DRAFT STAFF ANALYSIS

FP15-03

ISSUE

Proposal FP15-03, submitted by the Eastern Interior Regional Advisory Council, requests the elimination of the use of drift gillnet fishing gear for the targeting of Chinook salmon in Yukon River Districts 1– 4 (**Map 1**).

DISCUSSION

This proposed regulatory change is intended to eliminate the use of drift nets for the targeting of Chinook salmon in the Yukon River. The proponent states that escapement goals have not been met for Chinook salmon in recent years and this change in regulation should improve overall Chinook salmon escapement throughout much of the Yukon River drainage.

Existing Federal Regulation

Yukon-Northern Area

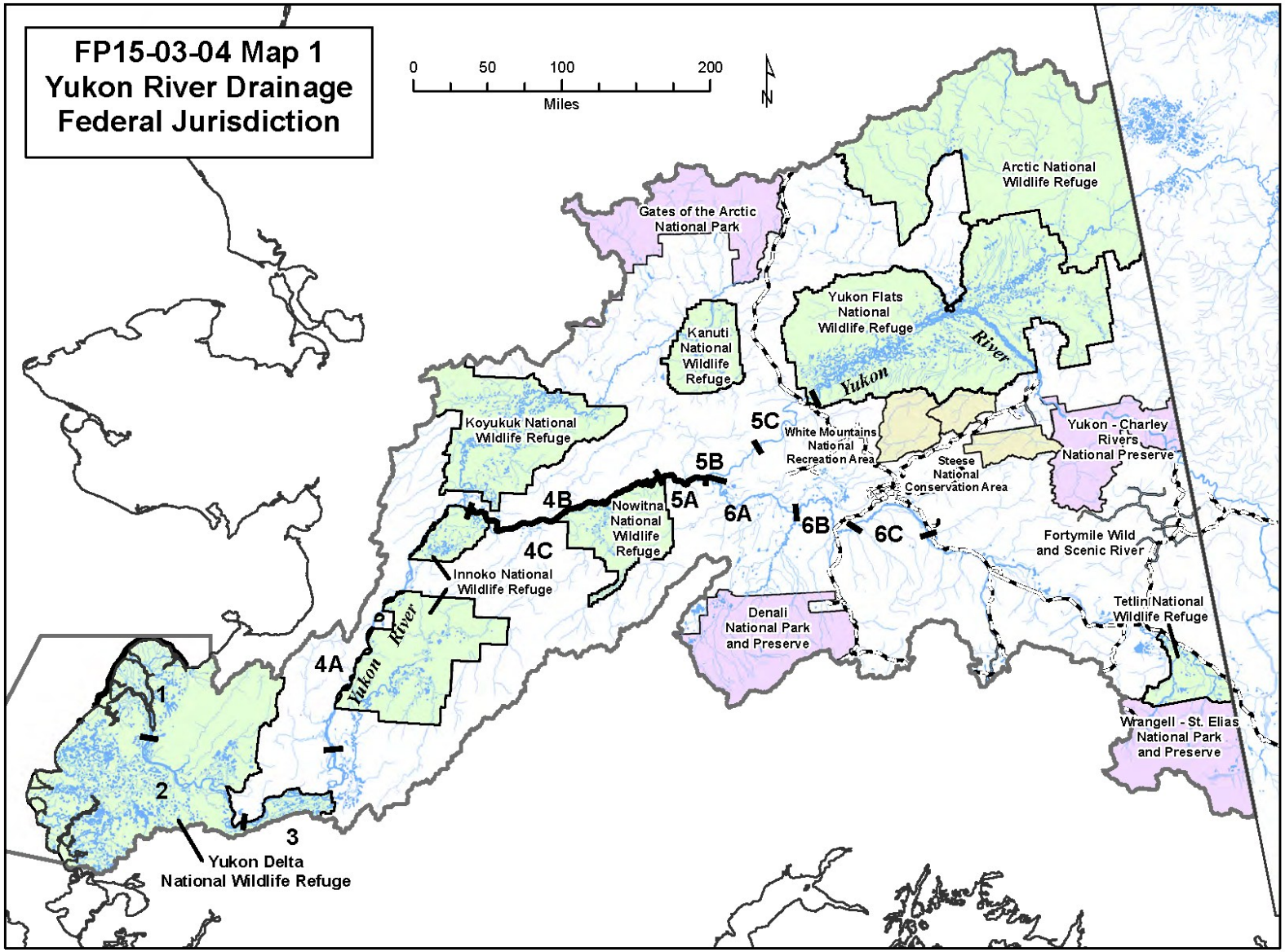
§___.27(e)(i)(3)(xiii) You may take salmon only by gillnet, beach seine, fish wheel, or rod and reel, subject to restrictions set forth in this section.

(xv) In Districts 4, 5, and 6, you may not take salmon for subsistence purposes by drift gillnets, except as follows:

(A) In Subdistrict 4A upstream from the mouth of Stink Creek, you may take Chinook 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 4A downstream from the mouth of Stink Creek, you may take Chinook salmon by drift gillnets less than 150 feet in length from June 10 through July 14.

(C) In the Yukon River mainstem, Subdistricts 4B and 4C you may take Chinook salmon during the weekly subsistence fishing opening(s) by drift gillnets no more than 150 feet long and no more than 35 meshes deep, from June 10 through July 14.


FP15-03-04 Map 1
Yukon River Drainage
Federal Jurisdiction
0
50
100
200
Miles
N
Arctic National Wildlife Refuge
Gates of the Arctic National Park
Yukon Flats National Wildlife Refuge
Yukon River
Kanuti National Wildlife Refuge
Koyukuk National Wildlife Refuge
5C
White Mountains National Recreation Area
Yukon - Charley Rivers National Preserve
5B
Steese National Conservation Area
4B
5A
6A
6B
6C
Nowitna National Wildlife Refuge
4C
Fortymile Wild and Scenic River
Innoko National Wildlife Refuge
Tetlin National Wildlife Refuge
Denali National Park and Preserve
4A
Yukon River
1
2
3
Yukon Delta National Wildlife Refuge
Wrangell - St. Elias National Park and Preserve

Proposed Federal Regulation

Yukon-Northern Area

§___.27(e)(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.

(xv) In Districts ***1, 2, 3,*** *4, 5, and 6, you may not take* ***Chinook*** *salmon for subsistence purposes by drift gillnets~~, except as follows:~~*

~~(A) In Districts 1, 2, and 3, you may take salmon other than Chinook salmon by drift gillnets. In Subdistrict 4A upstream from the mouth of Stink Creek, you may take Chinook 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 4A downstream from the mouth of Stink Creek, you may take Chinook salmon by drift gillnets less than 150 feet in length from June 10 through July 14.~~

~~(C) In the Yukon River mainstem, Subdistricts 4B and 4C you may take Chinook salmon during the weekly subsistence fishing opening(s) by drift gillnets no more than 150 feet long and no more than 35 meshes deep, from June 10 through July 14.~~

State Regulations

Subsistence Finfish Fishery—Yukon Area

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.

(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;

Extent of Federal Public Waters

For purposes of this discussion, the phrase "Federal public waters" is defined as those waters described under 36 CFR 242.3 and 50 CFR 100.3. The Federal public waters addressed by this proposal are those portions of the Yukon River located within and adjacent to the external boundaries of the Yukon Delta National Wildlife Refuge in Districts 1, 2 and 3; Innoko National Wildlife Refuge in District 4; Koyukuk National Wildlife Refuge in District 4; Kanuti National Wildlife Refuge in District 4; Nowitna National

Wildlife Refuge in Districts 4 and 5; Yukon Flats National Wildlife Refuge in District 5; Arctic National Wildlife Refuge in District 5; Tetlin National Wildlife Refuge in District 6; Yukon-Charlie National Park; Denali National Park in District 6; Gates of the Arctic National Park in District 4; Wrangell-St. Elias National Park in District 6; White Mountains and Steese National Recreation Areas in Districts 5 and 6; and all components of the Wild and Scenic River System located outside the boundaries of National Parks, National Preserves, or National Wildlife Refuges, including segments of the Beaver Creek, Birch Creek, Delta, and Fortymile Wild and Scenic Rivers.

Customary and Traditional Use Determinations

All rural residents of the Yukon River drainage and the community of Stebbins have a customary and traditional use determination for Chinook salmon in the Yukon River drainage.

Regulatory History

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. 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).

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). Subsistence users were allowed to continue using drift gillnets throughout the Yukon River drainage until the 1977 season.

In 1981, drift gillnets were again allowed for subsistence salmon fishing in Subdistrict 4-A upstream from Stink Creek.

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 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 1995, the remainder of Subdistrict 4-A, below Stink Creek, was reopened to the use of drift gillnets for subsistence fishing.

In January 2001 and 2004, the Alaska Board of Fisheries denied requests for the use of drift gillnets in Subdistrict 4-B 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]".

In February 2007, the Alaska Board of Fisheries rejected a proposal to prohibit subsistence and commercial gillnets over 6.0-inch stretch mesh.

In March 2007, the Fairbanks Fish and Game Advisory Committee submitted an agenda change request to the Alaska Board of Fisheries requesting that it take emergency action to restrict the maximum mesh size of subsistence and commercial gillnets to 7.5-inch mesh in the Yukon River. During its October 9–11, 2007 work session, the Alaska Board of Fisheries stated that this issue was thoroughly discussed at its January/February 2007 Arctic-Yukon-Kuskokwim meeting and rejected the agenda change request (ADF&G 2007).

The Alaska Board of Fisheries met again in January 2010 to consider regulatory proposals to reduce exploitation rates, gillnet mesh size and depth to address long standing conservation concerns about decreasing trends in size and productivity of Yukon River Chinook salmon. Proposal 90 requested a prohibition of gillnets with greater than 6.0-inch stretch mesh for the Yukon River commercial and subsistence fisheries. The Alaska Board of Fisheries amended Proposal 90 and adopted regulations that limit the maximum gillnet mesh size for Yukon River commercial and subsistence fisheries to 7.5-inch stretch mesh, effective in 2011 allowing a one year phase-in period for fishermen (ADG&G 2010). In addition, the Alaska Board of Fisheries amended Proposal 94 that addressed window closure schedules and adopted a regulation that gave ADF&G managers emergency order authority to sequentially close fisheries to allow pulses (large numbers of migrating fish) to migrate with little or no exploitation (not fished) through all fisheries to their spawning grounds. Fishermen and ADF&G managers reported that this strategy had worked well during 2009 to increase the numbers and quality of escapement (larger, older female fish) reaching spawning streams (ADF&G 2010).

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

[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).

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 in 2003. The Federal Subsistence Board rejected that proposal based on conservation concerns. However, there were many points discussed on both sides of the issue during that Federal Subsistence 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).

In 2002 the Federal Subsistence Board delegated some of its authority to manage Yukon River drainage subsistence salmon fisheries to the Branch Chief for Subsistence Fisheries, U.S. Fish and Wildlife Service, in Fairbanks, Alaska (**Appendix A**). The Federal Subsistence Board's delegation allows the Federal manager to open or close Federal subsistence fishing periods or areas provided under codified regulations, and to specify methods and means.

In 2004, fishery proposal FP05-04, submitted by the Western Interior Subsistence Regional Advisory Council, requested 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. This proposal was adopted with modification to exclude chum salmon and to include a requirement for a registration permit (FSB 2005).

In 2013, fishery proposal FP13-01, submitted by the Koyukuk National Wildlife Refuge, requested the removal of the Federal subsistence permit requirement for the Chinook salmon drift gillnet fishery for Yukon River Subdistricts 4B and 4C. This proposal was adopted (FSB 2013).

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).

Biological Background

Chinook Salmon

Recent analyses indicate that Yukon River Chinook salmon stocks appear to be in the 6th year of a multi-year period of low productivity. However, available data on Yukon River Chinook salmon stocks show periods of above-average abundance (1982-1997) and periods of below-average abundance (1998 onwards), as well as periods of generally higher productivity (brood years 1993 and earlier) mixed with years of low productivity (brood years 1994-1996 and 2002-2005; Schindler et al. 2013).

In 2013, Chinook salmon escapement goals for some tributaries of the Yukon River including the West Fork Andreafsky, Nulato, and Salcha Rivers were achieved. However, the escapement goals for the East Fork Andreafsky, Anvik and Chena Rivers were not met. The cumulative count on the Gisasa River was below average. High water conditions on the Chena River precluded counting for much of the season. Preliminary Chinook salmon border passage based on the Eagle sonar was estimated at 30,401 which is below the lower end border passage goal of 42,500 Chinook salmon. These numbers, however, are subject to change with postseason data analysis (ADF&G 2013a).

The Chinook salmon return to the Yukon River in 2014 was expected to be extremely poor and likely insufficient to meet all escapement goals. The outlook was for a run size range of 64,000 to 121,000 Chinook salmon. The 2014 Chinook run on the Yukon River was estimated to be 137,000 based on counts taken at the Pilot Station sonar as of June 30, 2014. The upper end of the border passage agreement of 55,000 Chinook salmon was met on approximately July 27 based on Eagle sonar counts.

Summer Chum Salmon

Summer chum salmon runs in the Yukon River have provided for harvestable surplus in each of the last 10 years, 2003-2013. In 2013 most tributaries producing summer chum salmon experienced above average escapement. The East Fork Andreafsky River Sustainable Escapement Goal and Anvik River Biological Escapement Goal were achieved and counts at the Gisasa and Henshaw rivers were above average. Salcha River and Chena River escapements, as assessed by tower counts, were above their historical medians. Yukon River summer chum salmon runs generally exhibit strong run size correlations among adjacent years and it should be noted that poor runs have resulted from large escapements (ADF&G 2013a). Similar to the past few years, actual harvest of summer chum has been affected by fishing restrictions implemented in response to poor Chinook salmon runs.

Fall Chum Salmon

Calculating total Yukon River fall chum run size post season is based on individually monitored spawning escapements including estimated U.S. and Canadian harvests. Escapements were monitored in

the Chandalar and Sheenjek Rivers, and the Canadian mainstem rivers using sonar, and in Fishing Branch River with a weir. Assessment of Tanana River stocks is based on either genetic apportionment of Pilot Station counts (both summer and fall Tanana River stocks passing after July 19) or the Delta River escapement and its relationship to the Tanana River mark–recapture estimates (ADF&G 2011). The preliminary 2013 run size estimate was greater than 1.1 million fall chum. Harvestable surplus of fall chum has been available the past 10 years (2003-2013).

Coho Salmon

There are few coho salmon spawning escapement assessment projects in the Yukon River drainage. The Delta Clearwater River has the only established escapement goal for coho salmon, a Sustainable Escapement Goal of 5,200–17,000 fish (ADF&G 2011). A coho salmon index developed for the Yukon River from 1995 to 2012 (excluding 1996 and 2009) suggests that the average run size is 197,000 fish while the average escapement is 145,000 fish. The preliminary 2013 coho run size estimate is 137,000 and the escapement is estimated to be 51,000 fish (ADF&G 2013b). Harvestable surplus of coho salmon has been available for the past 10 years (2003 – 2013).

Harvest History – Chinook Salmon

Chinook salmon subsistence harvests have been approximately 50,000 fish annually in the Alaskan portion of the Yukon River over the past 20 years. However, subsistence harvest levels of Chinook salmon have declined since 2007 due to declining run abundance and resultant harvest restrictions. In recent years, subsistence fishing has increasingly targeted non-Chinook salmon species such as whitefish. In order to allow continued subsistence opportunity throughout the season, subsistence fishing activity has been managed to avoid Chinook and allow the harvest of other fish species.

Most rural residents of the Yukon River drainage (minus the Tanana River) live in 39 villages (see **Table 1**). They harvested an estimated 10-year average (2001–2010) of 45,597 Chinook salmon annually. The harvest has decreased 15% between the 2001–2005 five-year average (49,067 fish) and the 2006–2010 five-year average (42,128 fish; **Table 2**; Jallen et al. 2012). A similar decrease occurred in all 6 management districts. According to preliminary results, in 2012, 26,065 Chinook salmon were harvested by rural residents of the Yukon River drainage, and 11,000 Chinook salmon were harvested in 2013 (JTC 2013 and 2014).

In 2011, based on household harvest surveys, 4 communities (Pitkas Point, St. Mary's, Pilot Station, and Kaltag) were estimated to harvest 100% of their Chinook salmon by drift gillnets. Seven communities (Huslia, Hughes, Allakaket, Alatna, Stevens Village, Birch Creek, and Venetie) were estimated to harvest 100% of their Chinook salmon by set gillnets. Fish wheels were only used to harvest Chinook salmon in 4 communities: Ruby (68% of Chinook salmon harvested by the community), Tanana (51%), Beaver (20%), and Ft. Yukon (74%).

Household harvest surveys are not done with residents of Rampart, Circle, Central, Eagle, Manley, Minto, Nenana, and Healy. Instead, these residents must obtain a State subsistence or personal use permit. Two communities (Rampart and Healy) reported harvesting 100% of their salmon with set gillnets.

Households in the other 6 communities reported using set gillnets or fish wheels as their primary gear to harvest salmon. Primary gear was determined by the larger number of salmon harvested by gear types in the household (Jallen et al. 2012).

Current Events - Chinook Salmon

Directed commercial fishing for Yukon River Chinook salmon has been discontinued since 2007 and subsistence fishing opportunities have become increasingly restrictive in an effort to conserve Chinook salmon. In 2013, fishery managers reduced subsistence fishing opportunity to limit harvests to approximately 25% of historical levels. However, even with reduced subsistence harvests, most escapement objectives were not met. The 2013 Chinook salmon run was one of the poorest runs on record. The Chinook salmon return to the Yukon River in 2014 was expected to be extremely poor and likely insufficient to meet all escapement goals. Fishermen throughout the drainage were advised ahead of the season to not expect fishing opportunity to harvest Chinook salmon and to consider using other more abundant fish resources available to them to supplement their subsistence needs. The 2014 season began with no subsistence, sport, or commercial fisheries anticipated for Chinook salmon in the U.S. portion of the Yukon River drainage. Subsistence fishing opportunities for species other than Chinook salmon were available throughout the 2014 season and the majority of subsistence fishing restrictions that occurred were during June and July to protect Chinook salmon as they moved upriver to spawning areas.

Effects of the Proposal

If this proposal were adopted, it would remove drift gillnets as a gear type for the Federal subsistence harvest of Chinook salmon in Yukon River Districts 1-4 and could reduce the fishing efficiency for harvesting Chinook salmon in the U.S. portion of the Yukon River in these Districts. Eliminating the use of drift nets for the targeting of Chinook salmon in Yukon River Districts 1-4 could benefit Chinook salmon during times of conservation concerns, if it effectively reduced harvest efficiency to the extent that it reduced overall harvest. However, the elimination of this gear type could also be a detriment to subsistence users whose harvest of Chinook salmon, during years of strong Chinook salmon runs, may be more effective with the use of drift nets.

State regulations allow the taking of salmon with drift gillnets in state waters within districts 1-4. Therefore, Federally qualified users fishing under state regulations could still utilize gillnets.

OSM PRELIMINARY CONCLUSION

Oppose FP15-03.

Justification

This proposal would remove a fishing gear option that is currently relied upon by one segment of the fishing community and would not affect the fishing practice of others. Additionally, if the intention is to reduce the harvest of Chinook salmon during times of conservation need, this could be achieved through existing regulatory authorities that allow in-season managers to open or close Federal subsistence fishing periods or areas provided under codified regulations, and to specify methods and means (**Appendix A**).

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Table 1. Rural residents of the Yukon River drainage, by community and management district.

YUKON RIVER DRAINAGE					
FISHING MANAGEMENT DISTRICT/COMMUNITY					
District 1	**District 2**	**District 3**	**District 4**	**Disrict 5**	**District 6**
Nunam Iqua	Mountain Village	Russian Mission	Anvik	Tanana	Manley
Alakanuk	Pitkas Point	Holly Cross	Grayling	Rampart	Minto
Emmonak	St. Mary's	Shageluk	Kaltag	Steven Village	Nenana
Kotlik	Pilot Station		Nulato	Birch Creek	Healy
	Marshall		Koyukuk	Beaver	
			Galena	Fort Yukon	
			Ruby	Circle	
			Huslia	Central	
			Hughes	Eagle	
			Allakaket	Venetie	
			Alatna	Chalkyitsik	
			Bettles		

Table 2. The harvest of Chinook salmon by Federally qualified subsistence users, Yukon River drainage, by district, 1989 to 2011

FEDERAL							
CHINOOK SALMON HARVEST—YUKON RIVER DRAINAGE							
Year	**Number of fish harvested[a]**						
	District 1	**District 2**	**District 3**	**District 4**	**Disrict 5**	**District 6**	**Total**
2001	7,089	13,442	6,361	10,152	12,441	2,136	51,621
2002	5,603	8,954	4,139	9,456	11,634	908	40,694
2003	6,332	9,668	5,002	12,771	17,259	1,753	52,785
2004	5,880	9,724	4,748	16,269	13,669	939	51,229
2005	5,058	9,156	5,131	13,964	14,840	857	49,006
2006	5,122	8,039	5,374	12,022	13,740	1,104	45,401
2007	6,059	10,553	4,651	11,831	16,655	1,308	51,057
2008	6,163	8,826	5,855	10,619	9,728	497	41,688
2009	4,125	6,135	2,924	9,514	7,408	889	30,995
2010	5,856	8,676	4,299	12,888	8,727	1,052	41,498
2011	6,255	8,069	4,134	9,893	8,007	1,037	37,395
2001 to 2005 average	5,992	10,189	5,076	12,522	13,969	1,319	49,067
2006 to 2010 average	5,465	8,446	4,621	11,375	11,252	970	42,128

Source: Jallen et al. (2012).

Note: Does not include the Coastal District, does not include harvests from State personal use permits, does not include harvest by Fairbanks Sate subsistence permit holders.