWR; the Denali Preserve; the 1980 additions to the Denali Park; the gates of the Arctic National Park and Preserve; the Wrangell–St. Elias National Park and Preserve; Yukon-Charley Rivers National Preserve; the Steese National Conservation Area; the White Mountain National Recreation Area, and Preserve, and those segments of the Wild and Scenic River system, of the Yukon River drainage, located outside the boundaries of these Federal Conservation System Units (i.e., portions of Beaver and Birch Creeks and the Delta, and the Fortymile Rivers).

Note: For purposes of this discussion, the phrase "Federal public waters" is defined as those waters described under 50 CFR 100.3(b).

Customary and Traditional Use Determinations

Customary and traditional use determinations for Yukon River drainage salmon are:

Salmon, other than fall chum salmon – Yukon River residents of the Yukon River drainage, including the community of Stebbins.

Fall chum salmon – Residents of the Yukon River drainage, including the communities of Stebbins, Scammon Bay, Hooper Bay, and Chevak.

Background

State of Alaska Regulatory History

In January 2001, the Alaska Board of Fisheries considered proposal #272, which requested the elimination of gillnets greater than six-inch mesh in the commercial and subsistence Yukon River salmon fisheries. They rejected this proposal because of potential impacts to summer chum stocks (ADF&G 2001). In January 2004, the Alaska Board of Fisheries addressed proposal #136, which requested an increased allowable gillnet gear depth in the nearby Kuskokwim River. They rejected this proposal because it would make subsistence fishers more efficient and lead to an increase in the harvest of Chinook salmon. They also considered proposal #161, which requested the use of drift gillnets in Yukon River Subdistricts 4-B and 4-C. They considered a possible amendment to this proposal that restricted the mesh size to 7-inches to reduce potential impacts

Additional Written Statements Presented to the Federal Subsistence Board

11-13 Jan 2005

Huslia Tribal Council
P.O. Box 70
Huslia, AK 99746

To: Federal Subsistence Board

Attn: Pete Demateo, Federal Subsistence Office
907-786-3895 (fax)

Re: Support opening driftnet fishery for Coho in Y4-B/C

January 11, 2005

The people of Huslia support proposal _____ to open driftnet fishery in Y4-B/C. People here in Huslia go down to Koyukuk to drift for kings during summer run. It's a lot easier for people to get fish if they don't have to compete with other villagers fishing across from Koyukuk. The commercial fishery there hasn't been a factor in the last decade. We would like to see this as a pilot management tool for 2005, and if it enhances management, work with ADF&G management for future years. People from Huslia share their subsistence fish catch during the Memorial Potlatch with other villages on the Koyukuk, so it's very important, as less people come up from downriver now as compared to years past. Economics makes this a difficult fishery.

The proposal would not only help the people of Huslia, but would benefit the communities of Ruby and Galena as well. Thank you for considering this request,

William Derendoff

First Chief, Huslia

WESTERN INTERIOR REGIONAL COUNCIL'S
RECOMMENDATION PROPOSAL FP05-04:

> **Modification:** ***limit the affected area to Subdistricts 4B and 4C, limit the size of drift gillnets to no more than 150 feet long and no more than 35 meshes deep, limit the Chinook salmon harvest opportunity to June 10 – July 14, limit chum salmon harvest opportunity to after August 2, and reduce the drift gillnet fishing opportunity to the final 18-hours of each windowed opening.***

Jack Reakoff, Regional Council officer's comment for the Western Interior Regional Council to the Federal Subsistence Board regarding Proposal FP05-04.

My statement for our Council in support of Proposal FP05-04 will begin with the problems that are to be addressed:

- Above the Y4A line there are limited good fishing sites for subsistence salmon fishing for all of the rural residents,
- Many federally qualified users that do not have access to good sites are compelled to travel from Ruby, Galena, and Huslia to the Y4A line to compete with Koyukuk Village residents to drift gillnet primarily for king salmon, in a highly competitive situation during open harvest windows,
- This is very burdensome to the subsistence users in our region. These burdens entail extra travel time to this area; extra effort while they are there to compete in an arbitrarily small harvest zone; and extra expense in these days of escalating fuel prices.

Proposal FP05-04 was crafted by our Council to address these problems and address the concerns expressed regarding conservation of the salmon stocks. This proposal also take into account the ANILCA mandated premise that these rural residents have a Federal preference over other consumptive uses as stated in the policy of Title VIII, Section 802. And Congress position on the repression of customary and traditional uses, (U.S. Congressional House Record, November 12, 1980 page 10546). Also Congress' position that "regulations concerning such subjects as seasons and means of taking must be adopted which have the least adverse impact upon rural residents (U.S. Congressional House Record, November 12, 1980 page 10547)(underlining added)."

With these aspects in mind, Proposal FP05-04 would help to rectify this situation with conservation of the resource in mind, yet affording the Federally qualified users in our region the choice to use a gear type used, without, I might add, detriment on the lower 500 miles of the Yukon River and to the salmon resource.

This choice of drift net gear was eliminated in the 1970's to accommodate the expanding commercial harvest. The repression of the subsistence use of the drift gillnet occurred before any subsistence priority was established. Nothing has changed to this repression of this subsistence harvest gear type above District Y4A.

There are two harvest allocations on the Yukon River in these districts, subsistence and commercial. There is no gear type allocation among subsistence users. The objective is meet subsistence needs with the least adverse impacts to the subsistence users in regards to the economy of time effort and expense.

Our Western Interior Regional Council has endorsed the conservation windowed schedule, which allows the passage of salmon during the closures to assure escapement and Canadian border passage obligations. The open harvest window is when subsistence users are allowed to take their subsistence salmon. Proposal FP05-04, as modified by our Council, would allow only two18-hour harvest windows per week at the end of the 48-hour openings in Subdistricts 4B and 4C. This limited fishing time affords plenty of salmon passage to the upper drainage escapement needs and the fixed gear users.

All of the "potential biological impacts" described in the opposition to this proposal can be applied to the Subdistricts Y1 through Y4A against allowing the use of drift gillnet gear for subsistence or for that matter, commercial uses. Of course drift gillnet subsistence use has not especially with the windowed harvest schedule damaged the salmon runs. As the State of Alaska's own comment states, two of the four largest recent runs have crossed into Canada. The State of Alaska Board of Fisheries had a split vote on the subsistence use of drift gillnets at their 2004 meeting. It's apparent some Board members understand the need for a regulatory change.

The perception that reasonable opportunity is afforded with the present subsistence fisheries is oblivious to the hardships and high costs endured by subsistence users not allowed to drift gillnets above Subdistrict Y4A. The scoffing at the regulatory imposed overcrowding also shows the differences in the subsistence priorities in Federal and State systems. Our Federal regulations are to *"cause the least adverse impact on rural residents"* not just reasonable opportunity.

The insinuation that a *"fishery manager must consider decreasing overall fishing time"* is incorrect. Subsistence use **is** the highest priority use. The commercial harvest needs to be curtailed to accommodate the subsistence allocation. The insinuation that our users will harvest beyond normal is incorrect as these customary and traditional rural residents will take only what they need and not more. As the subsistence representative for these users, I take exception to that allegation that our users are more wanton than other residents of the drainage. If a few more fish are taken with drift gillnet gear, it will show that needs were not being met.

Anytime the Federal Subsistence Program's regulations diverge from the State's, there will be the need for land ownership markers and proper public notice of the differences. If we have any fish or wildlife regulatory differences it is because the Federal Subsistence Board recognized the need for a difference. This is the whole reason for the Federal subsistence oversight.

Voting in support for Proposal FP05-04 will address some of the problems our Council has identified. This issue is not going to go away by ignoring it. These are real problems and this proposal shows how to address them. This type of proposal has reoccurred for many years because many of the subsistence users want this option. Last year a similar less restrictive proposal had many letters of support. We have fewer letters of support from our region this year. I am concerned people are loosing faith that their true subsistence needs have not been addressed and they are demoralized.

The Western Interior Regional Advisory Council is committed to seeing a resolution to this issue. We have confidence in the Federal Subsistence Program to solve this issue with your help, as we have with other issues over the years.

Federal Subsistence Board meeting, January 11 – 13, 2005, Anchorage Alaska
Jack Reakoff, Western Interior Regional Council representative.

U.S. Congressional Record – House
November 12, 1980

Page H 10546

> "It should be emphasized that the level of subsistence uses by rural residents of particular wildlife populations and fish may have been repressed by State regulatory activities and consequently, recent historical levels of harvest of a particular population or stock may not accurately reflect the normal level of the customary and traditional subsistence use of each population."

Page H 10547

> "If the population is sufficiently viable than all user groups may participate in the harvest, but regulations concerning such subjects as seasons and means of taking must be adopted which have the least adverse impact upon rural residents engaged in subsistence uses of the population."

To Pete Probasco

Fm Virgil Umphenour

20 Pages Follow

Copies for

Don R.

Rich C.

Tom K.

Cliff S.

Steve K.

TO: Art Nelson, Chair
Alaska Board of Fisheries

RC28

THRU: Doug Mecum, Director
Division of Commercial Fisheries

FROM: Gene Sandone, Regional Supervisor GB for
Division of Commercial Fisheries
Arctic Yukon Kuskokwim Region

DATE: November 16, 2004

SUBJECT: Eastern Interior RAC Petition for Emergency Reduction in Depth of Subsistence and Commercial Gillnets Greater Than Six Inch Mesh in the Yukon River

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Action Requested

This petition requests to reduce the depth of subsistence and commercial gillnets with greater than six-inch mesh size in the Yukon River.

Amend commercial regulation 5AAC 05.331. GILLNET SPECIFICATIONS AND OPERATIONS as follows:

(f) Gillnets with greater than six-inch mesh may not be more than 35 [60] meshes in depth.

(g) (1) Gillnets with greater than six-inch mesh may not be more than 35 [45] meshes in depth.
(2) Gillnets with six-inch or smaller mesh may not be more than 50 meshes in depth.

Adopt new regulation to reduce depth of subsistence gillnets greater than six inch mesh size, which are currently unrestricted.

Background:

A brood table representing the chinook salmon stocks from the upper river was submitted to the record during the 2004 AYK BOF meeting, which indicated a decline in older age fish, specifically the 7-year-old component. This decline has attracted the attention of both U.S. and Canadian biologists. It is not clear why this decrease has occurred. There are numerous factors to be considered as to why and include, but are not limited to: 1) a lack of specific age composition from escapements in Canada since 1990, 2) a change in aging method, 3) environmental factors, and 4) the effect of large mesh gillnet gear targeting larger/older age fish through time.

Art Nelson November 16, 2004
Yukon River gillnet depth petition

The department presented information on the age of chinook salmon returning to the upper Yukon River at the January 2004 AYK Finfish BOF meeting in RC 6. Projects with short-term data sets, such as the Tozitna River, were not included, because no trend can be established with a single data point. The portion of this petition reducing gillnet depth for commercial gillnets greater than six inch portion of this petition was brought before the BOF in the form of an amendment using the Fairbanks Advisory Committee's RC #71 through Proposal 161. Both the amendment and the proposal failed. A petition to the BOF in February 2004 from the Fairbanks Fish and Game Advisory Committee requested the exact same language as the amendment addressed in January 2004 and was found to not be an emergency.

Prior to the next BOF cycle for the AYK Region, the Yukon River Drainage Fisheries Association will be collecting gillnet mesh size and depth information from all user groups beginning in 2004. In addition, USFWS staff is in the process of drafting a report about historical length at age trends. The department will also be reviewing age information to determine whether the decline of the 7 and 8-year-old fish can be linked to the fresh water, marine, or combined life stages of the salmon. The department will also be investigating whether this trend is occurring in other areas. It should be understood that the U.S./Canada JTC will be discussing gear issues as part of the U.S./Canada International Agreement process, and both parties will be reviewing issues, data, and various management options.

Fishery Description and Harvests

The combined commercial and subsistence chinook salmon harvests have decreased when comparing the 10-year period of 1989 to 1998 to the recent 5-year (1999-2003) average. The 1989 to 1998 average harvest of approximately 156,000 fish is twice the recent 5-year average harvest of approximately 77,000 fish. Although the subsistence harvest continues to remain relatively stable, commercial harvests have been reduced considerably to meet escapement and subsistence needs. The 2000 Chinook salmon run was the poorest on record with a subsistence harvest of about 36,000 fish and a commercial harvest of approximately 9,000 fish.

Salmon management has been conservative since the poor 2000 run. No commercial or sport fishing occurred in 2001 and subsistence fishing time was reduced below the subsistence fishing schedule adopted by the Board in January 2001. However, chinook salmon runs have been increasing with several record escapements since 2000, and subsistence opportunity has been allowed beyond the regulatory subsistence fishing schedule.

Finding of Emergency

It is the department's conclusion that a finding of an emergency under 5 AAC 96.625 has **NOT** been satisfied by this petition. Delayed regulatory action would not be significantly burdensome to the petitioners, because Yukon River Chinook salmon are available for harvest and will be available to harvest in the future. Historically, the six-year-old component of the run has been dominant and continues to dominate the run. Several record high escapements have occurred since 2000, thus there is no immediate threat to the resource.

Table XX. Cumulative historical CHINOOK salmon catch in department test wheel near Nenana, 1988 through 1992, and 1995 through 2004.

Percy Duyck, Sr., (1988-1994);
Percy Duyck, Jr., (1995-1996);
Terry Duyck, (1997-1999)
Jack Duyck, (2000)
Paul Kleinschmidt (2001-2004)

DATE	1988 SMALL CUM b	1988 LARGE CUM c	1988 TOTAL CUM	1989 SMALL CUM b	1989 LARGE CUM c	1989 TOTAL CUM	1990 SMALL CUM b	1990 LARGE CUM c		1990 TOTAL CUM	1991 SMALL CUM b	1991 LARGE CUM c		1991 TOTAL CUM	1992 SMALL Daily	1992 SMALL CUM b	1992 LARGE Daily	1992 LARGE CUM c		1992 TOTAL	1992 TOTAL CUM	DATE
25-Jun	<655	>655																				25-Jun
26-Jun	mm	mm																				01-Jul
27-Jun																						02-Jul
28-Jun																						03-Jul
29-Jun	0	0	0				1	1	0	2												04-Jul
30-Jun	1	0	1				1	1	0	2												05-Jul
01-Jul	1	1	2	0	1	1	1	2	0	3												06-Jul
02-Jul	1	2	3	0	3	3	2	2	0	4												07-Jul
03-Jul	1	4	5	0	6	6	3	3	0	6												08-Jul
04-Jul	4	6	10	0	7	7	7	3	0	10												09-Jul
05-Jul	4	7	11	1	8	9	10	4	0	14												10-Jul
06-Jul	4	7	11	3	10	13	15	5	0	20												11-Jul
07-Jul	4	9	13	8	16	24	17	8	0	25												12-Jul
08-Jul	7	19	26	9	17	26	20	15	0	35												13-Jul
09-Jul	19	29	48	14	20	34	22	22	0	44												14-Jul
10-Jul	34	44	78	14	29	43	27	29	0	56												15-Jul
11-Jul	42	50	92	17	44	61	39	44	0	83												16-Jul
12-Jul	45	52	97	22	65	87	48	74	0	122												17-Jul
13-Jul	57	60	117	23	82	105	74	96	0	170	3	45	0	48								18-Jul
14-Jul	71	66	137	23	86	109	97	123	0	220	6 d	73	0 d	78	5	5	7	7	0	13	13	19-Jul
15-Jul	77	78	155	26	92	118	118	144	0	262	8	83	0	90	9	15 d	12	19	0 d	21	34	20-Jul
16-Jul	83	98	181	27	98	125	137	174	1	311	18 d	97	0 d	115	12	27	16	35	0	28	62	21-Jul
17-Jul	103	94	197	35	108	143	142	192	1	334	36	116	0	152	15	43 d	21	56	0 d	37	99	22-Jul
18-Jul	109	97	206	27	122	149	155	228	1	383	49	122	0	171	20	63	26	82	0	46	145	23-Jul
19-Jul	110	99	209	40	127	167	187	269	1	456	62 d	135	0 d	197	24	87 d	29	111	0 d	53	196	24-Jul
20-Jul	112	102	214	40	134	174	202	278	1	480	76	155	0	231	32	119	27	138	0	59	257	25-Jul
21-Jul	114	103	217	40	139	179	202	280	1	482	89	180	1	269	17	136 d	19	157	1 d	36	293	26-Jul
22-Jul	117	107	224	41	145	186	213	288	1	501	104 d	205	1 d	308	8	144	5	162	1	13	306	27-Jul
23-Jul	117	107	224	41	155	196	231	300	1	531	120	229	1	348	18	162 d	14	176	1 d	32	338	28-Jul
24-Jul	117	107	224	42	161	203	241	311	1	552	127	241	1	367	27	189	24	200	1	51	389	29-Jul
25-Jul	117 f	109 1 f	226	42	165	207	246	317	1	563	145	255	1	399	14	203 f	16	218	1 f	30	419	30-Jul
26-Jul	117	111 1	228	43	169	212	251	326	1	577	162	268	1	409	1	204	9	225	1	10	429	31-Jul
27-Jul	119	114 1	233	43	172	215	253	330	1	583	167 d	282	1 d	419	3	207 d	12	237	1 d	15	444	01-Aug
28-Jul	119	117 1	236	44	173	217	254	334	1	588	161	287	1	428	5	212	15	252	1	20	464	02-Aug
29-Jul	120	117 1	237	44	176	220	255	334	1	589	167	269	1	436	6	217 d	14	266	1 d	19	483	03-Aug
30-Jul	120	116 1	236	44	178	222	255	334	1	589	171 d	271	1 d	442	6	223 d	13	279	1 d	19	502	04-Aug
31-Jul	121	119 1	240	44	178	222	258	336	1	592	173	274	1	447	6	229 f	12	291	1 f	18	520	05-Aug
01-Aug	121	121 1	242	44	181	225	258	336	1	592	173	275	1	448	10	239 f	9	300	1 f	19	539	06-Aug
02-Aug	121	122 1	243	44	184	228	257	338	1	595	173 d	277	1 d	450	7	246 f	0	300	1 f	7	546	07-Aug
03-Aug	121	122 1	243	44	186	230	267	340	1	597	173	280	1	453		246		300	1		546	08-Aug
04-Aug	121	122 1	243	44	187	231	267	343	1	600	173	283	1	456		246		300	1		546	09-Aug
05-Aug	121	122 1	243	44	191	235	257	343	1	600	174	287	1	461	0	246	0	300	1	0	546 d	10-Aug
06-Aug	121	122 1	243	44	191	235	257	343	1	600	175 d	290	1 d	464		246		300	1		546	11-Aug
07-Aug	121	124 1	245	44	191	235	257	343	1	600	175	291	1	465		246		300	1		546	12-Aug
08-Aug	121	124 1	245	44	191	235	257	344	1	601	175 d	292	1 d	467	0	246	1	301	1	1	547 d	13-Aug
09-Aug	125 b	124 1	245 b	44	191	235	258	345	1	603	176	294	1	470	1	247	1	302	1	2	549	14-Aug
10-Aug							258	345	1	603	177	295	1	472		247		302	1		549 e	15-Aug
11-Aug							258	345	1	603	177 d	296	1 d	473		247		302	1		549	
12-Aug							258	345	1	603	177 d	297	1 d	474		247		302	1		549	
13-Aug							258	345	1	603	177	298	1	475		247		302	1		549	
14-Aug																						
15-Aug																						
Total	121	124	245	44	191	235	258	345	1	603	177	298	1	475	247		302			549 f	549	
% of Total C	49%	51%		19%	81%		43%	57%			37%	63%			45%		55%					

- Continued -

655 mm ÷ 25.4 = 25.78"

Table XX. Cumulative historical **CHINOOK** salmon catch in department test wheel near Nenana, 1988 through 1992, and 1995 through 2004.

Percy Duyck, Sr., (1988-1994);
Percy Duyck, Jr., (1995-1996);
Terry Duyck, (1997-1999)
Jack Duyck, (2000)
Paul Kleinschmidt (2001-2004)

Test Fish Wheel Operators:
Percy Duyck, Sr., (1988-1994)
Percy Duyck, Jr., (1995-1996)

DATE	1995 a SMALL Daily	1995 a SMALL CUM b	1995 a LARGE Daily	1995 a LARGE CUM c	1995 a DAILY TOTAL	1995 a TOTAL CUM
25-Jun						
26-Jun						
27-Jun						
28-Jun						
29-Jun						
30-Jun						
1-Jul						
2-Jul						
3-Jul						
4-Jul						
5-Jul						
6-Jul						
7-Jul						
8-Jul						
9-Jul						
10-Jul						
11-Jul	2	2 f	5	5 f	7	7
12-Jul	6	7 f	15	20 f	20	27
13-Jul	13	20 f	81	101 f	94	121
14-Jul	10	30	33	134	43	164
15-Jul	15	45	20	154	35	199
16-Jul	19	64	17	171	36	235
17-Jul	33	97	33	204	66	301
18-Jul	34	131 f	32	236 f	66	367
19-Jul	16	147	38	274	54	421
20-Jul	9	156 g	11	285 g	20	441
21-Jul	3	159 f g	21	306 f g	24	465
22-Jul	18	177	39	345	57	522
23-Jul	20	197 f	28	373 f	48	570
24-Jul	6	203	12	385	18	588
25-Jul	8	211	8	393	16	604
26-Jul	7	218 f	13	406 f	20	624
27-Jul	1	219	8	414	9	633
28-Jul	3	222	10	424	13	646
29-Jul	1	223 f	1	425 f	2	648
30-Jul	1	224 f	3	428 f	4	652
31-Jul	1	225 h	5	433 h	6	658
1-Aug	1	226	3	436	4	662
2-Aug	1	227	3	439	4	666
3-Aug	0	227 f	2	441 f	2	668
4-Aug	0	227 d	4	445 d	4	672
5-Aug	0	227 f	5	450 f	5	677
6-Aug	0	227 f	1	451 f	1	678
7-Aug	0	227	0	451	0	678
8-Aug	0	227	0	451	0	678
9-Aug	0	227 j	0	451 j	0	678
10-Aug	0	227 j	0	451 j	0	678
11-Aug	0	227	0	451	0	678
12-Aug	1	228	0	451	1	679
13-Aug	1	229	3	454	4	683
14-Aug	0	229	0	454	0	683
15-Aug	0	229	0	454	0	683
Total	229		454		683	
% of Catch	34%		66%			

DATE	1996 a SMALL DAILY	1996 a SMALL CUM b	1996 a LARGE DAILY	1996 a LARGE CUM c	1996 a DAILY TOTAL	1996 a TOTAL CUM
25-Jun						
26-Jun						
27-Jun						
28-Jun						
29-Jun						
30-Jun						
1-Jul						
2-Jul						
3-Jul	7	7 f	8	8 0.04 f	15	15
4-Jul	5	12 f	0	8 0.05 f	5	20
5-Jul	9	21	5	13 0.08	14	34
6-Jul	16	36	16	29 0.15	31	65
7-Jul	17	53	11	40 0.22	28	93
8-Jul	14	67	17	57 0.29	31	124
9-Jul	22	89	15	72 0.38	37	161
10-Jul	21	110	9	81 0.45	30	191
11-Jul	16	126 k	7	88 0.51 k	25	216
12-Jul	15	143	14	102 0.57	29	245
13-Jul	15	158 l	5	107 0.62 l	20	265
14-Jul	10	168	8	115 0.66	18	283
15-Jul	17	185	7	122 0.72	24	307
16-Jul	12	197	3	125 0.75	15	322
17-Jul	11	208	3	128 0.79	14	336
18-Jul	6	214	2	130 0.81	8	344
19-Jul	3	217 h	1	131 0.81 h	4	348
20-Jul	6	223 f	2	133 0.83 f	8	356
21-Jul	4	227 f	7	140 0.86 f	11	367
22-Jul	2	229	6	146 0.88	8	375
23-Jul	2	231	4	150 0.89	6	381
24-Jul	0	231 h	4	154 0.90 h	4	385
25-Jul	2	233 f	2	156 0.91 f	4	389
26-Jul	0	233 f	7	163 0.93 f	7	396
27-Jul	0	233 h	7	170 0.94 h	7	403
28-Jul	1	234 f	2	172 0.96 f	3	406
29-Jul	0	234	4	176 0.96	4	410
30-Jul	0	234 f	5	181 0.97 f	5	415
31-Jul	0	234	2	183 0.98	2	417
1-Aug	0	234	1	184 0.98	1	418
2-Aug	0	234	1	185 0.98	1	419
3-Aug	0	234	0	185 0.98	0	419
4-Aug	0	234	1	186 0.98	1	420
5-Aug	0	234	1	187 0.99	1	421
6-Aug	0	234	2	189 0.99	2	423
7-Aug	0	234	1	190 0.99	1	424
8-Aug	0	234	1	191 1.00	1	425
9-Aug	0	234	0	191 1.00	0	425
10-Aug	0	234	1	192 1.00	1	426
11-Aug	0	234	1	193 1.00	1	427
12-Aug	0	234	0	193 1.00	0	427
13-Aug	0	234	0	193 1.00	0	427
14-Aug	0	234	0	193 1.00	0	427
15-Aug	0	234	1	194 1.00	1	428
Total	234		194		428	
% of Catch	55%		45%			

DATE	1997 b SMALL DAILY	1997 b SMALL CUM b	1997 b LARGE DAILY	1997 b LARGE CUM c	1997 b DAILY TOTAL	1997 b TOTAL CUM
25-Jun						
26-Jun						
27-Jun						
28-Jun						
29-Jun						
30-Jun						
1-Jul	37	37	57	57 0	94	94
2-Jul	40	77	34	91 0	74	168
3-Jul	56	133	40	131 0	96	264
4-Jul	45	178	26	157 0	71	335
5-Jul	102	280 f	34	191 0 f	136	471
6-Jul	110	390	23	214 0	133	604
7-Jul	82	472	29	243 0	111	715
8-Jul	104	576	35	278 0	139	854
9-Jul	132	708	25	303 0	157	1,011
10-Jul	168	876	28	331 1	196	1,207
11-Jul	159	1,035	35	366 1	194	1,401
12-Jul	163	1,198	34	400 1	197	1,598
13-Jul	110	1,308 f	18	418 1 f	128	1,726
14-Jul	85	1,373	21	439 1	86	1,812
15-Jul	51	1,424	13	452 1	64	1,876
16-Jul	46	1,469	10	462 1	56	1,931
17-Jul	39	1,508	10	472 1	49	1,980
18-Jul	21	1,529	8	480 1	29	2,009
19-Jul	16	1,545	9	489 1	25	2,034
20-Jul	17	1,562	8	497 1	25	2,059
21-Jul	6	1,567	6	503 1	11	2,070
22-Jul	4	1,571	7	510 1	11	2,081
23-Jul	5	1,576 f	1	511 1 f	6	2,087
24-Jul	1	1,577 f	2	513 1 f	3	2,090
25-Jul	3	1,580 f	6	519 1 f	9	2,099
26-Jul	4	1,584	5	524 1	9	2,108
27-Jul	2	1,586 f	5	529 1 f	7	2,115
28-Jul	3	1,589 f	3	532 1 f	6	2,121
29-Jul	1	1,590	4	536 1	5	2,126
30-Jul	2	1,592	4	540 1	6	2,132
31-Jul	2	1,594 f	2	542 1 f	4	2,136
1-Aug	3	1,597 f	0	542 1 f	3	2,139
2-Aug	0	1,597	0	542 1	0	2,139
3-Aug	0	1,597	1	543 1	1	2,140
4-Aug	1	1,598	1	544 1	2	2,142
5-Aug	1	1,599	0	544 1 m	1	2,143
6-Aug						
7-Aug						
8-Aug						
9-Aug						
10-Aug						
11-Aug						
12-Aug						
13-Aug						
14-Aug						
15-Aug						
Total	1,599		544		2,143	
% of Catch	75%		25%			

Table XX. Cumulative historical CHINOOK salmon catch in department test wheel near Nenana, 1988 through 1992, and 1995 through 2004.

Percy Duyck, Sr., (1988-1994);
Percy Duyck, Jr., (1995-1996);
Terry Duyck, (1997-1999)
Jack Duyck, (2000)
Paul Kleinschmidt (2001-2004)

Test Fish Wheel Operators:
Percy Duyck, Sr., (1988-1994)
Percy Duyck, Jr., (1995-1996)

DATE	1995 a SMALL Daily	1995 a SMALL CUM b	1995 a LARGE Daily	1995 a LARGE CUM c	1995 a DAILY TOTAL	1995 a TOTAL CUM	1996 a SMALL DAILY	1996 a SMALL CUM b	1996 a LARGE DAILY	1996 a LARGE CUM c	1996 a DAILY TOTAL	1996 a TOTAL CUM	1997 a SMALL DAILY	1997 a SMALL CUM b	1997 a LARGE DAILY	1997 a LARGE CUM c	1997 a DAILY TOTAL	1997 a TOTAL CUM	DATE
						1995													
25-Jun																			25-Jun
26-Jun																			26-Jun
27-Jun																			27-Jun
28-Jun																			28-Jun
29-Jun																			29-Jun
30-Jun																			30-Jun
1-Jul													37	37	57	57	0	94	01-Jul
2-Jul													40	77	34	91	0	74	168	02-Jul
3-Jul							7	7 f	8	8	0.04 f	15	56	133	40	131	0	96	264	03-Jul
4-Jul							5	12 f	0	8	0.05 f	5	45	178	26	157	0	71	335	04-Jul
5-Jul							9	21	5	13	0.06	14	102	280 f	34	191	0 f	136	471	05-Jul
6-Jul							16	36	16	29	0.15	31	110	390	23	214	0	133	604	06-Jul
7-Jul							17	53	11	40	0.22	28	82	472	29	243	0	111	715	07-Jul
8-Jul							14	67	17	57	0.29	31	104	576	35	278	0	139	854	08-Jul
9-Jul							22	89	15	72	0.38	37	132	708	25	303	0	157	1,011	09-Jul
10-Jul							21	110	9	81	0.45	30	168	876	28	331	1	196	1,207	10-Jul
11-Jul	2	2 f	6	6 f	7	7	18	128 k	7	88	0.51 k	25	159	1,035	35	366	1	194	1,401	11-Jul
12-Jul	6	7 f	15	20 f	20	27	15	143	14	102	0.57	29	183	1,198	34	400	1	197	1,598	12-Jul
13-Jul	13	20 f	81	101 f	94	121	15	158 l	5	107	0.62 l	20	110	1,308 f	18	418	1 f	128	1,726	13-Jul
14-Jul	10	30	33	134	43	164	10	168	8	115	0.66	18	65	1,373	21	439	1	86	1,812	14-Jul
15-Jul	15	45	20	154	35	199	17	185	7	122	0.72	24	51	1,424	13	452	1	64	1,876	15-Jul
16-Jul	19	64	17	171	36	235	12	197	3	125	0.75	15	45	1,469	10	462	1	55	1,931	16-Jul
17-Jul	33	97	33	204	66	301	11	208	3	128	0.79	14	39	1,508	10	472	1	49	1,980	17-Jul
18-Jul	34	131 f	32	236 f	66	367	6	214	2	130	0.81	8	21	1,529	8	480	1	29	2,009	18-Jul
19-Jul	16	147	38	274	54	421	3	217 h	1	131	0.81 h	4	16	1,545	9	489	1	25	2,034	19-Jul
20-Jul	8	155 g	11	285 g	20	441	6	223 f	2	133	0.83 f	8	17	1,562	8	497	1	25	2,059	20-Jul
21-Jul	3	159 f g	21	306 f g	24	465	4	227 f	7	140	0.86 f	11	5	1,567	6	503	1	11	2,070	21-Jul
22-Jul	18	177	39	345	57	522	2	229	6	146	0.88	8	4	1,571	7	510	1	11	2,081	22-Jul
23-Jul	20	197 f	28	373 f	48	570	2	231	4	150	0.89	6	5	1,576 f	1	511	1 f	6	2,087	23-Jul
24-Jul	6	203	12	385	18	588	0	231 h	4	154	0.90 h	4	1	1,577 f	2	513	1 f	3	2,090	24-Jul
25-Jul	8	211	8	393	16	604	2	233 f	2	156	0.91 f	4	3	1,580 f	6	519	1 f	9	2,099	25-Jul
26-Jul	7	218 j	13	406 f	20	624	0	233 f	7	163	0.93 f	7	4	1,584	5	524	1	9	2,108	26-Jul
27-Jul	1	219	8	414	9	633	0	233 h	7	170	0.94 h	7	2	1,586 f	5	529	1 f	7	2,115	27-Jul
28-Jul	3	222	10	424	13	646	1	234 f	2	172	0.95 f	3	3	1,589 f	3	532	1 f	6	2,121	28-Jul
29-Jul	1	223 f	1	425 f	2	648	0	234	4	176	0.96	4	1	1,590	4	536	1	5	2,126	29-Jul
30-Jul	1	224 f	3	428 f	4	652	0	234 f	5	181	0.97 f	5	2	1,592	4	540	1	6	2,132	30-Jul
31-Jul	1	225 h	5	433 h	6	658	0	234	2	183	0.98	2	2	1,594 f	2	542	1 f	4	2,136	31-Jul
1-Aug	1	226	3	436	4	662	0	234	1	184	0.98	1	3	1,597 f	0	542	1 f	3	2,139	01-Aug
2-Aug	1	227	3	439	4	666	0	234	1	185	0.98	1	0	1,597	0	542	1	0	2,139	02-Aug
3-Aug	0	227 f	2	441 f	2	668	0	234	0	185	0.98	0	0	1,597	1	543	1	1	2,140	03-Aug
4-Aug	0	227 g	4	445 g	4	672	0	234	1	186	0.98	1	1	1,598	1	544	1	2	2,142	04-Aug
5-Aug	0	227 f	5	450 f	5	677	0	234	1	187	0.99	1	1	1,599	0	544	1 m	1	2,143	05-Aug
6-Aug	0	227 f	1	451 f	1	678	0	234	2	189	0.99	2								06-Aug
7-Aug	0	227	0	451	0	678	0	234	1	190	0.99	1								07-Aug
8-Aug	0	227	0	451	0	678	0	234	1	191	1.00	1								08-Aug
9-Aug	0	227 j	0	451 j	0	678	0	234	0	191	1.00	0								09-Aug
10-Aug	0	227 j	0	451 j	0	678	0	234	1	192	1.00	1								10-Aug
11-Aug	0	227	0	451	0	678	0	234	1	193	1.00	1								11-Aug
12-Aug	1	228	0	451	1	679	0	234	0	193	1.00	0								12-Aug
13-Aug	1	229	3	454	4	683	0	234	0	193	1.00	0								13-Aug
14-Aug	0	229	0	454	0	683	0	234	0	193	1.00	0								14-Aug
15-Aug	0	229	0	454	0	683	0	234	1	194	1.00	1								15-Aug
Total	229		454		683		234		194			428	1,599		544			2,143		
% of Catch	34%		66%				55%		45%				75%		25%					

DATE	1998 a SMALL DAILY	SMALL CUM b	LARGE DAILY	LARGE CUM c		DAILY TOTAL	TOTAL CUM
25-Jun							
26-Jun							
27-Jun							
28-Jun							
29-Jun							
30-Jun							
1-Jul	0	0	31	31	0	31	31
2-Jul	1	1	73	104	0	74	105
3-Jul	3	4	61	165	0	64	169
4-Jul	1	5	57	222	0	58	227
5-Jul	3	8	50	272	0	53	280
6-Jul	8	16	36	308	0	44	324
7-Jul	1	17	18	326	0	19	343
8-Jul	1	18	14	340	0	15	358
9-Jul	3	21	23	363	0	26	384
10-Jul	4	25	18	381	0	22	406
11-Jul	2	27	25	406	0	27	433
12-Jul	13	40	33	439	0	46	479
13-Jul	8	49	42	481	0	51	530
14-Jul	16	65	31	512	1	47	577
15-Jul	24	89	33	545	1	57	634
16-Jul	29	118	37	582	1	66	700
17-Jul	25	143	43	625	1	68	768
18-Jul	6	149	35	660	1	41	809
19-Jul	8	157	36	696	1	44	853 f
20-Jul	9	166	14	710	1	23	876 h
21-Jul	15	181	11	721	1	26	902
22-Jul	10	191	10	731	1	20	922
23-Jul	7	198	8	739	1	15	937
24-Jul	1	199	15	754	1	16	953
25-Jul	10	209	15	769	1	25	978
26-Jul	3	212	10	779	1	13	991
27-Jul	4	216	16	795	1	20	1,011
28-Jul	6	222	15	810	1	21	1,032 f
29-Jul	3	225	17	827	1	20	1,052
30-Jul	6	231	16	843	1	22	1,074
31-Jul	4	235	10	853	1	14	1,088
1-Aug	4	239	7	860	1	11	1,099
2-Aug	4	243	6	866	1	10	1,109
3-Aug	0	243	4	870	1	4	1,113
4-Aug	3	246	0	870	1	3	1,116
5-Aug	1	247	3	873	1	4	1,120
6-Aug	3	250	3	876	1	6	1,126
7-Aug	2	252	2	878	1	4	1,130
8-Aug	1	253	3	881	1	4	1,134
9-Aug	1	254	3	884	1	4	1,138
10-Aug	1	255	1	885	1	2	1,140
11-Aug	0	255	0	885	1	0	1,140
12-Aug	1	256	2	887	1	3	1,143
13-Aug	0	256	2	889	1	2	1,145
14-Aug	0	256	3	892	1	3	1,148
15-Aug	0	256	3	895	1 n	3	1,151
Totals	256		895				1,151
% of Catch	22%		78%				

DATE	1999 a SMALL DAILY	SMALL CUM b	LARGE DAILY	LARGE CUM c		DAILY TOTAL	TOTAL CUM
25-Jun							
26-Jun							
27-Jun							
28-Jun							
29-Jun							
30-Jun							
1-Jul							
2-Jul							
3-Jul							
4-Jul							
5-Jul	0	0	1	1		1	1
6-Jul	0	0	2	3		2	3
7-Jul	0	0	10	13		10	13
8-Jul	0	0	7	20		7	20
9-Jul	1	1	11	31		12	32
10-Jul	1	2	30	61		31	63
11-Jul	8	10	41	102		49	112
12-Jul	8	18	35	137		43	155
13-Jul	11	29	27	164		38	193
14-Jul	16	45	12	176		28	221
15-Jul	25	70	32	208		57	278
16-Jul	16	86	38	246		54	332
17-Jul	15	101	20	266		35	367
18-Jul	6	107	8	274		14	381
19-Jul	5	112	29	303		34	415
20-Jul	23	135	16	319		39	454
21-Jul	6	141	16	335		22	476
22-Jul	10	151	21	356		31	507
23-Jul	16	167	16	372		32	539
24-Jul	10	177	9	381		19	558
25-Jul	6	183	3	384		9	567
26-Jul	11	194	11	395		22	589
27-Jul	8	202	8	403		16	605
28-Jul	8	210	5	408		13	618
29-Jul	3	213	4	412		7	625
30-Jul	2	215	10	422		12	637
31-Jul	1	216	7	429		8	645
1-Aug	0	216	7	436		7	652
2-Aug	1	217	3	439		4	656
3-Aug	0	217	5	444		5	661
4-Aug	0	217	0	444		0	661
5-Aug	0	217	0	444		0 n	661
6-Aug							
7-Aug							
8-Aug							
9-Aug							
10-Aug							
11-Aug							
12-Aug							
13-Aug							
14-Aug							
15-Aug							
Totals	217		444			661	
% of Catch	33%		67%				

DATE	2000 a SMALL DAILY	SMALL CUM b	LARGE DAILY	LARGE CUM c		DAILY TOTAL	TOTAL CUM
25-Jun							
26-Jun							
27-Jun							
28-Jun							
29-Jun							
30-Jun							
01-Jul							
02-Jul							
03-Jul							
04-Jul	0	0	4	4		4	4
05-Jul	0	0	1	1		1	5
06-Jul	5	5	5	6		10	15
07-Jul	2	7	3	9		5	20
08-Jul	6	13	9	18		15	35
09-Jul	8	21	15	33		23	58
10-Jul	11	32	17	50		28	86
11-Jul	1	33	9	59		10	96
12-Jul	4	37	4	63		8	104
13-Jul	2	39	1	64		3	107
14-Jul	1	40	0	64		1	108
15-Jul	8	48	12	76		20	128
16-Jul	9	57	14	90		23	151
17-Jul	4	61	3	93		7	158
18-Jul	1	62	1	94		2	160
19-Jul	0	62 m	0	94 m		0	160
20-Jul	0	62 m	0	94 m		0	160
21-Jul	0	62 m	0	94 m		0	160
22-Jul	0	62 m	0	94 m		0	160
23-Jul	0	62 m	0	94 m		0	160
24-Jul	0	62 m	0	94 g		0	160
25-Jul	0	62 f	7	101 f		7	167
26-Jul	0	62	3	104		3	170
27-Jul	1	63	2	106		3	173
28-Jul	0	63	1	107		1	174
29-Jul	0	63	0	107		0	174
30-Jul	1	64	3	110		4	178
31-Jul	1	65	0	110		1	179
01-Aug	1	66	1	111		2	181
02-Aug	0	66	1	112		1	182
03-Aug	0	66	1	113		1	183
04-Aug	0	66	1	114		1	184
05-Aug	0	66	0	114		0	184 n
06-Aug							
07-Aug							
08-Aug							
09-Aug							
10-Aug							
11-Aug							
12-Aug							
13-Aug							
14-Aug							
15-Aug							
Totals	66		118			184	
% of Catch	36%		64%				

DATE	2001 a SMALL DAILY	SMALL CUM b	LARGE DAILY	LARGE CUM c	DAILY TOTAL	Percent Cum	TOTAL CUM
25-Jun							
26-Jun							
27-Jun							
28-Jun							
29-Jun							
30-Jun							
1-Jul							
2-Jul							
3-Jul	2	2 f	1	1 f	3	0.00	3 f
4-Jul	1	3	1	2	2	0.01	5
5-Jul	8	11 f	8	10 f	16	0.02	21 f
6-Jul	13	24	5	15	18	0.04	39
7-Jul	20	44	15	30	35	0.08	74
8-Jul	25	69	22	52	47	0.13	121
9-Jul	20	89	13	65	33	0.17	154
10-Jul	11	100	8	73	19	0.19	173
11-Jul	8	108	2	75	8	0.20	181
12-Jul	15	121	5	80	20	0.22	201
13-Jul	21	142	10	90	31	0.26	232
14-Jul	21	163	12	102	33	0.29	265
15-Jul	23	186	31	133	54	0.36	319
16-Jul	26	212	27	160	53	0.41	372
17-Jul	61	273	52	212	113	0.54	485
18-Jul	57	330	31	243	88	0.63	573
19-Jul	36	366	19	262	55	0.69	628
20-Jul	45	411	19	281	64	0.77	692
21-Jul	34	445	33	314	67	0.84	759
22-Jul	11	456	7	321	18	0.88	777
23-Jul	11	467 f	8	329 f	19	0.88	786 f
24-Jul	12	479 f	1	330 f	13	0.89	909 f
25-Jul	8	487	2	332	10	0.91	819
26-Jul	4	491	3	335	7	0.91	826
27-Jul	1	492	0	335	1	0.91	827
28-Jul	12	504 f	2	337 f	14	0.93	841 f
29-Jul	6	510	2	339	8	0.94	849
30-Jul	6	516	5	344	13	0.95	862
31-Jul	5	523 f	14	358 f	19	0.97	881 f
1-Aug	6	529 f	6	364 f	12	0.98	893 f
2-Aug	4	533 d	3	367 d	7	1.00	900 d
3-Aug	2	535 f	0	367 f	2	1.00	902 f
4-Aug		535 g		367 g		1.00	902 g
5-Aug		535 g		367 g		1.00	902 g
6-Aug		535 g		367 g		1.00	902 g
7-Aug		535 g		367 g		1.00	902 g
8-Aug		535 g		367 g		1.00	902 g
9-Aug		535 g		367 g		1.00	902 g
10-Aug		535 g		367 g		1.00	902 g
11-Aug		535 g		367 g		1.00	902 g
12-Aug		535 g		367 g		1.00	902 g
13-Aug		535 g		367 g		1.00	902 g
14-Aug		535 g		367 g		1.00	902 g
15-Aug	2	537 f	0	367 f	2	1.00	904 g
Totals	537		367		904		
% of Catch	59%		41%				

DATE	2002 a SMALL DAILY	SMALL CUM b	LARGE DAILY	LARGE CUM c	DAILY TOTAL	Percent Cum	TOTAL CUM
25-Jun							
26-Jun							
27-Jun							
28-Jun							
29-Jun							
30-Jun							
1-Jul	91	91 f	48	48 f	139	0.09	139
2-Jul	93	184	46	94	139	0.17	278
3-Jul	37	221	52	146	89	0.23	367
4-Jul	54	275	43	189	97	0.29	464
5-Jul	21	296 f	28	217 f	49	0.32	513
6-Jul	14	310	5	222	19	0.33	532
7-Jul	19	329	7	229	26	0.35	558
8-Jul	25	354	5	234	30	0.37	588
9-Jul	27	381	8	243	35	0.39	624
10-Jul	42	423 f	18	261 f	60	0.43	684
11-Jul	74	497	22	283	96	0.49	780
12-Jul	101	598	47	330	148	0.58	928
13-Jul	123	721	35	365	158	0.68	1,086
14-Jul	78	799	22	387	100	0.74	1,186
15-Jul	68	867	32	419	100	0.80	1,286
16-Jul	65	932	20	439	85	0.85	1,371
17-Jul	52	984	13	452	65	0.90	1,436
18-Jul	23	1,007	18	470	41	0.92	1,477
19-Jul	11	1,018	10	480	21	0.94	1,498
20-Jul	12	1,030	13	493	22	0.95	1,520
21-Jul	8	1,038	10	503	18	0.96	1,538
22-Jul	4	1,042	9	509	13	0.97	1,551
23-Jul	4	1,046	3	512	7	0.97	1,558
24-Jul	2	1,048	2	514	4	0.98	1,562
25-Jul	1	1,049	5	519	6	0.98	1,568
26-Jul	1	1,050	4	523	5	0.98	1,573
27-Jul	1	1,051	2	525	3	0.98	1,576
28-Jul	1	1,052	6	531	7	0.99	1,583
29-Jul	2	1,054	4	535	6	0.99	1,589
30-Jul	3	1,057 f	0	535 f	3	0.99	1,592
31-Jul	0	1,057	0	535	0	0.99	1,592
1-Aug	2	1,059	3	538	5	1.00	1,597
2-Aug	2	1,061	0	538	2	1.00	1,599
3-Aug	0	1,061	0	538	0	1.00	1,599
4-Aug	0	1,061	1	539	1	1.00	1,600
5-Aug	0	1,061	1	540	1	1.00	1,601
Totals	1,061		540		1,601		
% of Catch	66%		34%				

DATE	2003 a SMALL DAILY	SMALL CUM b	LARGE DAILY	LARGE CUM c	DAILY TOTAL	TOTAL CUM
25-Jun						
26-Jun						
27-Jun						
28-Jun						
29-Jun						
30-Jun	40	40 f	51	51 f	91	0 f
1-Jul	58	98	108	159	166	166
2-Jul	79	177	181	340	260	426
3-Jul	61	238 f	443	783 f	504	930 f
4-Jul	56	294 f	333	1,115 f	389	1,319 f
5-Jul	53	347	209	1,325	262	1,581
6-Jul	43	390 f	142	1,467 f	185	1,766 f
7-Jul	42	432	150	1,617	192	1,958
8-Jul	39	471	112	1,729	151	2,109
9-Jul	27	498 f	103	1,832 f	130	2,239 f
10-Jul	23	521 f	138	1,970 f	161	2,400 f
11-Jul	19	540	66	2,036	85	2,485
12-Jul	10	550	47	2,083	57	2,542
13-Jul	11	561	36	2,119	47	2,589
14-Jul	5	566 f	29	2,148 f	34	2,623 f
15-Jul	12	578 f	20	2,168 f	32	2,655 f
16-Jul	9	587 f	18	2,186 f	27	2,682 f
17-Jul	-	587 g	-	2,186 g	-	2,682 g
18-Jul	-	587 g	-	2,186 g	-	2,682 g
19-Jul	-	587 g	-	2,186 g	-	2,682
20-Jul	-	587 g	-	2,186 g	-	2,682 g
21-Jul	-	587 g	-	2,186 g	-	2,682 g
22-Jul	0	587 f	4	2,190 f	4	2,686 f
23-Jul	0	587 f	2	2,192 f	2	2,688 f
24-Jul	0	587 f	2	2,194 f	2	2,690 f
25-Jul	2	589 f	1	2,195 f	3	2,693 f
26-Jul	1	590	1	2,196	2	2,695
27-Jul	0	590 f	3	2,199 f	3	2,698 f
28-Jul	-	590 g	-	2,199 g	-	2,698 g
29-Jul	-	590 g	-	2,199 g	-	2,698 g
30-Jul						
31-Jul						
01-Aug						
02-Aug						
03-Aug						
04-Aug						
05-Aug						
06-Aug						
07-Aug						
08-Aug						
09-Aug						
10-Aug						
11-Aug						
12-Aug						
13-Aug						
14-Aug						
15-Aug						
Totals	590		2,199		2789	
% of Catch	21%		79%			

DATE	2004 a p SMALL DAILY	SMALL CUM b	LARGE DAILY	LARGE CUM c	DAILY TOTAL	TOTAL CUM
25-Jun						
26-Jun						
27-Jun						
28-Jun						
29-Jun						
30-Jun						
1-Jul	0	0	2	2	2	2
2-Jul	4	4	10	12	14	16
3-Jul	11	15	17	29	28	44
4-Jul	18	33	43	72	61	105
5-Jul	20	53	36	107	55	160
6-Jul	11	64	33	140	44	204
7-Jul	10	74	28	168	38	242
8-Jul	11	85	38	206	49	291
9-Jul	15	100	34	240	49	340
10-Jul	8	108	47	287	55	395
11-Jul	9	117	45	332	54	449
12-Jul	9	126	47	379	56	505
13-Jul	14	140	41	420	55	560
14-Jul	7	147	42	462	49	609
15-Jul	17	164	73	535	90	699
16-Jul	8	172	37	572	45	744
17-Jul	2	174	11	583	13	757
18-Jul	6	180	12	595	21	778
19-Jul	5	185	11	606	16	794
20-Jul	2	190	8	614	10	804
21-Jul	1	191	7	621	8	812
22-Jul	0	191	5	626	5	817
23-Jul	2	193	7	633	9	826
24-Jul	1	194	3	636	4	830
25-Jul	1	195	7	643	8	838
26-Jul	5	200	18	661	23	861
27-Jul	1	201	13	674	14	875
28-Jul	1	202	6	680	7	882
29-Jul	3	205	8	688	11	893
30-Jul	1	206	9	697	10	903
31-Jul	1	207	4	701	5	908
1-Aug	4	211	6	707	10	918
2-Aug	1	212	6	713	7	925
3-Aug	1	213	5	718	6	931
4-Aug	2	215	5	723	7	938
5-Aug	0	215	3	726	3	941
6-Aug	0	215	2	728	2	943
7-Aug	1	216	1	729	2	945
8-Aug						
9-Aug						
10-Aug						
11-Aug						
12-Aug						
13-Aug						
14-Aug						
15-Aug						
Totals	216		729		945	
% of Catch	23%		77%			

DATE	2005 SMALL DAILY	SMALL CUM	LARGE DAILY	LARGE CUM	DAILY TOTAL	Percent Cum	TOTAL CUM
25-Jun							
26-Jun							
27-Jun							
28-Jun							
29-Jun							
30-Jun							
1-Jul							
2-Jul							
3-Jul							
4-Jul							
5-Jul							
6-Jul							
7-Jul							
8-Jul							
9-Jul							
10-Jul							
11-Jul							
12-Jul							
13-Jul							
14-Jul							
15-Jul							
16-Jul							
17-Jul							
18-Jul							
19-Jul							
20-Jul							
21-Jul							
22-Jul							
23-Jul							
24-Jul							
25-Jul							
26-Jul							
27-Jul							
28-Jul							
29-Jul							
30-Jul							
31-Jul							
1-Aug							
2-Aug							
3-Aug							
4-Aug							
5-Aug							
6-Aug							
7-Aug							
8-Aug							
9-Aug							
10-Aug							
11-Aug							
12-Aug							
13-Aug							
14-Aug							
15-Aug							
Totals							
% of Catch							

DATE	2006 SMALL DAILY	SMALL CUM	LARGE DAILY	LARGE CUM	DAILY TOTAL	Percent Cum	TOTAL CUM	DATE
25-Jun								25-Jun
26-Jun								26-Jun
27-Jun								27-Jun
28-Jun								28-Jun
29-Jun								29-Jun
30-Jun								30-Jun
1-Jul								01-Jul
2-Jul								02-Jul
3-Jul								03-Jul
4-Jul								04-Jul
5-Jul								05-Jul
6-Jul								06-Jul
7-Jul								07-Jul
8-Jul								08-Jul
9-Jul								09-Jul
10-Jul								10-Jul
11-Jul								11-Jul
12-Jul								12-Jul
13-Jul								13-Jul
14-Jul								14-Jul
15-Jul								15-Jul
16-Jul								16-Jul
17-Jul								17-Jul
18-Jul								18-Jul
19-Jul								19-Jul
20-Jul								20-Jul
21-Jul								21-Jul
22-Jul								22-Jul
23-Jul								23-Jul
24-Jul								24-Jul
25-Jul								25-Jul
26-Jul								26-Jul
27-Jul								27-Jul
28-Jul								28-Jul
29-Jul								29-Jul
30-Jul								30-Jul
31-Jul								31-Jul
1-Aug								01-Aug
2-Aug								02-Aug
3-Aug								03-Aug
4-Aug								04-Aug
5-Aug								05-Aug
6-Aug								06-Aug
7-Aug								07-Aug
8-Aug								08-Aug
9-Aug								09-Aug
10-Aug								10-Aug
11-Aug								11-Aug
12-Aug								12-Aug
13-Aug								13-Aug
14-Aug								14-Aug
15-Aug								15-Aug
Totals								
% of Catch								

a Fish wheel operated with a live box.
b Small chinook salmon are 14 pounds or less.
c Large chinook salmon are greater than 14 pounds.
d Counts are average of preceeding and following daily counts.
f Less than 24 hours counted; expanded to estimate 24 hour count.
g High water
h Greater than 24 hours counted, adjusted to estimate 24 hour count.
j No load. Lead knocked out sometime late Thursday (8/3) night or early Friday (8/4) morning.
k Hole in bottom of live box lost some fish(?).
l Possibly fish taken from livebox during afternoon of 7/13; no kings or large chums in livebox.
m Fish wheel basket destroyed by log.
n Last day of counts during summer season.
o Video monitoring of fish wheel
p Counts reflect actual number of fish observed, not expanded for 24 hour count.

Table III. Summary of data collected from adult male king salmon at Tanana, AK from July 12 to 17, 1999.

Field #	Sex	inches	cm	kg	gross	culture	histolo
T 3	m	34.5	87.6	7.3	nvl	-/-	
T 28	m	32.0	81.3	6.0	nvl	-/-	-
T 29	m	34.0	86.4	5.8	nvl	-/-	
T 31	m	36.0	91.4	7.5	nvl	-/-	
T 33	m	34.0	86.4	7.0	h	+/+	
T 35	m	39.5	100.3	10.5	h	+/+	+
T 48	m	34.0	86.4	6.0	nvl	-/-	
T 50	m	33.5	85.1	8.0	nvl	-/-	
T 53	m	41.5	105.4	13.5	nvl	-/-	?
T 54	m	4.0	10.2	11.0	nvl	-/-	
T 55	m	34.5	87.6	6.5	nvl	-/-	
T 57	m	36.5	92.7	9.0	nvl	+/+	
T 58	m	38.0	96.5	9.0	nvl	-/-	
T 59	m	37.0	94.0	7.5	nvl	-/-	
T 60	m	35.5	90.2	7.0	nvl	-/-	
T 72	m	37.0	94.0	8.5	h	+/+	
total= 16	mean =	33.8	86.0	8.1	3.0	4.0	
	stdev =	8.3	21.1	2.1			

gross % positive males =	18.8
additional % positive by culture =	6.0
total % positive males =	24.8

key: h= heart; l = liver; sp = spleen; fl = flesh; sk = skin; nvl = no visible lesions

From Kocan 1999 & Hershberger

Table IV. Summary of data collected from adult female king salmon at Tanana, AK from July 12 to 17, 1999.

Field #	Sex	inches	cm	kg	gross	culture	histolog
T 2	f	39.0	99.1	11.5	nvl	-/-	
T 26	f	33.0	83.8	5.6	h	+/+	
T 27	f	38.0	96.5	10.5	nvl	-/-	
T 30	f	35.0	88.9	7.3	nvl	-/-	
T 34	f	39.0	99.1	9.2	nvl	-/+	
T 36	f	34.5	87.6	6.0	nvl	-/-	
T 38	f	36.5	92.7	9.0	h	+/+	+
T 39	f	34.0	86.4	7.0	h	+/+	
T 41	f	40.0	101.6	11.0	h	+/+	+
T 42	f	36.0	91.4	8.0	nvl	-/-	
T 43	f	36.5	92.7	9.0	nvl	-/-	
T 46	f	37.0	94.0	9.5	h(?)	-/-	
T 47	f	37.0	94.0	9.0	nvl	-/-	
T 56	f	36.5	92.7	8.0	nvl	-/-	
T 61	f	40.0	101.6	11.0	l, sk	+/+	+
T 62	f	36.0	91.4	8.5	nvl	+/+	
T 63	f	33.5	85.1	5.5	h, l, fl	+/+	+
T 65	f	41.0	104.1	13.0	h, l, fl	+/+	
T 66	f	37.5	95.3	10.0	h, l, sp, fl	+/+	
T 67	f	39.5	100.3	10.5	nvl	-/-	
T 68	f	36.0	91.4	8.0	nvl	-/-	-
T 69	f	39.0	99.1	9.0	h, l, fl	+/+	+
T 70	f	36.0	91.4	7.5	h	+/+	
T 73	f	42.0	106.7	13.0	nvl	-/-	
T 74	f	35.0	88.9	7.0	nvl	+/+	
total = 25	mean =	37.1	94.2	8.9	8.0	13	
	stdev =	2.4	6.0	2.1			

% gross positive females=	32.0
additional positive by culture =	20.0
Total % positive females =	**52.0**

key: h= heart; l = liver; sp = spleen; fl = flesh; sk = skin; nvl = no visible lesions

T 71	f	Sheefish	(Inconnu)	-	h	-/-

Stenodus leucichthys

Table V. Summary of data collected from king salmon Jacks at Tanana, AK from July 12 to 17, 1999.

lbs. = kg x 2.2

Field #	Sex	inches	cm	kg	gross	culture	h
T 1	m	29.5	74.9	5.0 11	nvl	-/-	
T 4	m	31.5	80.0	4.5 9.5	nvl	-/+	
T 5	m	30.0	76.2	4.1 9.02	nvl	-/-	
T 6	m	25.0	63.5	2.5 5.5	nvl	-/-	
T 7	m	28.5	72.4	3.5 7.7	h	+/+	
T 8	m	30.0	76.2	5.0 11	nvl	-/-	
T 9	m	28.0	71.1	3.7 8.14	nvl	-/-	
T 10	m	27.0	68.6	3.0 6.6	nvl	-/-	
T 11	m	27.5	69.9	3.0 6.6	nvl	-/-	
T 12	m	25.5	64.8	2.9 6.38	nvl	-/-	
T 13	m	26.5	67.3	3.0 6.6	nvl	-/-	
T 14	m	26.0	66.0	2.9 6.38	nvl	-/-	
T 15	m	28.0	71.1	3.8 8.36	nvl	-/-	
T 16	m	25.5	64.8	2.7 5.94	nvl	-/-	
T 17	m	28.0	71.1	3.7 8.14	nvl	-/-	
T 18	m	26.0	66.0	2.2 4.84	h,l	+/+	
T 19	m	27.0	68.6	2.9 6.38	nvl	-/-	
T 20	m	24.0	61.0	2.0 4.4	nvl	-/-	
T 21	m	25.5	64.8	2.2 4.84	nvl	-/-	
T 22	m	24.0	61.0	1.8 3.96	nvl	-/-	
T 23	m	24.5	62.2	1.7 3.74	nvl	-/-	
T 24	m	24.0	61.0	2.0 4.4	nvl	-/-	
T 25	m	22.5	57.2	1.2 2.64	nvl	-/-	
T 32	f	33.0	83.8	5.0 11	nvl	-/-	
T 37	m	32.0	81.3	4.9 10.78	nvl	-/-	
T 40	m	32.0	81.3	5.0 11	nvl	-/-	
T 44	m	29.0	73.7	4.0 8.8	nvl	+/+	
T 45	m	27.5	69.9	3.8 8.36	h	+/+	
T 49	f	30.5	77.5	5.0 11	nvl	-/-	
T 51	m	28.0	71.1	3.5 8.36	nvl	-/-	
T 52	m	23.0	58.4	2.0 4.4	nvl	-/-	
T 75	m	32.0	81.3	5.0 11	h, l, fl	+/+	
32	mean =	27.5	69.9	3.4	4.0	6.0	
	stdev =	2.9	7.2	1.2			

% gross positive jacks =	12.
additional positive by culture =	9.4
Total % positive jacks =	18.

key: h= heart; l = liver; sp = spleen; fl = flesh; sk = skin; nvl = no visible lesions

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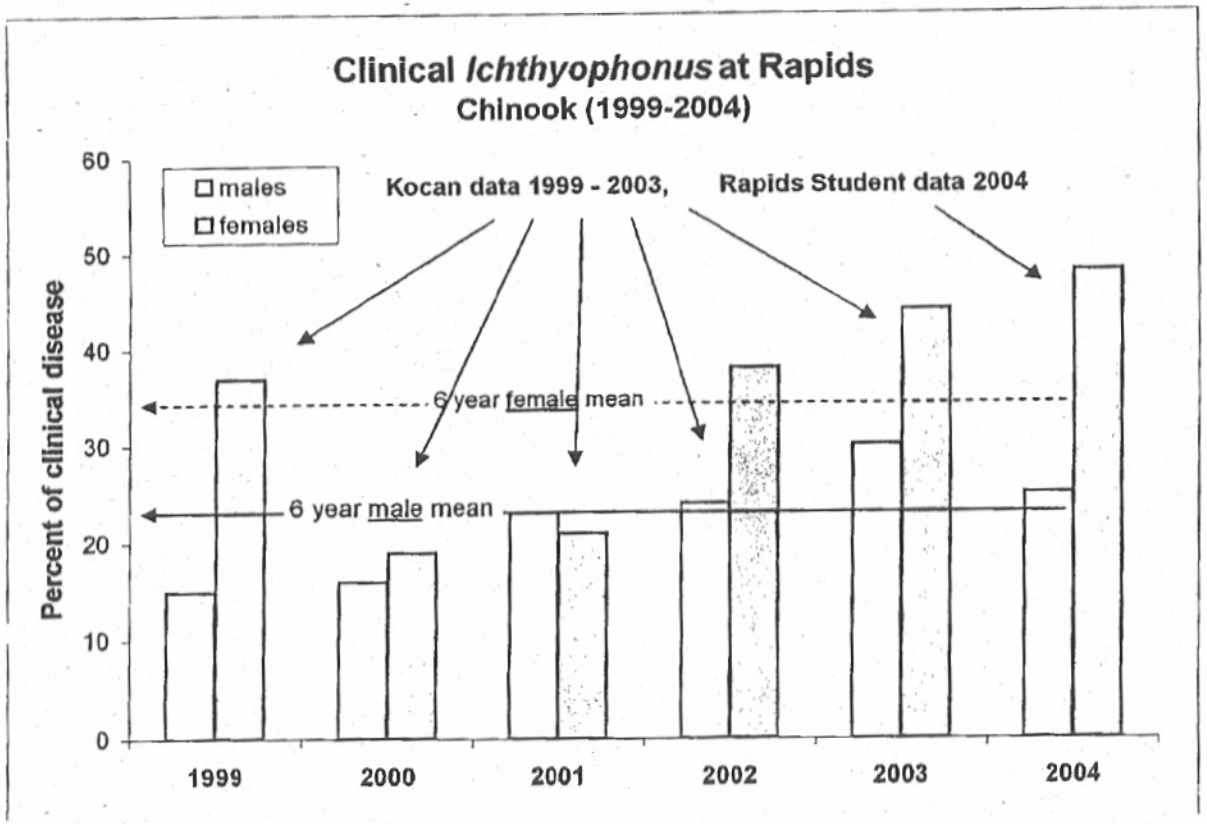
The relationships between fish health, metabolic rate, swimming performance and recovery in return-run sockeye salmon, *Oncorhynchus nerka* (Walbaum)

K B Tierney and A P Farrell

Abstract

The repeat swimming ability and oxygen uptake ($\dot{M}O_2$) of adult sockeye salmon, *Oncorhynchus nerka* (Walbaum), were assessed at ambient water temperatures at three field locations along their migration route. Following these measurements, internal and external fish condition was evaluated according to United States Environmental Protection Agency guidelines. Here we report on the physiological characteristics of fish having either moderate or severe levels of disease and injury. Routine oxygen uptake ($\dot{M}O_2$) did not differ between healthy fish and those with indices of ill health. In contrast, fish classified as sick, which included conditions of damaged internal organs, an *Ichthyophonus* spp. heart infection, a *Saprolegnia* spp. gill infection, and skin wounds, had a lower post-exercise $\dot{M}O_2$ and were unable to repeat their critical swim speed (U_{crit}) on the second swim test. Moderate levels of disease or injury did not significantly affect either U_{crit} or post-exercise $\dot{M}O_2$. We conclude that the ability of adult salmon to recover quickly from exercise may be a useful indicator of sublethal pathologies.


Clinical *Ichthyophonus* at Rapids
Chinook (1999-2004)
males
females
Kocan data 1999 - 2003,
Rapids Student data 2004
6 year female mean
6 year male mean
Percent of clinical disease
0
10
20
30
40
50
60
1999
2000
2001
2002
2003
2004

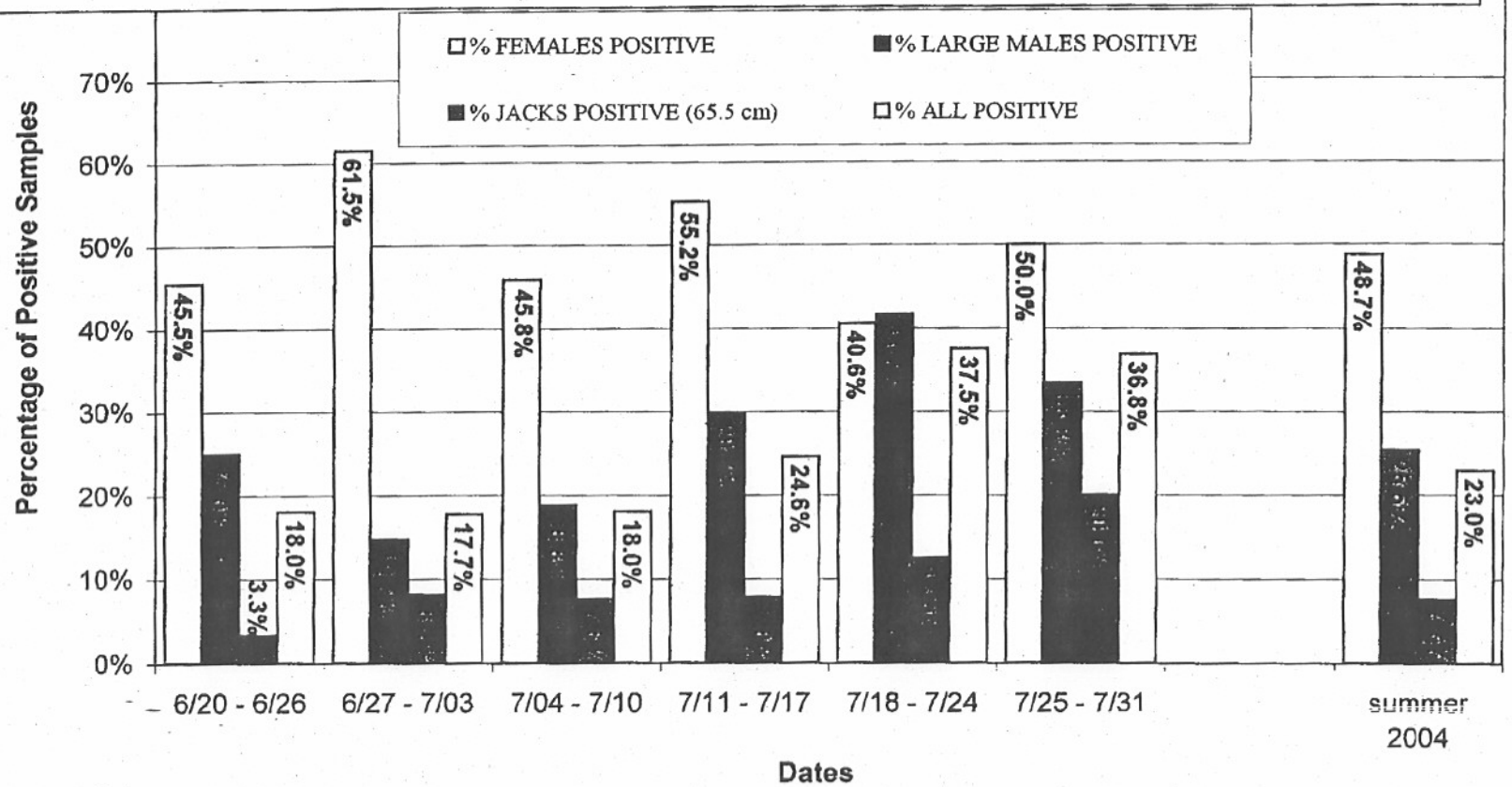
Percentage of Ichthyophonus in Chinook Salmon, 2004
(Rapids Student Research Center)

SAMPLE SIZE (# removed)

	6/20-6/26	6/27-7/03	7/04-7/10	7/11-7/17	7/18-7/24	7/25-7/31	All Season Total
females	11 (0)	13 (1)	24 (0)	29 (0)	32 (0)	8 (2)	117 (3)
lg males	20 (0)	34 (0)	32 (0)	37 (2)	24 (2)	6 (0)	153 (4)
jacks	30 (0)	49 (6)	66 (3)	64 (2)	8 (0)	5 (0)	222 (11)
total	61 (0)	96 (7)	122 (3)	130 (4)	64 (2)	19 (2)	492 (18)

* visual examination only, not cultured for confirmation of positives

Used and removed samples = 528 Chinook



U.S. Fish and Wildlife Service
Office of Subsistence Management
Fisheries Resource Monitoring Program

Abundance and Run Timing of Adult Salmon in the Tozitna River, Alaska, 2003

Annual Report for Study 03-203

This report has been prepared to assess project progress. Review comments may not be addressed in this report, but will be incorporated into the final report for this project.

Tim Sundlov
Carl Kretsinger
Bob Karlen

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February 2004

750mm) (Table 4). Mean length of females age 1.3 and 1.4 was greater than that of same-age males.

Summer Chum Salmon

The sex composition of summer chum salmon was 34% female, ranging from 0 to 37% throughout weekly sampling stratum (Table 6). Overall, chum salmon were predominantly age 0.3 (86%) (Table 5). Female chum salmon ranged from 500 to 640 mm and male chum salmon ranged from 510 to 675 mm (Table 7).

Abiotic Measurements

Water temperature (°C) at the weir ranged from 6.1 to 14.0 and averaged 9.6. Turbidity (NTU) ranged from 0.8 to 56.9 and averaged 3.8. Total precipitation for the period was 10.2 cm. Stream height (cm) fluctuated from 98 to 207 and averaged 130. Daily discharge (m^3/s) ranged from 4 to 83 and averaged 18 (Figure 3).

DISCUSSION

Assessment of sex and age composition of salmon stocks offers insight into the effects of fisheries management regulations and environmental influences. In 2003, there were four weirs in Alaska monitoring Chinook salmon escapement on Yukon River tributaries: East Fork of the Andreafsky River, Henshaw Creek, Gisasa River, and the Tozitna River (Figure 4). These weirs provide the most accurate method for assessing sex and age composition. This section discusses the low proportion of females in escapement data at these four weirs, following the conclusion in ADG&G (2002) and Wiswar (2001) that the proportion of females should be taken into account when assessing escapement.

The Tozitna River had the lowest proportion of female Chinook salmon of the four Yukon River tributary weirs in 2002 (Table 8) and 2003, at 13% and 18%, respectively. Although the 2003 Tozitna River Chinook escapement was 21% above that of 2002, the proportion of females was only 5% higher. The low proportion of female Chinook salmon is not unique to the Tozitna River and has been documented for other Yukon River tributaries. From 1994 - 2000, the Gisasa River averaged 30% female, ranging from 17 - 42%, and the East Fork of the Andreafsky River from 1994 - 1998 averaged 35% female, ranging from 25 - 42% (Wiswar 2001, Tobin and Harper 1999). In 2003, preliminary data indicate that three of the four Yukon tributary weirs had sex ratios favoring males (61 - 82%) (Table 8).

Recently, there has been speculation that the disease-induced mortality caused by the internal parasite *Icthyophonous hofei* has played a role in the selective mortality of female Chinook salmon in the Yukon River. Kocan et al. (2003) reported that significantly more Yukon River females than males were infected during 1999 - 2002. However, in 2003 the infection in females was not significantly different from males,

indicating this may not be a plausible explanation for the low number of female Chinook salmon.

Low female Chinook sex ratios at weir escapement projects are largely the result of the low proportion of age 1.4 females, the predominate age class among females (Harper and Watry 2001). In 2003, preliminary data indicate age 1.4 female Chinook salmon represented 12 – 29% of escapement at the four Yukon tributary weirs (Table 8) and 39% in the lower commercial harvest. The Tozitna River escapement in 2003 had the lowest proportion of age 1.4 female Chinook at 12%. ASL composition is not available for the subsistence harvest, although in the lower Yukon River it is assumed to be similar to the lower commercial harvest, since the same gear is used (Menard 1996).

Chinook salmon harvest in the Yukon River is comprised predominately of commercial and subsistence gillnet fisheries. In 2003, the majority of commercial harvest (91%) occurred in the lower Yukon River, where gillnet mesh size (stretched) was restricted to eight inch or greater (ADF&G 2003). Fully 87% of the Chinook salmon subsistence harvest in 2002 was taken with gillnets, and 44% of the harvest occurred in the lower Yukon River (0 - 311 km) (Brase 2003). There were no gillnet mesh restrictions for the subsistence fishery in 2003, although it is thought the majority of Yukon River gillnet subsistence fishers use eight inch or greater because this is a requirement needed to participate in the commercial fishery.

Yukon Chinook populations are heterogeneous in age, size, and sex, and all individuals are not equally vulnerable to harvest. For example, Tozitna River female Chinook exhibited sexual dimorphism, with females longer than males of the same age. Large mesh gillnets used during unrestricted mesh-size openings select older, larger Chinook salmon, which include a much larger proportion of females than small mesh-size periods (ADF&G 2002). Salmon encounter gillnets from the Yukon River mouth to river km 493 with cumulative harvest effects, as the largest and oldest fish are continuously selected as they migrate upstream. The Tozitna River escapement project is the furthest upstream of the four Yukon River tributary weirs, and in 2002 and 2003 it had the lowest female sex ratio and the lowest proportion of age 1.4 female Chinook salmon (Table 8).

Another possible explanation of low abundance of age 1.4 female Chinook is their possible differential exposure to ocean mortality. The average age of maturity for Yukon River Chinook is 6.12 years for females and 5.64 years for males (McBride et al. 1983). Therefore, female's longer duration of ocean residency may increase exposure to mortality.

Preliminary results indicate that the selective harvest of larger salmon in the commercial and subsistence fisheries and/or differential mortality may have contributed to the low proportion of female Chinook salmon in the Tozitna River escapement. Reduction and removal of the largest and potentially most successful spawners reduces the overall fitness of a population and reduces the ability to compensate for environmental and anthropogenic impacts (Livingston 1998). Furthermore, Ricker (1981) argues that selective harvest by fisheries changes the genetic basis for maturation and can result in a

reduction in adult size. Although long-term weir escapement data is not available on the Tozitna River and there is no conclusive data for selective harvest and/or differential mortality, the low proportion of returning females warrants further evaluation and ongoing monitoring.

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Table 2. Chinook salmon escapement age composition by stratum and sex, Tozitna River, Alaska, 2003. Standard error in parentheses.

			Brood Year and Age											
			2000		1999		1998		1997		1996		Total	
			1.1		1.2		1.3		1.4		1.5			
Strata	Run	Sex	N	%	N	%	N	%	N	%	N	%	N	%
6/26-7/7	54	Males	0	0.0	9 (7.2)	23.7	22 (8.2)	57.9	6 (6.1)	15.8	0	0.0	37	97
		Females	0	0.0	0	0.0	1[a]	2.6	0	0.0	0	0.0	1	3
		Subtotal	0	0.0	9 (7)	23.7	23 (8)	60.5	6 (6)	15.8	0	0.0	38	100
7/8-7/14	912	Males	1 (.5)	0.5	61 (3.5)	29.3	109 (3.6)	52.4	13 (1.9)	6.3	0	0.0	184	89
		Females	0	0.0	0	0.0	12 (10.4)	5.8	12 (10.4)	5.8	0	0.0	24	12
		Subtotal	1 (.5)	0.5	61 (3.2)	29.3	121 (3.4)	58.2	25 (2.3)	12.1	0	0.0	208	100
7/15-7/21	703	Males	1 (.6)	0.5	61 (3.7)	28.6	92 (3.8)	43.2	15 (2.2)	7.0	1 (0.6)	0.5	170	80
		Females	0	0.0	0	0.0	11 (6.7)	5.2	31 (6.9)	14.6	1 (2.3)	0.5	43	20
		Subtotal	1 (.5)	0.5	61 (3.1)	28.6	103 (3.4)	48.4	46 (2.8)	21.6	2 (0.7)	1.0	213	100
7/22-7/28	150	Males	0	0.0	8 (11.6)	19.0	8 (11.6)	19.0	3 (8.6)	7.1	0	0.0	19	45
		Females	0	0.0	0	0.0	4 (8.1)	9.5	19 (8.1)	45.2	0	0.0	23	55
		Subtotal	0	0.0	8 (6.1)	19.0	12 (7.1)	28.5	22 (7.8)	52.3	0	0.0	42	100
Subtotal		Males	2 (.5)	0.4	139 (4.9)	27.7	231 (5.0)	46.1	37 (3.3)	7.4	1 (0.4)	0.2	410	82
		Females	0	0.0	0	0.0	28 (8.8)	5.6	62 (8.9)	12.4	1 (1.4)	0.2	91	18
Total	1819		2	0.4	139 (3.6)	27.7	259 (4.1)	51.7	99 (3.4)	19.8	2 (0.4)	0.4	501	100

[a]Standard error was not calculated because of low sample size.

Table 3. Proportion and estimated number of female Chinook salmon, Tozitna River, Alaska, 2003.

Strata	Run	N	Percent Female	Estimated # Females
6/26-7/7	54	38	2.6 (2.2)	1
7/8-7/14	912	208	11.5 (1.1)	105
7/15-7/21	703	213	20.2 (1.5)	142
7/22-7/28	150	42	54.8 (4.1)	82
Total	1819	501	18.2 (0.9)	330

Table 4. Chinook salmon mid eye to fork length (mm) by age and sex, 2003, Tozitna River, Alaska.

Age	Sex	N	Mean	SE	Range	
1.1	Male	2	378	48	320-425	
	Female	0	-	-	-	
1.2	Male	139	518	4.3	400-755	20.39
	Female	0	-	-	-	
1.3	Male	231	703	3.5	500-850	27.67"
	Female	28	778	7.1	725-895	30.62
1.4	Male	37	793	15	440-975	31.22
	Female	62	859	5.2	780-940	38.8
1.5	Male	1	805	-	805	
	Female	1	865	-	865	

Public comments on FP05-04 to expand the use of drift gillnets in the Yukon River Subdistricts to include 4-B,4-C, and District 5. Submitted by the Western Interior RAC

Galena resident, Doug McCoy: Supports opening drifting in the Galena area and further upriver. It is a quick way to obtain fish and takes pressure off the village of Koyukuk. Additionally, due to the high cost of fuel it is expensive for Galena area residents to travel down to Koyukuk to obtain fish they could get here locally.

I would like to see the drift net fishing extended up river as far as possible to give all subsistence fishermen a chance to catch a little fish.

Some of the reasons are 1. safety. Downriver from Galena, you run into some of the worst rough water. 2. The high cost of gasoline. Lets a 30 mile down river to drift and 30 miles back, plus about 65 passes, so you burn a lot of fuel.

3. The area that we now drift is real congested, sometimes about twenty boats in a small area.

4. Subsistence fishermen have been trying to get this changed for some time now. To tell you the truth, we feel like we are being discriminate against, the only people that are not for extending are a couple of commercial fishermen and subsistence should have a say so.

Thanks for consideration
Alfred R. Evans
"Dick"

Subsistence fisherman
55 years.

Galena, Alaska 99741
PO Box 82

1-7-05

To whom it may concern,

I would like to see the regulations about seineing on the Yukon changed to accomadate the people living upriver from where the Koyukuk empties into the Yukon.

Most of the good places to set a net have been claimed by others. If you do find a good eddy and set a net, it does not mean the fish will pass into that spot.

People living in Galena who cannot find a productive spot for a set net must travel sixty miles round trip to seine. When they get to the first spot that's good for seineing there are often other boats lined up waiting for a turn. If there are other boats it may take several passes before a person gets enough fish. Often a seineing trip is done afterwork and can take all night. The fish can start to cook on the journey back even when you try and keep them cool.

If people were allowed to seine the waters closer to Galena and Ruby less fish would be wasted because they would be closer to getting them cut and tended to, also it wouldn't use so much gas to travel long distence to reach an area where seineing is allowed.

Also I would like to see some change about the hours you make for people to put nets in and out of the river.

The hours you choose make it very hard on people who work jobs. I know you would like to believe that subsistence fishermen are not working jobs. However most everybody I know that fish, have to work jobs in order to pay for the expensive gas and to maintain their boats.

Thank you for this opportunity

Sincerely

Alyson Esmailka
RANDY ESMAILKA
GALENA, ALASKA
-99741-

YUKON RIVER DRAINAGE FISHERIES ASSOCIATION

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YRDFA Board of Directors
Positions on Federal Subsistence Board Proposals
January 2005

Proposal FP 05-02
This proposal would relax or lift the windowed fishing schedules when runs permit.
Oppose the proposal.

Comments:

YRDFA supports windows in times of conservation as well as in times of normal salmon returns. The windows work to bring more fish up-river as they have passed through the windows down river. Areas like the Koyukuk River and the Yukon Flats are upriver and waiting for fish to make it up to their areas. The windows provide knowledge that the fish are being passed up to them and that lower river people are making this effort on their behalf. We still need to be careful about getting fish upriver.

The windows do pose an inconvenience and are a burden, to lower river people and they don't like windows for various reasons; too many people fishing at once, not always the right weather for drying fish.

Windows do affect people when they go fish but this proposal doesn't affect that. It seems that the different RA's have different understandings of this proposal and this is why some of them support or oppose perhaps. This proposal seems to be looking at when to go off the windows and what language and trigger points enable the windows to be lifted.

If we understand this proposal correctly, the change in language will not change the activities by fisheries managers. Currently, fisheries managers do relax the subsistence windows when runs permit.

Proposal FB05-03
This proposal would limit subsistence and commercial gillnets with 6-inch or larger mesh to a 35-mesh maximum depth.
Oppose the proposal.

Comments:

YRDFA is concerned with getting the right number and gender of fish to the spawning grounds and that is why we support the windows as a means of passing fish up to the spawning grounds. An additional gear restriction for this same purpose is not necessary at this time.

In addition to this, there are various agencies and non-profits, such as ADFG, OSM, the Yukon River Panel and YRDFA that are addressing the size of fish that are being caught and making it to the spawning grounds. Initial research is taking place on the research questions that address changing fish size and impacts to the size of fish. Until data is released to the public and decision-making bodies such as the FSB, YRDFA feels that gear restrictions are unwarranted.

This will impose costs on subsistence fishermen and have an economic burden as fishermen will still try to get fish. They will have to move around more and travel further distance, but fish will still get caught. It is unproven that this will do anything in the catch. Fish swim at different depths to find the slowest path of least resistance to travel upriver.

Fishermen will also be able to fish in shallower water and meet their needs with their shorter nets. Hanging ratios can also change net efficiency and depth.

Proposal FB05-04
This proposal would expand the subsistence gillnet fishery to include Sub-districts 4B, 4C, and District 5.
Oppose the proposal.

Comments:

It is our understanding that this proposal was amended, but YRDFA did not have the amended version to vote on and so voted on it as was published for public review.

It is not warranted to expand subsistence which could increase the stock composition of harvest fish if this proposal were to be supported. It is difficult to driftnet anyway because of snags and narrow channels in district Y-5D (Yukon Flats).

The YRDFA board of directors has not seen data that shows that people in this area are not meeting their subsistence needs. If there are challenges to meeting subsistence needs, we are not sure that a change in gear type or access to a new fishing location will adequately address the ability of people to meet their subsistence needs. Issues like water levels and salmon numbers also affect one's ability to catch fish.

In response to the crowding issue, again we are not sure that opening up new fishing grounds is the answer. Yes, it will move people to a new fishing area, but there could still potentially be crowding in the new area as well. There are other areas of the river where there is a limitation of good fishing spots. Fishing locations are determined based on the history of a particular area and village level decision-making. High and low water also affects the availability of good fishing spots as well.

Proposal FB05–05
This proposal would establish a five-day fall chum salmon opening for Federally qualified subsistence users in Sub-district 5D.
Oppose the proposal.

YRDFA would like to support Y-5D in their fishing efforts and understands the difficulty they have in meeting their subsistence needs during certain river conditions or run sizes. It is important to support people wanting to live a subsistence lifestyle, but we still need the ability to limit fishing efforts if there is a conservation concern on salmon in the Yukon River.

This change could lead to fishing on a stock that may not be able to meet escapement goals.

It is also important to know the numbers of salmon going by at this point in the river, but sometimes it is difficult to tell and we need to let fish go by to make it to Canada and the spawning grounds. It is important to balance meeting people's subsistence needs and protecting the resource.

YRDFA has been working with CATG to learn more about subsistence harvest patterns in the Yukon Flats. We suggest that fisheries managers gain access to better information about the number of salmon going past the Yukon Flats in order to enable local people to harvest them when the runs are strong enough. This should ensure that minimum subsistence needs are met during low returns to the Yukon River, which is what we feel this proposal is addressing.