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TEMPORARY SPECIAL ACTION
WSA21-01A

ISSUES

Temporary Wildlife Special Action WSA21-01, submitted by the Northwest Arctic Subsistence Regional Advisory Council (Northwest Arctic Council), requests closing Federal public lands in Units 23 and 26A to caribou hunting by non-Federally qualified users from August 1 to September 30. Originally, the request was submitted for the 2021 hunting season.

In a June 16, 2021 public teleconference, the Federal Subsistence Board (Board) deferred action on this request and asked that Office of Subsistence Management (OSM) staff seek additional input on concerns related to caribou from the Western Arctic Caribou Herd Working Group (WACHWG), Federal land-managing agencies, local Fish and Game Advisory Committees, the Alaska Department of Fish and Game (ADF&G), Regional Advisory Councils (Councils), commercial guides and transporters, and subsistence users in the area. If adopted, this Special Action would now apply to the 2022 hunting season.

Note: Temporary Wildlife Special Action WSA21-01 has been separated into two analyses: a (caribou) and b (moose) for simplicity. WSA21-01b requests closing Federal public lands in Units 23 and 26A to moose hunting by non-Federally qualified users from August 1 to September 30, 2022.

DISCUSSION

The proponent expresses concern about the late migration of caribou into and through Unit 23. Local residents have expressed concern that caribou migration has been delayed in recent years. In 2020, Unit 23 communities (with the exception of Noatak) were unable to conduct their fall caribou harvest, because caribou had not yet migrated into the area. In 2021, migration was again very late and communities experienced difficulty harvesting caribou. The proponent states that winter harvests are uncertain, and the lack of fall harvest has resulted in empty freezers and stressed communities. Of particular concern to the proponent is the effect that transporters and non-local hunters may be having on caribou migration through both Unit 23 and Unit 26A contributing to its delay. The proponent hopes that a closure will reduce activity and traffic, creating an easier path for migrating caribou.

The applicable Federal regulations are found in 36 CFR 242.19(b) and 50 CFR 100.19(b) (Temporary Special Actions) and state that:

> *. . . After adequate notice and public hearing, the Board may temporarily close or open public lands for the taking of fish and wildlife for subsistence uses, or modify the requirements for subsistence take, or close public lands for the taking of fish and wildlife for nonsubsistence uses, or restrict take for nonsubsistence uses.*

Existing Federal Regulation

Unit 23−Caribou

Unit 23—that portion which includes all drainages north and west of, and including, the Singoalik River drainage—5 caribou per day by State registration permit as follows:

Bulls may be harvested	*July 1–June 30*
Cows may be harvested. However, cows accompanied by calves may not be taken July 15–Oct. 14.	*July 15–Apr. 30*

Unit 23, remainder—5 caribou per day by State registration permit as follows:

Bulls may be harvested	*July 1–June 30*
Cows may be harvested. However, cows accompanied by calves may not be taken July 31–Oct. 14.	*July 31–Mar. 31*

Federal public lands within a 10-mile-wide corridor (5 miles either side) along the Noatak River from the western boundary of Noatak National Preserve upstream to the confluence with the Cutler River; within the northern and southern boundaries of the Eli and Agashashok River drainages, respectively; and within the Squirrel River drainage are closed to caribou hunting except by federally qualified subsistence users hunting under these regulations

Unit 26A−Caribou

Unit 26A—that portion of the Colville River drainage upstream from the Anaktuvuk River, and drainages of the Chukchi Sea south and west of, and including the Utukok River drainage—5 caribou per day by State registration permit as follows:

Calves may not be taken

Bulls may be harvested	*July 1-Oct. 14.* *Dec. 6-June 30.*

Unit 26A−Caribou

Cows may be harvested; however, cows accompanied by calves may not be taken July 16-Oct. 15	*July 16-Mar. 15.*
Unit 26A remainder—5 caribou per day by State registration permit as follows:	
Calves may not be taken	
Bulls may be harvested	*July 1-Oct. 15.* *Dec. 6-June 30.*
Up to 3 cows per day may be harvested; however, cows accompanied by calves may not be taken July 16-Oct. 15	*July 16-Mar. 15.*

Proposed Federal Regulation

Unit 23−Caribou

Unit 23—that portion which includes all drainages north and west of, and including, the Singoalik River drainage—5 caribou per day by State registration permit as follows:	
Bulls may be harvested	*July 1–June 30*
Cows may be harvested. However, cows accompanied by calves may not be taken July 15–Oct. 14.	*July 15–Apr. 30*
***Federal public lands are closed to caribou hunting from Aug. 1-Sep. 30, 2022 except by Federally qualified subsistence users hunting under these regulations**.*	
Unit 23, remainder—5 caribou per day by State registration permit as follows:	
Bulls may be harvested	*July 1–June 30*
Cows may be harvested. However, cows accompanied by calves may not be taken July 31–Oct. 14.	*July 31–Mar. 31*
Federal public lands within a 10-mile-wide corridor (5 miles either side) along the Noatak River from the western boundary of Noatak National	

Unit 23−Caribou

Preserve upstream to the confluence with the Cutler River; within the northern and southern boundaries of the Eli and Agashashok River drainages, respectively; and within the Squirrel River drainage are closed to caribou hunting except by federally qualified subsistence users hunting under these regulations.

***Federal public lands are closed to caribou hunting from Aug. 1-Sep. 30, 2022 except by Federally qualified subsistence users hunting under these regulations**.*

Unit 26A−Caribou

Unit 26A—that portion of the Colville River drainage upstream from the Anaktuvuk River, and drainages of the Chukchi Sea south and west of, and including the Utukok River drainage—5 caribou per day by State registration permit as follows:
Calves may not be taken

Bulls may be harvested	*July 1-Oct. 14.* *Dec. 6-June 30.*
Cows may be harvested; however, cows accompanied by calves may not be taken July 16-Oct. 15	*July 16-Mar. 15.*

***Federal public lands are closed to caribou hunting from Aug. 1-Sep. 30, 2022 except by Federally qualified subsistence users hunting under these regulations**.*

Unit 26A remainder—5 caribou per day by State registration permit as follows:
Calves may not be taken

Bulls may be harvested	*July 1-Oct. 15.* *Dec. 6-June 30.*
Up to 3 cows per day may be harvested; however, cows accompanied by calves may not be taken July 16-Oct. 15.	*July 16-Mar. 15.*

***Federal public lands are closed to caribou hunting from Aug. 1-Sep. 30, 2022 except by Federally qualified subsistence users hunting under these regulations**.*

Existing State Regulation

Unit 23—Caribou

23, north of and including Singoalik River drainage	*Residents—Five caribou per day by permit available online at http://hunt.alaska.gov or in person in Kotzebue, Utqiagvik, and at license vendors in Units 23 and 26A beginning June 22.*	*Bulls*	*RC907*	*No closed season*
		Cows	*RC907*	*Jul. 15-Apr. 30*
	Nonresidents—One bull		*HT*	*Aug. 1-Sept. 30*
23 remainder	*Residents— Five caribou per day by permit available online at http://hunt.alaska.gov or in person in Kotzebue, Utqiagvik, and at license vendors in Units 23 and 26A beginning June 22.*	*Bulls*	*RC907*	*No closed season*
		Cows	*RC907*	*Sept. 1-Mar. 31*
	Nonresidents—One bull		*HT*	*Aug. 1-Sept. 30*

Unit 26A—Caribou

26A, the Colville River drainage upstream from the Anaktuvuk River, and drainages of the Chukchi Sea south and west of, and including the Utukok River drainage	*Residents—Five caribou per day by permit available online at http://hunt.alaska.gov or in person in Kotzebue, Utqiagvik, and at license vendors in Units 23 and 26A beginning June 22.*	*Bulls*	*RC907*	*July 1-Oct. 14* *Feb. 1-June 30*
		Cows	*RC907*	*Jul. 15-Apr. 30*
	Nonresidents—One bull		*HT*	*July 15-Sept. 30*
26A remainder	*Residents—Five bulls per day by permit available online at http://hunt.alaska.gov or in person in Kotzebue, Utqiagvik, and at license vendors in Units 23 and 26A beginning June 22.*		*RC907*	*July 1-July 15* *Mar. 16-Jun 30*
	Residents—Five caribou per day, three of which may be cows; cows with calves may not be taken. Permits available online at		*RC907*	*July 16-Oct. 15*

Unit 26A—Caribou

http://hunt.alaska.gov or in person in Kotzebue, Utqiagvik, and at license vendors in Units 23 and 26A beginning June 22.		
Residents—Three cows per day by permit available online at http://hunt.alaska.gov or in person in Kotzebue, Utqiagvik, and at license vendors in Units 23 and 26A beginning June 22.	*RC907*	*Oct. 16-Dec. 31*
Residents—Five caribou per day, three of which may be cows. Permits available online at http://hunt.alaska.gov or in person in Kotzebue, Utqiagvik, and at license vendors in Units 23 and 26A beginning June 22.	*RC907*	*Jan. 1-Mar. 15*
Nonresidents—One bull	*HT*	*July 15-Sept. 30*

Extent of Federal Public Lands

Unit 23

Federal public lands comprise approximately 71% of Unit 23 and consist of 40% National Park Service (NPS) managed lands, 22% Bureau of Land Management (BLM) managed lands, and 9% U.S. Fish and Wildlife Service (USFWS) managed lands.

Unit 26A

Federal public lands comprise approximately 73% of Unit 26A and consist of 66% BLM managed lands and 7% NPS managed lands.

National Parks and Monuments in Units 23 and 26A, which includes Kobuk Valley National Park, Cape Krusenstern National Monument, and a portion of Gates of the Arctic National Park, are already closed to hunting by all but resident zone communities as determined by National Park Service regulations.

In addition, there is already a closure to caribou hunting by non-Federally qualified users in Unit 23 within a 10-mile-wide corridor along the Noatak River from the western boundary of Noatak National Preserve upstream to the confluence with the Cutler River; within the northern and southern boundaries of the Eli and Agashashok River drainages, respectively; and within the Squirrel River drainage.

The Federal lands in question for this proposed closure include that portion of Noatak National Preserve not included in the existing closure, Selawik National Wildlife Refuge, most of Gates of the Arctic National

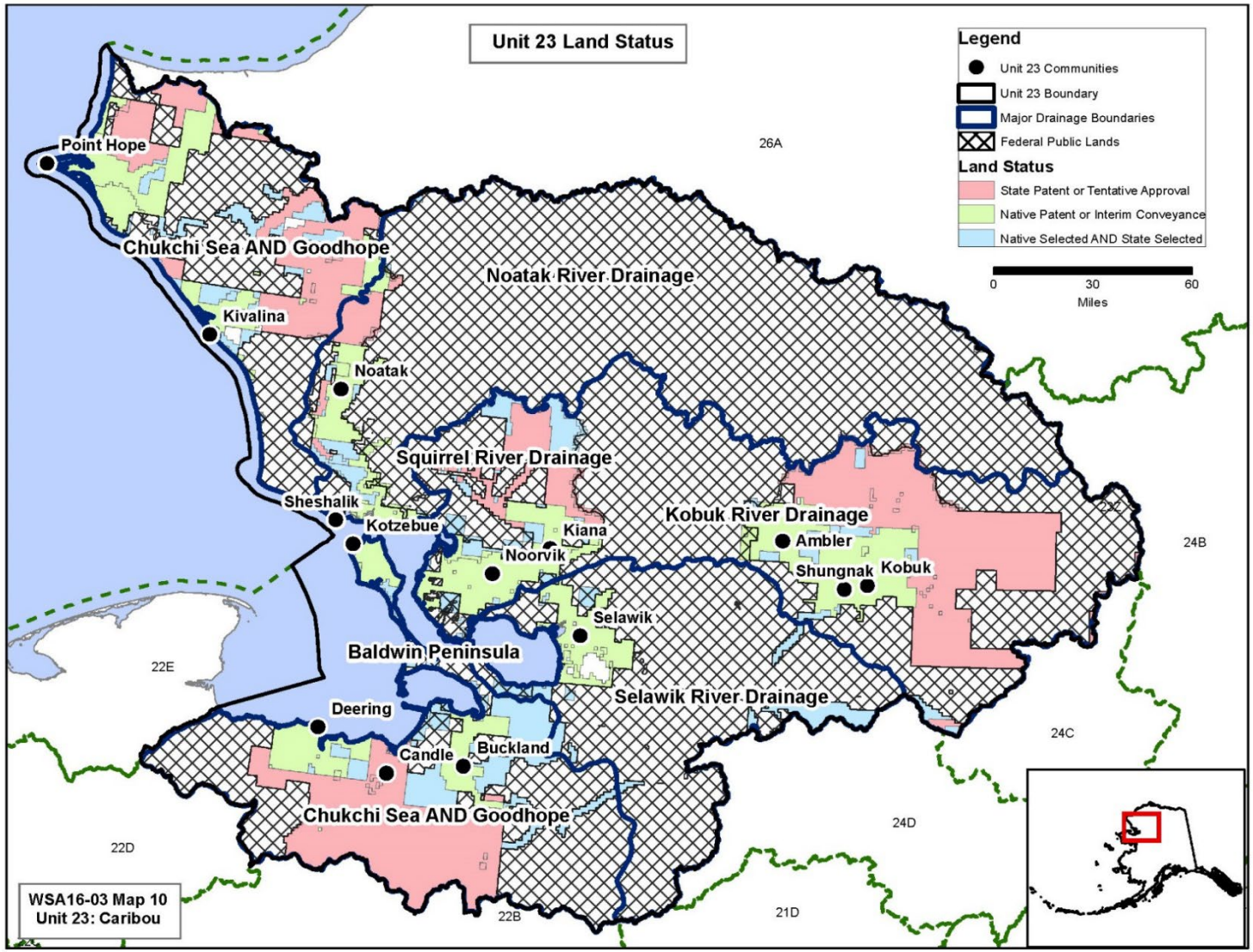
Preserve, the National Petroleum Reserve Alaska, a portion of Bering Land Bridge National Preserve, and other smaller BLM and FWS land in Units 23 and 26A.

Customary and Traditional Use Determinations

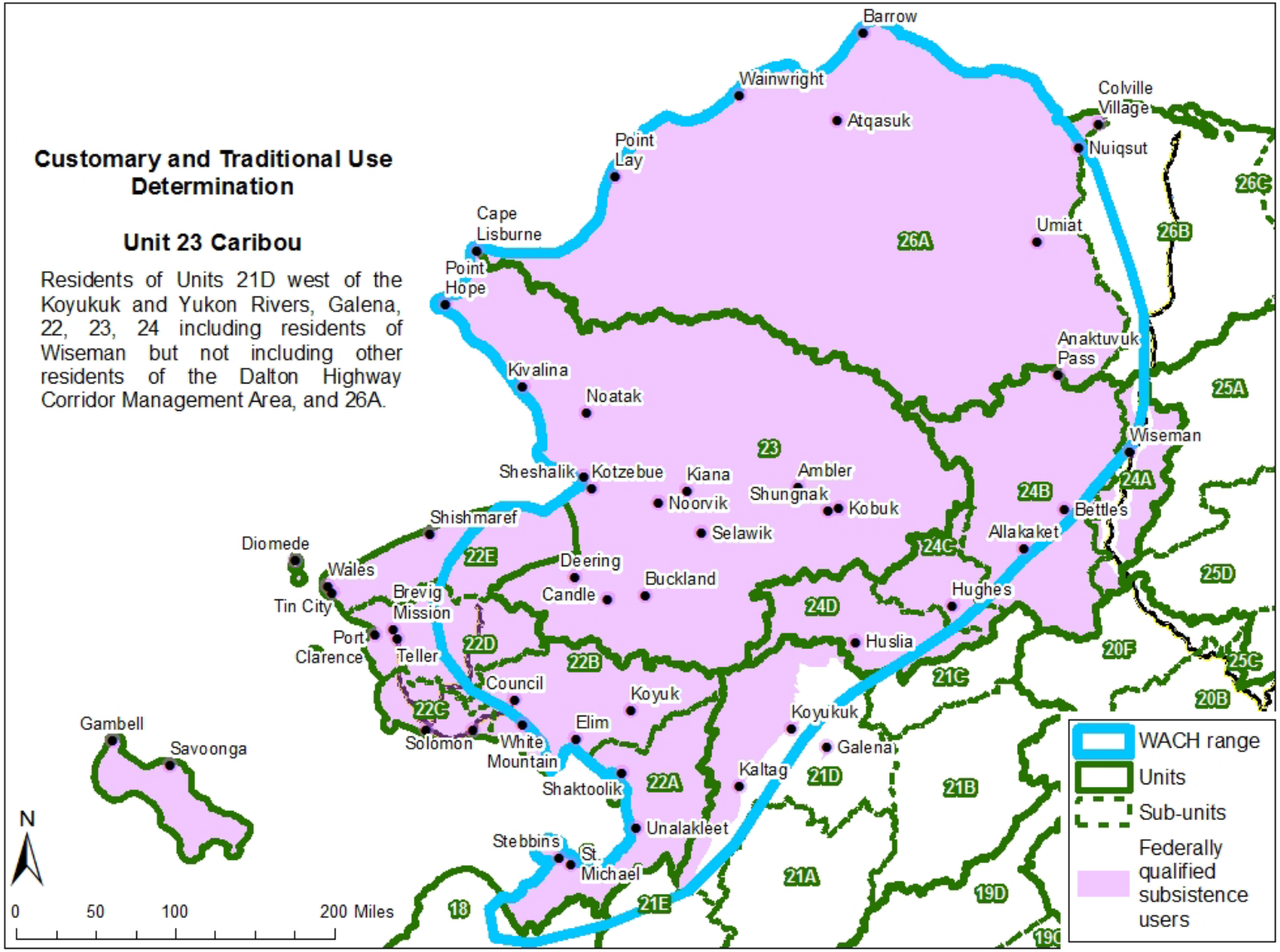
Residents of Units 21D west of the Koyukuk and Yukon Rivers, Galena, 22, 23, 24 including residents of Wiseman but not including other residents of the Dalton Highway Corridor Management Area, and 26A have a customary and traditional use determination for caribou in Unit 23 (**Map 2)**.

Residents of Unit 26, Anaktuvuk Pass, and Point Hope have a customary and traditional use determination for caribou in Unit 26A.

Only resident zone communities can hunt in National Parks and Monuments. The resident zone communities for Kobuk Valley National Park and Cape Krusenstern National Monument include all NANA regional corporation communities (all Unit 23 communities except Point Hope). Resident zone communities for Gates of the Arctic National Park include Alatna, Allakaket, Ambler, Anaktuvuk Pass, Bettles/Evansville, Hughes, Kobuk, Nuiqsut, Shungnak, and Wiseman.



Map 1. Land status within Unit 23 as per data obtained from the Bureau of Land Management on July 27, 2016.



Map 2. Customary and Traditional (C&T) Use Determination for caribou in Unit 23. C&T Determinations indicate which Alaska rural residents are Federally qualified subsistence users. The range of the WACH is included for context.

Regulatory History

In 1990, the caribou hunting season in Unit 23 and 26A was open year-round with a five caribou per day harvest limit and a restriction on the harvest of cows May 16-June 30.

In 1994 the Federal Subsistence Board (Board) adopted Proposal P94-82 with modification to allow motor-driven boats and snowmachines to be used to take caribou in Unit 26 and to allow swimming caribou to be taken with a firearm using rimfire cartridges in Unit 26. (Swimming caribou could be taken with a firearm using rimfire cartridges in Unit 23 since 1990).

In 1995, the Board adopted Proposal P95-51 to increase the caribou harvest limit from five to 15 caribou per day in Unit 23 so that subsistence hunters could maximize their hunting efforts when caribou were available. The Board also adopted Proposal P95-64 to increase the harvest limit from 5 caribou per day to 10 caribou per day in Unit 26 to increase harvest opportunity for subsistence hunters.

In 1995 the Board also adopted Proposal P95-62 which closed the area east of the Killik River and south of the Colville River to caribou hunting by non-Federally qualified users from Aug.1-Sep. 30. This closure was enacted to prevent non-Federally qualified users from harvesting lead animals, which may have caused the migration to move away from the area that local subsistence users hunted in Unit 26A. The justification was to allow for caribou migrations to take their normal route into Anaktuvuk Pass.

In 1997, the Board adopted Proposal P97-66 with modification to provide a customary and traditional use determination for caribou in Unit 23 for rural residents of Unit 21D west of the Koyukuk and Yukon rivers, Galena, Units 22, 23, 24 including residents of Wiseman, but not other residents of the Dalton Highway Corridor Management Area and Unit 26A (**Map 2**).

In 2000, the Board adopted Proposal WP00-53 with modification, allowing the use of snowmachines to position a hunter to select individual caribou for harvest in Units 22 and 23. This was done to recognize a customary and traditional practice in the region.

In 2006, the Board adopted Proposal WP06-65 which opened the area east of the Killik River and south of the Colville River to non-Federally qualified users. The 1995 closure was lifted for several reasons. First, due to changes in land status, lands formerly managed by BLM were transferred to Alaska Native corporations or the State pursuant to the Alaska Native Claims Settlement Act or the Statehood Act, respectively. After these land transfers, only lands east of Anaktuvuk Pass were affected by the closure, making the closure less effective. Second, the population was at a point where it could support both subsistence and non–subsistence uses.

In 2013, an aerial photo census indicated significant declines in the Teshekpuk Caribou Herd (TCH), Western Arctic Caribou Herd (WACH), and possibly the Central Arctic Caribou Herd (CACH) populations (Caribou Trails 2014). In response, the Alaska Board of Game (BOG) adopted modified Proposal 202 (RC76) in March 2015 to reduce harvest opportunities for both Alaska residents and nonresidents within the range of the WACH and the TCH. These regulation changes – which included lowering bag limits for nonresidents from two caribou to one bull, reductions in bull and cow season lengths, the establishment of

new hunt areas, and prohibiting calf harvest – were adopted to slow or reverse the population decline. The regulatory changes took effect on July 1, 2015.

In 2015, four special actions, WSA15-03/04/05/06, requesting changes to caribou regulations in Units 23, 24, and 26, were submitted by the North Slope Council and approved with modification by the Board, effective July 1, 2015. Temporary Special Action WSA15-03 requested designation of a new hunt area for caribou in the northwest corner of Unit 23 where the harvest limit would be reduced from 15 to five caribou per day, the harvest season would be shortened for bulls and cows, and the harvest of calves would be prohibited. The Board did not establish a new hunt area, instead applying the restrictions to all of Unit 23 and also prohibited the harvest of cows with calves. These State and Federal regulatory changes were the first time that harvest restrictions had been implemented for the WACH in over 30 years.

Temporary Special Action WSA15-05 requested that the bull caribou harvest limit in Unit 26A be reduced from 10 caribou per day to 5 caribou per day, the cow harvest limit be reduced to 3 per day, the harvest seasons for bulls and cows be reduced, and the take of calves and cows with calves be prohibited. Compared to the new State caribou regulations, it requested 3 additional weeks to the bull harvest season (Dec. 6-31). These special actions took effect on July 1, 2015.

In 2015, the Northwest Arctic Council submitted a temporary special action request (WSA16-01) to close caribou hunting on Federal public lands in Unit 23 to non-Federally qualified users for the 2016/17 regulatory year. The Council stated that their request was necessary for conservation purposes but also needed because nonlocal hunting activities were negatively affecting subsistence harvests. In April 2016, the Board approved WSA16-01, basing its decision on the strong support of the Northwest Arctic and North Slope Councils, public testimony in favor of the request, as well as concerns over conservation and continuation of subsistence uses.

Six proposals (WP16-37, WP16-48, WP16-49/52, WP16-61, and WP16-63) concerning caribou regulations in Units 23 and 26A were submitted to the Board for the 2016-2018 wildlife regulatory cycle. The Board adopted WP16-48 with modification to allow the positioning of a caribou, wolf, or wolverine for harvest in Unit 23 on BLM lands only. Proposal WP16-37 requested that Federal caribou regulations mirror the new State regulations across the ranges of the WACH and TCH (Units 21D, 22, 23, 24, 26A, and 26B). The Board adopted Proposal WP16-37 with modification to reduce the harvest limit to five caribou per day, restrict bull harvest during rut and cow harvest around calving, prohibit the harvest of calves and the harvest of cows with calves before weaning (mid-October), and to create a new hunt area in the northwest corner of Unit 23. The Board took no action on the remaining proposals (WP16-49/52, and WP16-61, and WP16-63) due to action taken on WP16-37.

In June 2016, the State submitted a special action request (WSA16-03) to reopen caribou hunting on Federal public lands in Unit 23 to non-Federally qualified users, providing new biological information (e.g. calf recruitment, weight, body condition) on the WACH. The State specified that there was no biological reason for the closure and that it could increase user conflicts. In January 2017, the Board rejected WSA16-03 due to the position of all four affected Councils (Northwest Arctic, North Slope, Seward Peninsula, and Western Interior) as well as public testimony and Tribal consultation comments opposing the request. Additionally, the Board found the new information provided by the State to be insufficient to rescind the closure.

In January 2017, the BOG adopted Proposal 2, requiring registration permits for residents hunting caribou within the range of the Western Arctic and Teshekpuk herds in Units 21, 23, 24, and 26 (a similar proposal was passed for Unit 22 in 2016). ADF&G submitted the proposal in order to better monitor harvest and improve management flexibility. The BOG also rejected Proposal 3 (deferred Proposal 85 from 2016), which would have removed the caribou harvest ticket and report exception for residents living north of the Yukon River in Units 23 and 26A). Also in January 2017, the BOG rejected Proposal 45, which proposed requiring big game hunting camps to be spaced at least three miles apart along the Noatak, Agashashok, Eli, and Squirrel Rivers. The proposal failed as it would be difficult to enforce.

In March 2017, the Northwest Arctic and North Slope Councils submitted temporary special action requests (WSA17-03 and -04, respectively) to close caribou hunting on Federal public lands in Unit 23 and in Units 26A and 26B, respectively, to non-Federally qualified users for the 2017/18 regulatory year. Both Councils stated that the intent of the proposed closures was to ensure subsistence use in the 2017/18 regulatory year, to protect declining caribou populations, and to reduce user conflicts. The Board voted to approve WSA17-03 with modification to close all Federal public lands within a 10 mile wide corridor (5 miles either side) along the Noatak River from the western boundary of Noatak National Preserve upstream to the confluence with the Cutler River; within the northern and southern boundaries of the Eli and Agashashok River drainages, respectively; and within the Squirrel River drainage, to caribou hunting except by Federally qualified subsistence users for the 2017/18 regulatory year. The Board considered the modification a reasonable compromise for all users, and that closure of the specified area was warranted in order to continue subsistence use. The Board rejected WSA17-04 due to recent changes to State regulations that should reduce caribou harvest.

In April 2018, the Board adopted Proposals WP18-46 with modification and WP18-48 (effective July 1, 2018). Proposal WP18-46 requested closing caribou hunting on Federal public lands in Unit 23 to non-Federally qualified users (similar to WSA16-01 and WSA17-03). The Board adopted WP18-46 with the same modification as WSA17-03 (see above) as the Northwest Arctic, Western Interior, and Seward Peninsula Councils as well as the village of Noatak supported this modification and viewed the targeted closure as effectively addressing user conflicts and the continuation of subsistence uses. The Board also adopted WP18-48 to require State registration permits for caribou hunting in Units 22, 23, and 26A to improve harvest reporting and herd management, and to align with State regulations.

Also in 2018, the Board considered proposal WP18-57, which requested that caribou hunting on Federal public lands in Units 26A and 26B be closed to non-Federally qualified users. This proposal was submitted by the North Slope Council to ensure continuation of subsistence, protect the caribou herds, and reduce user conflicts. The Board rejected WP18-57, choosing to allow time to evaluate the effects of recently implemented harvest restrictions. In addition, the Board expressed concern that closing Federal lands would shift users to State lands, increasing conflict.

In January 2020, the BOG adopted Proposal 20 to open a year-round resident season for caribou bull harvest in Unit 23 under State regulations. The BOG also adopted Proposal 24 as amended to remove the restriction on caribou calf harvest in Units 22, 23, and 26A. Proposal 28, which would have eliminated the caribou registration permit in Units 23 and 26A for North Slope resident hunters, was not adopted by the BOG, due to an ongoing need for harvest data.

In April 2020, the Board adopted Proposal WP20-46 to open a year-round bull season and permit calf harvest for caribou in Unit 23. Creating a year-round season for bulls was intended to allow for harvest of bulls when caribou migration had been delayed, alleviating harvest pressure on cows. The prohibition on calf harvest was lifted in order to permit taking of calves that had been orphaned or injured.

In summary, since 2013, restrictions have been placed on caribou hunting in Units 23 and 26A under both State and Federal subsistence regulations. Recent relevant changes include:

Federal Subsistence regulatory changes:

- Reduction in cow and bull season length in 26A (2015)
- Reduction of caribou harvest limit to 5 per day in both Units 23 (2015) and 26A (2016)
- Requirement for FQSUs hunting caribou under Federal regulations to have a State registration permit (RC907) in both Units 23 and 26A in order to improve monitoring (2018)
- Closure of limited areas in Unit 23 centered on the Noatak River to caribou hunting by non-Federally qualified users in order to reduce user conflict (2017)
- Opening a year-round bull season in Unit 23 to allow for harvest of younger bulls when caribou migration has been delayed, and to alleviate harvest pressure on cows (2020)

State regulatory changes:

- Reduction in cow and bull season length in both Units 23 and 26A (2013)
- Reduction of caribou harvest limit to 5 caribou per day in both Units 23 and 26A (2015)
- Requirement for registration permit under State regulations throughout the range of the WACH and TCH (2017)
- Opening a year-round harvest for bulls in Unit 23 (2020)

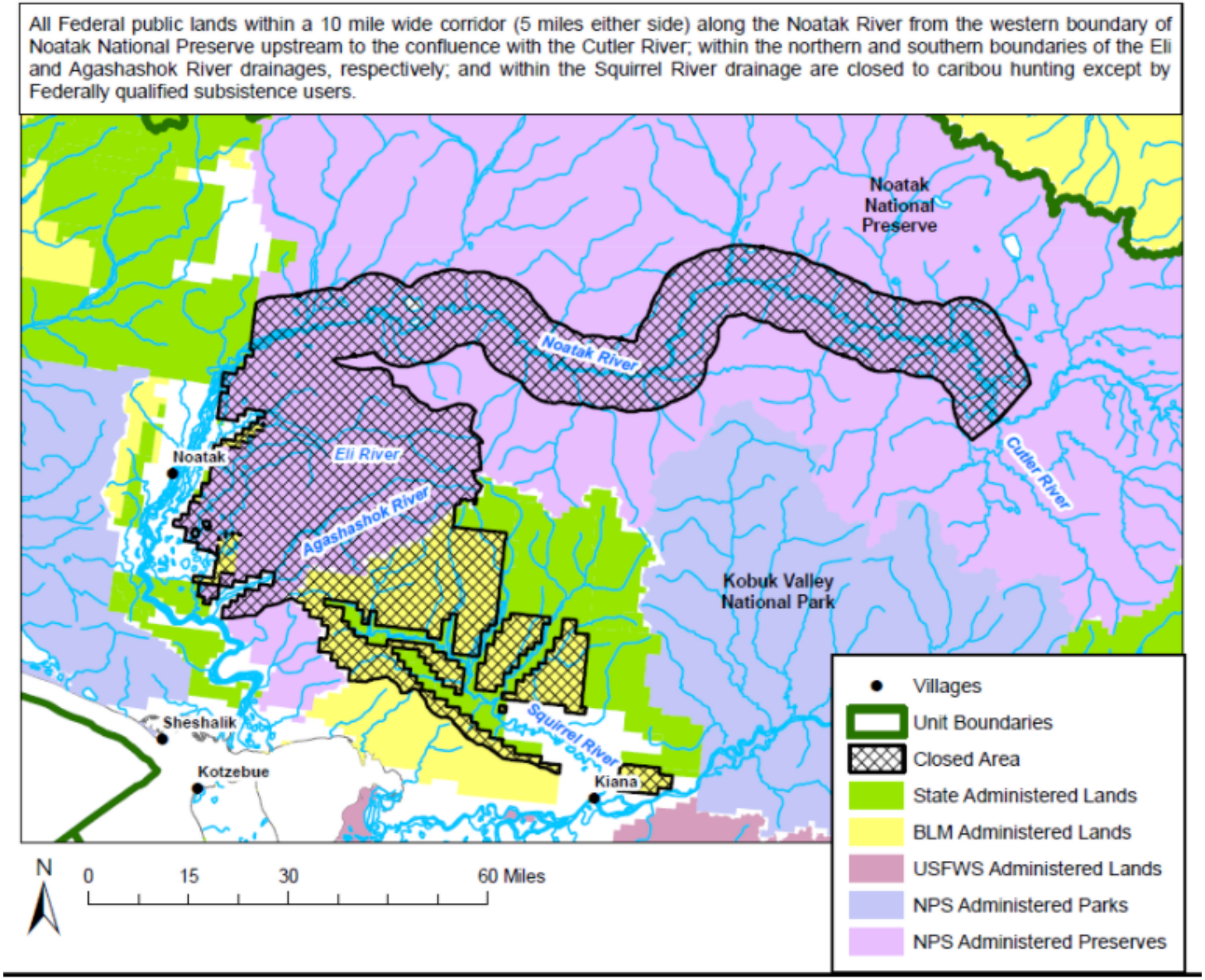
A non-resident caribou hunt remains open in both Units 23 and 26A under State regulations, although the bag limits for nonresidents was reduced from two caribou to one bull in 2013. The results of closure requests for caribou in Units 23 and 26 made to the Board since 2016 are documented in **Table 1** and **Table 2**, below.

Table 1. History and outcomes of closure requests for caribou on Federal public lands in Unit 23 since 2016. All three requests were submitted by the Northwest Arctic Council. FQSUs = Federally Qualified Subsistence Users; NFQUs = non-Federally qualified users.

Proposal or Special Action Request	Proposed Action	Proponent Rationale	Board Action
WSA16-01	Close Unit 23 to NFQUs for 2016/2017 regulatory year	Conservation, impact of nonlocal hunting	Approved
WSA17-03	Close Unit 23 to NFQUs for 2017/18 regulatory year	Ensure subsistence use, protect declining caribou, reduce conflict	Approved with geographical limitation/modification (Noatak, Eli, Agashashok, and Squirrel rivers closures)
WP18-46	Close Unit 23 to NFQUs	Ensure subsistence use, protect declining caribou, reduce conflict	Approved with geographical limitation/modification (Noatak, Eli, Agashashok, and Squirrel rivers closures); closure is still in place

Table 2. History and outcomes of recent closure requests for caribou on Federal public lands in Unit 26A since 2017. Both requests were submitted by the North Slope Council. NFQUs = non-Federally qualified users.

Proposal or Special Action Request	Proposed Action	Proponent Rationale	Board Action
WSA17-04	Close 26A (and 26B) to NFQUs	Continuation of subsistence, protect declining caribou populations, and reduce user conflicts	Reject
WP18-57	Close 26A (and 26B) to NFQUs	Continuation of subsistence, protect declining caribou populations, and reduce user conflicts	Reject



Map 3. Current closure to caribou hunting by non-Federally qualified subsistence users in Unit 23.

Table 3. Summary of moose and caribou hunts in August and September in Units 23 and 26A. FQSUs = Federally qualified subsistence users; NFQUs = non-Federally qualified users.

	FQSUs (rural residents with C&T) hunting under Federal regulations	**Residents of Alaska (includes both FQSUs and NFQUs) hunting under State regulations**	**Nonresidents of Alaska (NFQUs) hunting under State regulations**
Unit 23 caribou	Yes	Yes	Yes
Unit 26A caribou	Yes	Yes	Yes

Controlled Use Areas in Unit 23

Noatak Controlled Use Area

In 1988, the Traditional Council of Noatak submitted a proposal to the BOG to create the Noatak Controlled Use Area (CUA) in order to restrict the use of aircraft in any manner for big game hunting Aug. 15-Sep. 20 due to user conflicts (Fall 1990). The proposed Controlled Use Area extended five miles on either side of the Noatak River, from the mouth of the Eli River upstream to the mouth of the Nimiuktuk River, including the north side of Kivivik Creek (ADF&G 1988). The BOG adopted the proposal with modification to close a much smaller area extending from the Kugururok River to Sapun Creek from Aug. 20-Sep. 20.

The Controlled Use Area was expanded in 1994 and modified in 2017 (Betchkal 2015, Halas 2015, ADF&G 2017a). From 1994-2016, the Noatak Controlled Use Area consisted of a 10-mile-wide corridor (5 miles either side) along the Noatak River from its mouth to Sapun Creek with approximately 80 miles of the Controlled Use Area within Noatak National Preserve (NP) (**Map 4**, Betchkal 2015). The closure dates from 1994-2009 were Aug. 25-Sep. 15. In 2009 (effective 2010), the BOG adopted Proposal 22 to expand the closure dates to Aug. 15-Sep. 30 in response to the timing of caribou migration becoming less predictable (ADF&G 2009). During the 2016/17 BOG regulatory cycle, the Noatak/Kivalina & Kotzebue AC proposed (Proposal 44) extending the upriver boundary of the Noatak Controlled Use Area to the Cutler River, citing increased user conflicts as their rationale (ADF&G 2017b). In January 2017, the BOG approved amended Proposal 44 to shift the boundaries of the Noatak Controlled Use Area to start at the mouth of the Agashashok River and end at the mouth of the Nimiuktuk River with approximately 105 miles within Noatak NP (**Map 4**, ADF&G 2017a).

In 1990, the Noatak Controlled Use Area was adopted under Federal regulations. In 1995, the Board adopted Proposal P95-50 to expand the time period and area of the Controlled Use Area to Aug. 25-Sep. 15 and the mouth of the Noatak River upstream to the mouth of Sapun Creek, respectively, which aligned with State regulations as they existed at that time.

In 2008, Proposals WP08-50 and 51 requested modifications to the Noatak Controlled Use Area dates. These proposals were submitted in response to caribou migration occurring later in the season, to improve

caribou harvest for subsistence users, and to decrease conflicts between local and nonlocal hunters. The Board deferred these proposals to the next regulatory cycle. In 2010, Proposals WP10-82, 83, and 85 requested similar date changes. The Board adopted WP10-85 to expand the time period during which aircraft are restricted in the Noatak Controlled Use Area to Aug. 15-Sep. 30, which aligned with the current State regulations (**Table 4)**.

Selawik National Wildlife Refuge: Area Not Authorized for Commercial Transporters and Guides

In 2011, Selawik National Wildlife Refuge (NWR) designated refuge lands in the northwest portion of the refuge as closed to big game hunting by commercial guides and transporters through their comprehensive conservation plan (USFWS 2011, 2014, **Table 4**). These refuge lands are intermingled with private lands near the villages of Noorvik and Selawik (**Map 4**). The purpose of this closure was to minimize trespass on private lands and to reduce user conflicts (USFWS 2011).

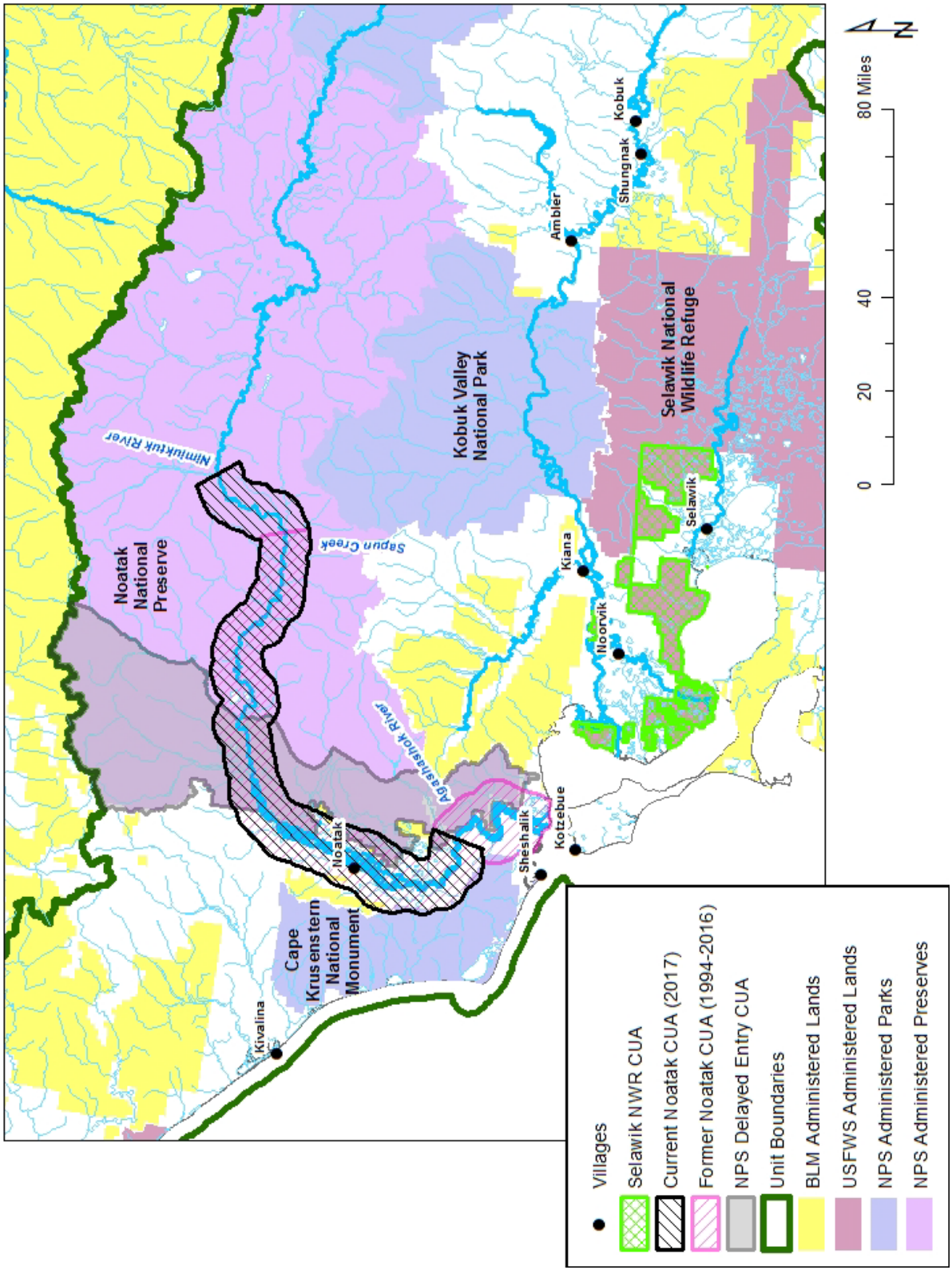
At the winter 2021 meeting of the Northwest Arctic Council, a representative of Selawik National Refuge reported that only two hunters were brought into the refuge by air taxis and transporters in 2020. Because caribou are no longer abundant in Selawik National Wildlife Refuge in September, and because the non-resident moose season is already closed in Unit 23, the refuge no longer receives many fly-in hunters (NWARAC 2021a).

Noatak National Preserve Delayed Entry Controlled Use Area

In 2012, the NPS established a Special Commercial Use Area or "delayed entry zone" in the western portion of the Noatak NP (Halas 2015, Fix and Ackerman 2015, **Table 4**). Within this zone, transporters can only transport nonlocal caribou hunters after a pre-determined date unless otherwise specified by the Western Arctic Parklands (WEAR) Superintendent in consultation with commercial operators, other agencies and local villages (Halas 2015). In 2020, the delayed entry end date was changed from September 15 to September 22 (NPS 2020) in response to requests from the Cape Krusenstern National Monument and Kobuk Valley National Park SRCs and the Native Village of Noatak (Atkinson 2021, pers. comm.). The purpose of this zone is to allow a sufficient number of caribou to cross the Noatak River and establish migration routes, to limit interactions between local and nonlocal hunters, and to allow local hunters the first opportunity to harvest caribou in that area (**Map 4**, USFWS 2014, Halas 2015).

Aircraft in National Parks and Monuments

National parks and monuments in Unit 23 include Cape Krusenstern National Monument, Kobuk Valley National Park, and Gates of the Arctic National Park. The use of aircraft for access to or from lands and waters within a national park or monument for purposes of taking fish or wildlife within the national park or monument is prohibited, except in the case of exempted communities and individuals for the purpose of subsistence access. However, aircraft are allowed to access lands and waters in national parks and monuments for the purposes of engaging in any activity allowed by law other than the taking of fish and wildlife.



Map 4. Federal and State Controlled Use Areas in Unit 23.

Controlled Use Areas in Unit 26A

Anaktuvuk Pass Controlled Use Area

The BOG established the Anaktuvuk Pass Controlled Use Area in 2005 to reduce user conflicts during the caribou hunting season and to provide more opportunity for Anaktuvuk Pass residents to harvest caribou. The Anaktuvuk Controlled Use Area includes a portion of Unit 26A. This area is closed to the use of aircraft for hunting caribou, including the transportation of caribou hunters, their hunting gear, or parts of caribou from Aug. 15-Oct. 15; however, this provision does not apply to the transportation of caribou hunters, their hunting gear, or parts of caribou by aircraft between publicly owned airports (**Table 4**).

Table 4. Comparative summary of Controlled Use Areas pertaining to caribou in Units 23 and 26A, with aircraft closure periods noted.

Controlled Use Area	**Time Period**	**Aircraft closure**
Unit 23		
Noatak Controlled Use Area (State and Federal regulations)	Aug. 15-Sep. 30	To transportation of hunters or harvested **species.**
Selawik National Wildlife Refuge Area Not Authorized for Commercial Transporters and Guides	Year-round	To **big game** hunting by commercial guides and transporters
Noatak National Preserve Delayed Entry Controlled Use Area (National Park Service regulations)	Until after Sep. 22	To transportation of nonlocal **caribou** hunters
Unit 26A		
Anaktuvuk Pass Controlled Use Area (State regulations)	Aug. 15-Oct. 15	To use of aircraft for hunting **caribou**, including the transportation of caribou hunters, their hunting gear, or parts of caribou.

Biological Background

The TCH, WACH, and CACH have ranges that overlap in Unit 26A (**Map 5**), and there can be considerable mixing of herds during the fall and winter (Prichard et al. 2020). As the current request focuses on the migration of the WACH through Unit 23, this analysis will only consider the WACH as the ranges of the other herds do not include Unit 23 (Dau 2011, 2015, Lenart 2011, Parrett 2011, 2015c, 2015d).

Caribou abundance naturally fluctuates over decades (Gunn 2003, WACHWG 2011). Gunn (2003) reports the mean doubling rate for Alaskan caribou as 10 ± 2.3 years. Although the underlying mechanisms causing these fluctuations are uncertain, climatic oscillations (i.e. Arctic and Pacific Decadal Oscillations) may play an important role (Gunn 2003, Joly et al. 2011). Climatic oscillations can influence factors such as snow depth, icing, forage quality and growth, wildfire occurrence, insect levels, and predation, which all contribute to caribou population dynamics (Joly et al. 2011). Density-dependent reduction in forage availability, resulting in poorer body condition may exacerbate caribou population fluctuations (Gunn 2003).

Caribou calving generally occurs from late May to mid-June (Dau 2013). Weaning generally occurs in late October and early November before the breeding season (Taillon et al. 2011). Calves stay with their mothers through their first winter, which improves calves' access to food and body condition (Holand et al. 2012). Calves orphaned after weaning (October) have greater chances of survival than calves orphaned before weaning (Holand et al. 2012, Joly 2000, Russell et al. 1991, Rughetti and Festa-Bianchet 2014).

The WACH has historically been the largest caribou herd in Alaska and has a home range of approximately 157,000 square miles in northwestern Alaska. In the spring, most mature cows move north to calving grounds in the Utukok Hills, while bulls and immature cows lag behind and move toward summer range in the Wulik Peaks and Lisburne Hills (**Map 6**, Dau 2011, WACHWG 2011, 2019). After calving, cows and calves move west toward the Lisburne Hills where they mix with the bulls and non-maternal cows. During the summer, the herd moves rapidly to the Brooks Range. Calving locations of individuals average 35 miles apart from one year to the next, and 90% of females calved within one week from the previous year (Joly et al. 2021). The WACH has used the same general calving grounds for more than 100 years (Cameron et al. 2020).

Except for summer periods, little individual site-specific fidelity is observed from year to year, especially during the winter (Joly et al. 2021). Prior to 2016, the majority of the herd generally moved south toward wintering grounds south of the Brooks Range in the fall (Joly 2021, pers. comm.). The winter range fluctuates year to year as the WACH demonstrate low fidelity to wintering grounds (Joly et al. 2021). In the 1990s the winter range was predominately in the Nulato hills. The range moved to favor the Seward Peninsula from 2011 to 2016. However, since 2017, the winter range has mostly favored the Brooks Range (WACHWG 2021). The winter range in 2020 had the highest use of GAAR ever recorded with 71% of collared caribou using GAAR in the fall, while BELA had 0% usage (**Figure 6a**, Joly and Cameron. 2021). Rut occurs during fall migration (Dau 2011, WACHWG 2011).

The fall migration is more variable and shows less fidelity than the spring migration. While caribou still showed a fidelity to certain regions within the herd's range, in recent years, the timing of fall migration has been less predictable (Figure 2b, Joly et al. 2021). From 2010-2020, the average dates that GPS collared

caribou crossed the Noatak River ranged from September 6 to October 13; the Kobuk River ranged from Sep. 24-Nov. 3; and the Selawik River ranged from Oct. 2-Nov. 10 (Joly and Cameron 2021). From 2010-2016, caribou migration was trending to occur earlier in the year. However, from 2017-2020, there was a substantial delay before caribou crossed the Kobuk and Selawik Rivers but crossing of the Noatak has remained average with a slight trend to a later crossing date (**Figure 1, Table 6**). However, the percentage of collared caribou crossing all three rivers has declined since 2016. From 2010-2016 over 70% of collared caribou crossed the three rivers in the fall; from 2017-2020, only 58%, 28%, and 23% of collared caribou crossed the Noatak, Kobuk and Selawik Rivers during fall migration, respectively (**Table 6**). During the fall 2020 Northwest Arctic Council meeting in early November, Council members stated that only Noatak had harvested caribou in the fall and that caribou had not yet passed through the Southern portions of Unit 23.

In 2021, data from radio collared cows shows the caribou tracking along the north bank of the Kobuk River near Kiana, but not crossing, likely due to pan ice on the river (**Figure 6c**, WACHWG 2021). This corresponds with reports from Northwest Arctic Council members during their fall 2021 meeting who stated that caribou had not passed through Kiana before ice formed on the river (NWARAC 2021). The first GPS collared caribou did not cross the Kobuk River in 2020 until November, which is the latest first crossing since data collection began in 2010 (Joly 2021, pers. comm.).

Reasons for changes in migration phenology are unknown. However, Cameron et al. (2021) found a correlation between snow depth, temperature and changes in weather (e.g., wind) and autumn migration and timing in the WACH. During autumn migrations, caribou continuously adjust migratory behavior based on environmental conditions. Specifically, Western Arctic caribou migrated in response to snow events and cold temperatures but would pause migration when they encountered snow free areas or warmer temperatures. This corresponds with Traditional Ecological Knowledge, which has observed caribou migrating in response to weather (NWARAC 2021). In the range of the Western Arctic Herd, the climatic trend has been for warmer autumns and later snows, which has coincided with progressively later autumn migrations over multiple decades (Cameron et al. 2021). Caribou migrations are also closely related to the population size and density of the herd. Major changes in distributions can be influenced by low caribou population over a broad area. High caribou populations can have large scale lateral movements however, all or most parts of the range tend to be visited seasonally by at least scattered bands of animals (Burch 1972).

The proportion of caribou using certain migration paths also varies each year (**Figure 2**, Joly and Cameron 2020, **Figure 2a**, Baltensperger and Joly 2019). Changes in migration paths are likely influenced by multiple factors including food availability, snow depth, rugged terrain, and dense vegetation (Fullman et al. 2017, Nicholson et al. 2016). If caribou travelled the same migration routes every year, their food resources would likely be depleted (NWARAC 2016a). Anthropogenic factors can also influence migration paths. Radio collared caribou data has shown that the Red Dog Mine road near Kivalina has significantly hindered the fall migration along the coast with many caribou turning around rather than crossing the road (**Figure 6b**, Wilson et al. 2016, WACHWG 2021). There is the risk that repeated disruption to migratory pathways may eventually lead to herd memory of these routes being lost (Baltensperger and Joly 2019; Nicholson et al. 2016).

The WACH Working Group consists of a broad spectrum of stakeholders, including subsistence users, sport hunters, conservationists, hunting guides, reindeer herders and transporters. The Group is also technically

supported by NPS, FWS, BLM, and ADF&G personnel. The WACH Working Group developed a WACH Cooperative Management Plan in 2003 and revised it in 2011 and 2019 (WACHWG 2011, 2019). The WACH Management Plan identifies nine plan elements: cooperation, population management, habitat, regulations, reindeer, knowledge, education, human activities, and changing climate, as well as associated goals, strategies, and management actions. As part of the population management element, the WACH Working Group developed a guide to herd management determined by population size, population trend, and harvest rate. Population sizes guiding management level determinations were based on recent (since 1970) historical data for the WACH (WACH Working Group 2011, 2019). Revisions to recommended harvest levels under liberal and conservative management were made in 2015 (WACH Working Group 2015) and 2019 (WACH Working Group 2019, **Table 5**).

The WACH population declined rapidly in the early 1970s, bottoming out at about 75,000 animals in 1976. Aerial photocensuses have been used since 1986 to estimate population size. The WACH population increased throughout the 1980s and 1990s, peaking at 490,000 animals in 2003 (**Figure 3**). Beginning in 2003, the herd declined at an average annual rate of 7.1% from approximately 490,000 caribou to 200,928 caribou in 2016 (Caribou Trails 2014; Dau 2011, 2014, Parrett 2016). In 2017, the herd increased to an estimated 259,000 caribou (Parrett 2017a). However, part of this increase may have been due to improved photographic technology as ADF&G switched from film to higher resolution digital cameras. The 2019 population estimate was 244,000 caribou (Hansen 2019a). No photocensus was completed in 2020, but ADF&G completed a census in 2021 (WACHWG 2020). The 2021 population estimate was 188,000 with a 95% confidence interval of +/- 11,855 and a minimum count of 180,374. This is approximately a 24% decline from the 2019 population estimate (WACHWG 2021).

Between 1982 and 2011, the WACH population was within the liberal management level prescribed by the WACH Working Group (**Figure 3, Table 5**). In 2013, the herd population estimate fell below the population threshold for liberal management of a decreasing population (265,000), slipping into the conservative management level. In 2020, as no photocensus was completed, the WACH Working Group voted to maintain the herd's status at the conservative declining level (WACH Working Group 2020). The 2021 population estimate fell below the population threshold for conservative management of a decreasing population (200,000). The WACH Working Group voted to place the herd in the preservative declining level (WACHWG 2021).

Between 1970 and 2021, the bull:cow ratio exceeded Critical Management levels identified in the 2019 WACH Management Plan (**Figure 4**). However, the average annual number of bulls:100 cows was greater during the period of population growth (54:100 between 1976–2001) than during the recent period of decline (44:100 between 2004-2016). However, in 2017 the bull:100 cow ratio was the highest since 1998 at 54 bulls:100 cows. In 2021, that ratio fell slightly to 47 bulls:100 cows (**Figure 4,** WACHWG 2021). Additionally, Dau (2015) states that while trends in bull:cow ratios are accurate, actual values should be interpreted with caution due to sexual segregation during sampling and the inability to sample the entire population, which likely account for more annual variability than actual changes in composition.

Although factors contributing to the 2003-2016 decline are not known with certainty, increased adult cow mortality, and decreased calf recruitment and survival played a role (Dau 2011). Since the mid-1980s, adult mortality has slowly increased while recruitment has slowly decreased (**Figure 5**, Dau 2013). Prichard

(2009) developed a population model specifically for the WACH using various demographic parameters and found adult survival to have the largest impact on population size, followed by calf survival and then parturition rates.

Calf production has likely had little influence on the population trajectory (Dau 2013, 2015). Between 1990 and 2003, the June calf:cow ratio averaged 66 calves:100 cows/year. Between 2004 and 2016, the June calf:cow ratio averaged 71 calves:100 cows/year (**Figure 6**). In June 2018, 86 calves:100 cows were observed, which approximates the highest parturition level ever recorded for the herd (86 calves:100 cows in 1992) (Dau 2016a, WACH Working Group 2021). Since 2018 the parturition rates have continued to fall. In 2021, the calf:cow ratio was 68 calves:100 cows. The long-term average (1992-2021) has also decreased to 70 calves:100 cows/year (WACH Working Group 2021).

Decreased calf survival through summer and fall and recruitment into the herd likely contributed to the recent population decline (Dau 2013, 2015). Fall calf:cow ratios indicate calf survival over summer. Between 1976 and 2017, the fall calf:cow ratio ranged from 35 to 59 calves:100 cows/year, averaging 47 calves:100 cows/year (**Figure 6**). Since 2008, ADF&G has recorded calf weights at Onion Portage as an index of herd nutritional status. In September 2015, calf weights averaged 100 lbs., the highest average ever recorded (Parrett 2015b).

Similarly, the ratio of short yearlings (SY, 10-11 months old caribou) to adults provides a measure of overwintering calf survival and recruitment. Between 1990 and 2021, SY:adult ratios ranged from 9-26 and averaged 17 SY:100 adults/year (**Figure 6**). SY:100 adult ratios were high from 2016-2018, ranging from 22-23 SY:100 adults (Dau 2016b, NWARAC 2019a). The 2021 SY:100 adult ratio was 17 SY:100 adults (WACH Working Group 2021).

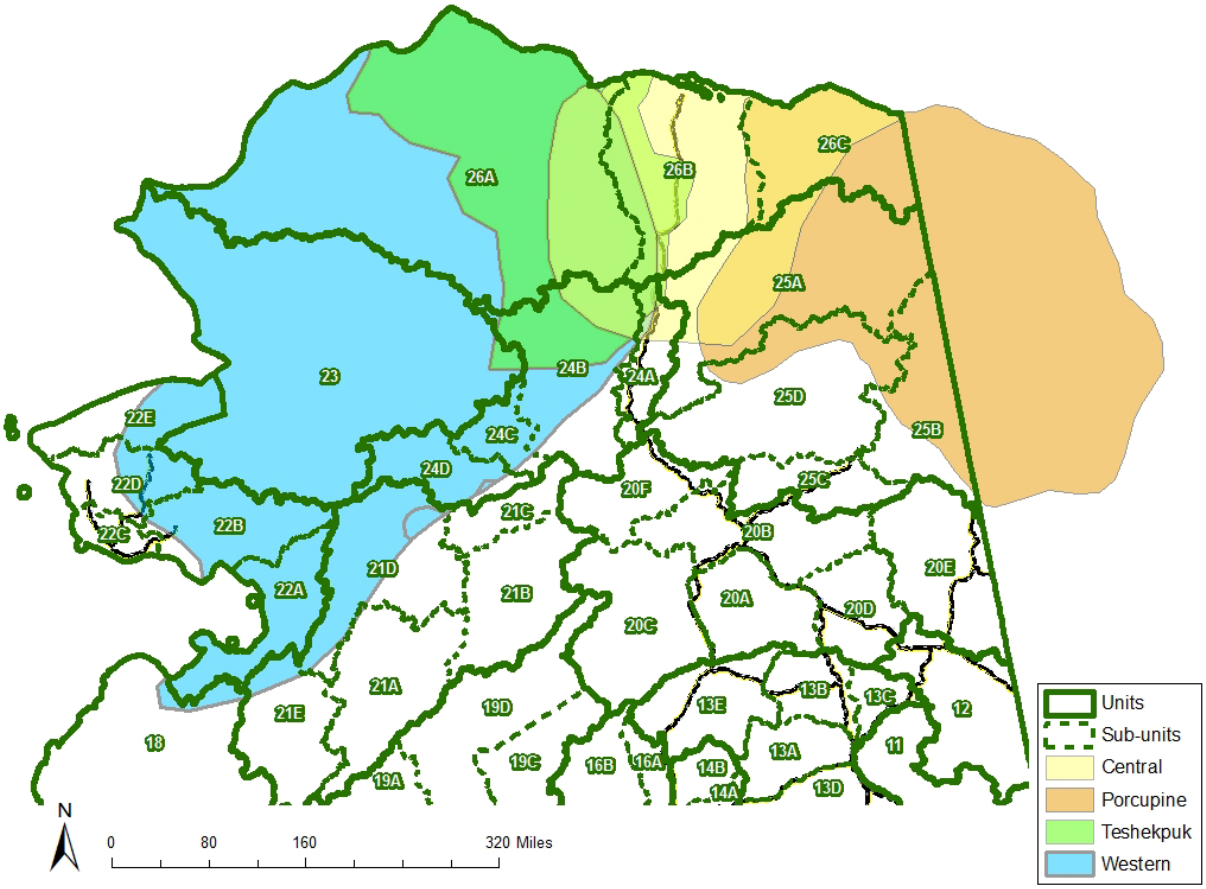
Cow mortality affects the trajectory of the herd (Dau 2011, 2013, Prichard 2009, NWARAC 2019a). The annual mortality rate of radio-collared adult cows increased from an average of 15% between 1987 and 2003 to 23% from 2004-2014 (**Figure 5,** Dau 2011, 2013, 2014, 2015). Mortality rates declined in 2015 and 2016, but then increased sharply in 2017. However, the increased mortality rate in 2017 may be due to a low and aging sample size as few caribou have been collared in the past two years (Prichard et al. 2012, NWARAC 2019a) and/or difficult weather conditions (Gurarie et al. 2020). Estimated mortality includes all causes of death including hunting (Dau 2011). Dau (2015) states that cow mortality estimates are conservative due to exclusion of unhealthy (i.e. diseased) and yearling cows from collaring. Dau (2013) attributed the high mortality rate for 2011-2012 (33%, **Figure 5**) to a winter with deep snows, which weakened caribou and enabled wolves to prey upon them more easily. Prior to 2004, estimated adult cow mortality only exceeded 20% twice, but exceeded 20% in 7 out of 9 regulatory years between 2004 and 2012 (**Figure 5**). These estimates are susceptible to collar sample size and how long the collars have been on individuals (Dau 2015, Prichard et al. 2012).

Far more caribou died from natural causes than from hunting between 1992 and 2012 (Dau 2013). Cow mortality remained constant throughout the year, but natural and harvest mortality for bulls spiked during the fall. However, as the WACH has declined and estimated harvest has remained relatively stable, the percentage of mortality due to hunting has increased relative to natural mortality. For example, during the period October 1, 2013 to September 30, 2014, estimated hunting mortality was approximately 42% and estimated natural mortality about 56% (Dau 2014). In previous years (1983–2013), the estimated hunting

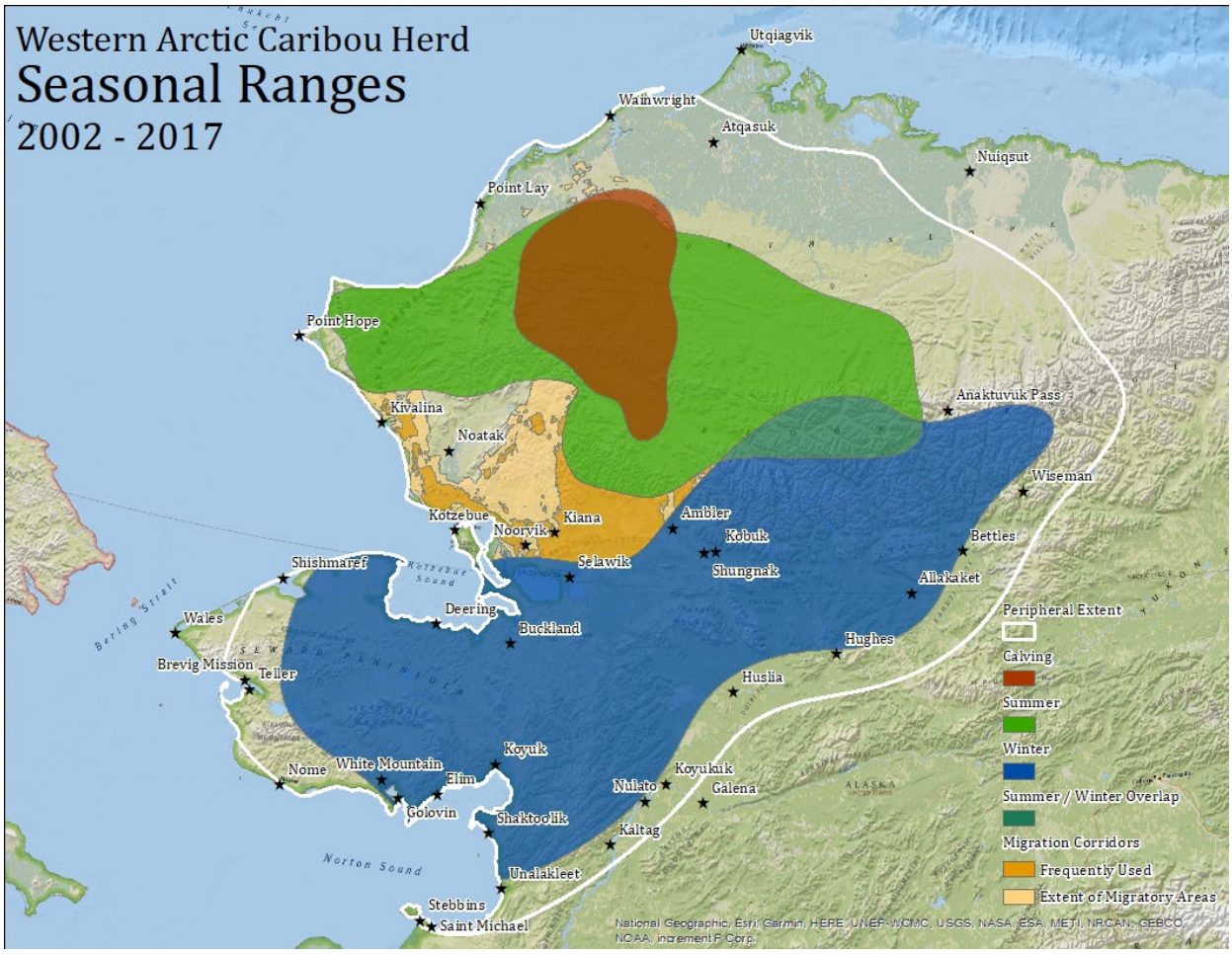
mortality exceeded 30% only once in 1997-1998 (Dau 2013). However, the accuracy of estimated harvest is unknown but is thought to relatively imprecise and of limited value (WACH Working Group 2021). Additionally, Prichard (2009) and Dau (2015) suggest that harvest levels and rates of cows can greatly impact population trajectory. If bull:cow ratios continue to decline, harvest of cows may increase, exacerbating the current population decline.

Increased predation, hunting pressure, deteriorating range condition (including habitat loss and fragmentation), climate change, fall and winter icing events, and disease may be contributing factors to the population decline (Dau 2015, 2014, Joly et al. 2011). Joly et al. (2007) documented a decline in lichen cover in portions of the wintering areas of the WACH, which continued through at least 2015 (BLM, unpublished data). Dau (2011, 2014) speculated that degradation in range condition is not thought to be a primary factor in the decline of the herd because animals have generally maintained good body condition in fall since the decline began. Body condition is estimated using a subjective scale from 1-5. The fall body condition of adult females in 2015 was characterized as "fat" (mean= 3.9/5) with no caribou being rated as skinny or very skinny (Parrett 2015b). However, the body condition of the WACH in the spring may be a better indicator of the effects of range condition versus the fall when the body condition of the herd is routinely assessed and when caribou are in prime condition (Joly 2015, pers. comm.). So, range degradation could be a factor in the decline of the herd.

Caribou feed on a wide variety of plants including lichens, fungi, sedges, grasses, forbs, and twigs of woody plants. Arctic caribou depend primarily on lichens during the fall and winter, but during summer they feed on leaves, grasses and sedges (Joly and Cameron 2018, Miller 2003).



Map 5. Herd overlap and ranges of the WACH, TCH, CACH, and PCH.



Map 6. Western Arctic Caribou Herd seasonal range map, 2002-2017 (image from WACHWG 2019).

Table 5. Western Arctic Caribou Herd management levels using herd size, population trend, and harvest rate (WACH Working Group 2019).

Management and Harvest Level	Population Trend			Harvest Recommendations May Include:
	Declining Adult Cow Survival <80% Calf Recruitment <15:100	**Stable** Adult Cow Survival 80%-88% Calf Recruitment 15-22:100	**Increasing** Adult Cow Survival >88% Calf Recruitment >22:100	
Liberal	Pop: 265,000+ Harvest: 14,000+	Pop: 230,000+ Harvest: 14,000+	Pop: 200,000+ Harvest: 14,000+	• Reduce harvest of bulls by nonresidents to maintain at least 30 bulls:100 cows • No restriction of bull harvest by resident hunters unless bull:cow ratios fall below 30 bulls:100 cows
Conservative	Pop: 200,000-265,000 Harvest: 10,000-14,000	Pop: 170,000-230,000 Harvest: 10,000-14,000	Pop: 150,000-200,000 Harvest: 10,000-14,000	• Encourage voluntary reduction in calf harvest, especially when the population is declining • No cow harvest by nonresidents • Restriction of bull harvest by nonresidents • Limit the subsistence harvest of bulls only when necessary to maintain a minimum 30:100 bull:cow ratio
Preservative	Pop: 130,000-200,000 Harvest: 6,000-10,000	Pop: 115,000-170,000 Harvest: 6,000-10,000	Pop: 100,000-150,000 Harvest: 6,000-10,000	• No harvest of calves • Limit harvest of cows by resident hunters through permit hunts and/or village quotas • Limit the subsistence harvest of bulls to maintain at least 30 bulls:100 cows • Harvest restricted to residents only, according to state and federal law. Closure of some federal public lands to non-qualified users may be necessary
Critical	Pop: <130,000 Harvest: <6,000	Pop: <115,000 Harvest: <6,000	Pop: <100,000 Harvest: <6,000	• No harvest of calves • Highly restrict the harvest of cows through permit hunts and/or village quotas • Limit the subsistence harvest of bulls to maintain at least 30 bulls:100 cows • Harvest restricted to residents only, according to state and federal law. Closure of some federal public lands to non-qualified users may be necessary

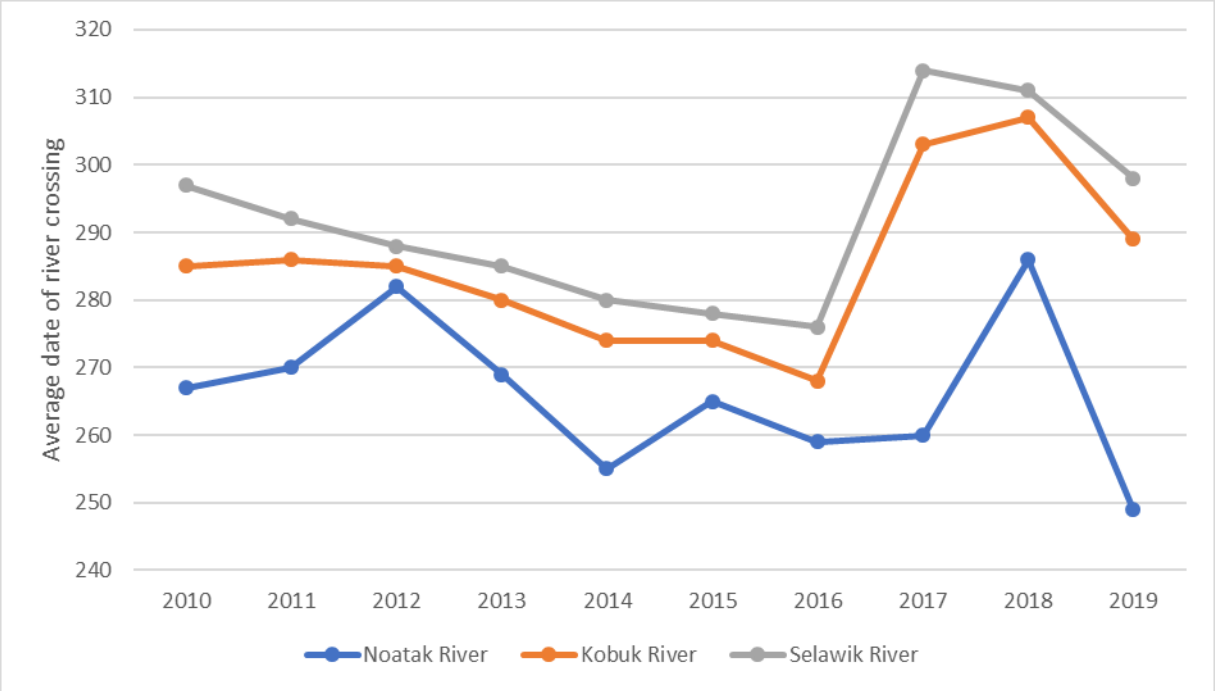
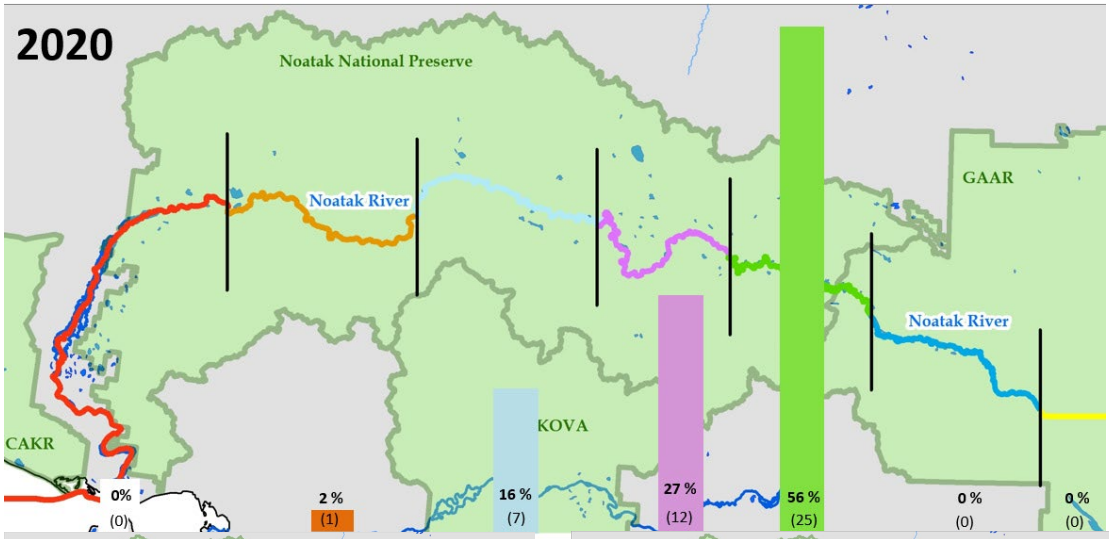


Figure 1. Average dates GPS collared caribou crossed the Noatak, Kobuk and Selawik Rivers during fall migration. Calendar dates were converted to numerical dates (e.g., February 1 would be 32). (Joly and Cameron 2021).

Table 6. Fall migration timing and prevalence of river crossing events by Western Arctic Herd caribou. Reported results are average date (standard deviation in number of days); percentage of collared cows crossing; and sample size results for generally southward 'fall' migration. Dates are for the first crossing if the individual re-crosses. Duration is the number days between Noatak and Selawik River crossings. Average (Ave) is for all years. (Table from Joly and Cameron 2021).

Year	Noatak River			Kobuk River			Selawik River			Duration
	Crossing Date (SD)	% Crossed	N	Crossing Date (SD)	% Crossed	N	Crossing Date (SD)	% Crossed	N	
2020	Sep 26 (23.0)	63.9%	72	Nov 3 (1.0)	5.6%	72	Nov 9 (0.6)	5.6%	72	45
2019	Sept 6 (42.7)	46.8%	47	Oct 16 (13.3)	36.2%	47	Oct 25 (14.4)	27.7%	47	49
2018	Oct 13 (28.6)	56.0%	50	Nov 3 (23.2)	20.0%	50	Nov 7 (16.1)	16.0%	50	35
2017	Sep 17 (40.0)	65.9%	82	Oct 30 (22.5)	48.1%	81	Nov 10 (18.2)	42.3%	78	54
2016	Sept 15 (21.1)	73.3%	75	Sep 24 (12.7)	58.1%	74	Oct 2 (15.4)	52.1%	73	17
2015	Sep 22 (29.5)	85.7%	49	Oct 1 (22.3)	85.4%	48	Oct 5 (21.0)	85.4%	48	13
2014	Sep 12 (19.9)	88.9%	45	Oct 1 (15.8)	84.8%	45	Oct 7 (15.6)	86.4%	44	25
2013	Sep 26 (16.9)	100%	35	Oct 7 (17.4)	91.4%	35	Oct 12 (16.4)	88.6%	35	16
2012	Oct 8 (20.8)	84.8%	33	Oct 11 (17.7)	78.8%	33	Oct 14 (18.1)	70.0%	33	6
2011	Sep 27 (37.2)	74.4%	39	Oct 13 (27.0)	71.8%	39	Oct 19 (27.4)	61.5%	39	22
2010	Sep 24 (16.4)	96.7%	30	Oct 12 (17.6)	76.7%	30	Oct 24 (11.7)	62.1%	29	30
Avg	**Sep 23 (11.0)**	**76.0%**	**51**	**Oct 14 (13.6)**	**59.7%**	**50**	**Oct 21 (14.2)**	**54.3%**	**50**	**28**
2010-2016 Avg		**86.3%**	**44**		**78.1%**	**43**		**72.3%**	**43**	
2017-2020 Avg.		**58.2%**	**63**		**27.5%**	**63**		**22.9%**	**62**	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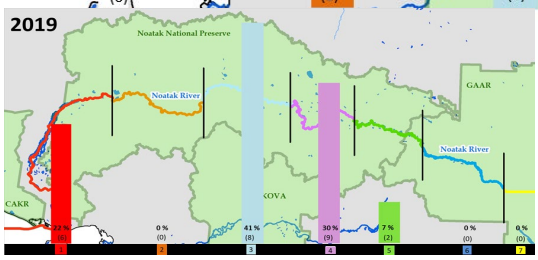
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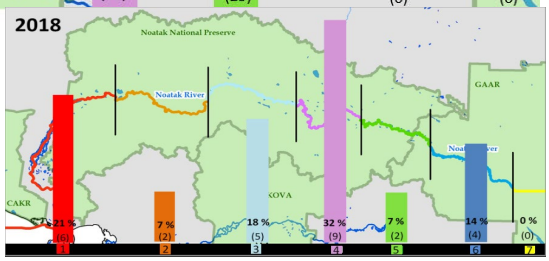
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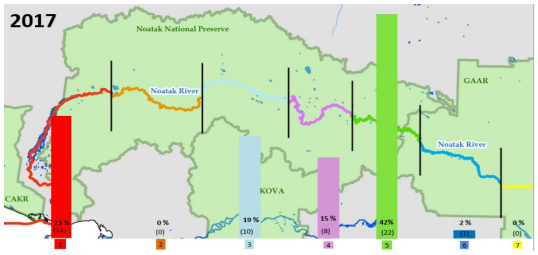
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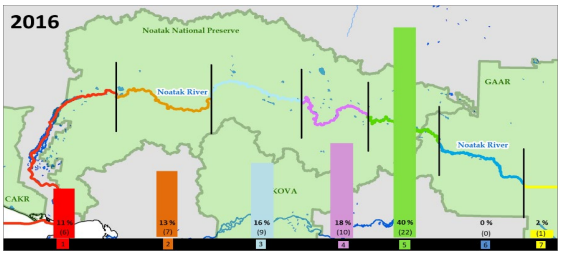
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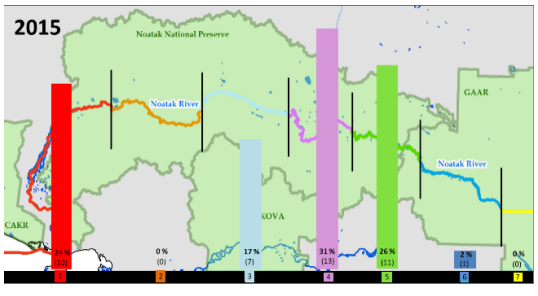
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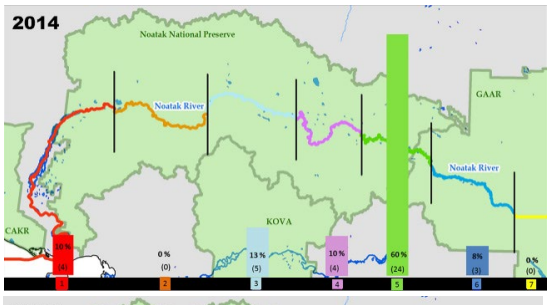
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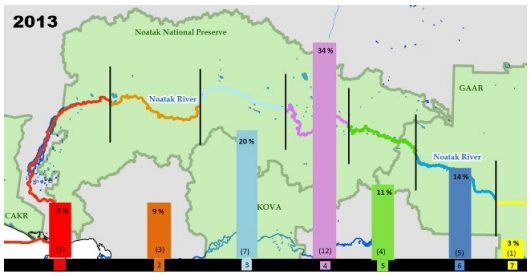
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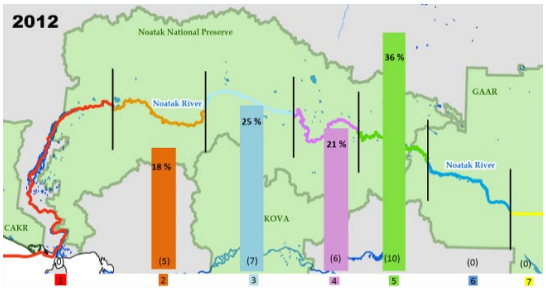
2012
Noatak National Preserve
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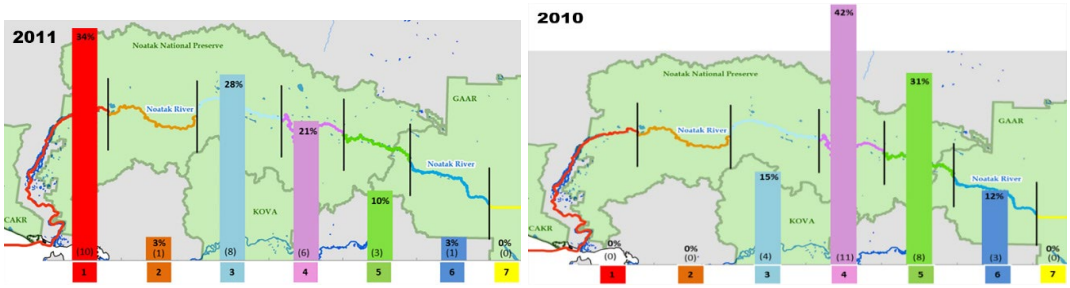

Figure 2. 2010-2020 distribution of caribou crossing the Noatak River during fall. Histograms depict where collared female caribou crossed the Noatak River, generally from north to south, on their fall migration. Relative percentages (top number) and the absolute number (middle number) of caribou are provided. The river is divided into seven (lowest number) color-coded segments which are displayed in the background. The middle five segments are 100 river kilometers long, while the westernmost segment (red) is 200 km (before extending into the Chukchi Sea) and the easternmost (yellow) runs as far east as WACH caribou are known to migrate (Joly and Cameron 2021).

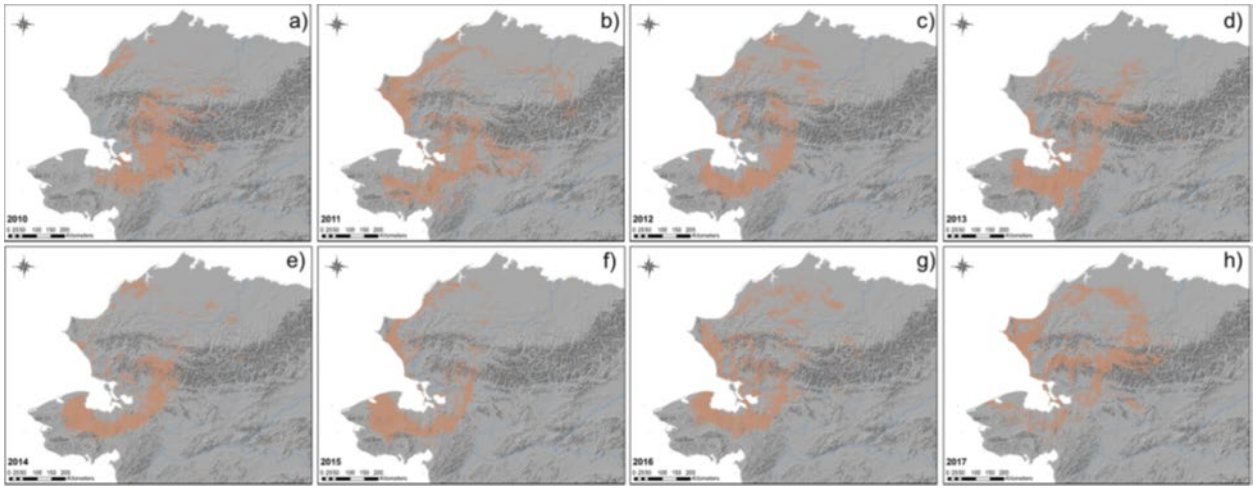

Figure 2a Modeled distribution of Western Arctic Herd caribou during the fall migration season. Models were developed for each year from 2010 to 2017 (a–h) (Baltensperger and Joly 2019).

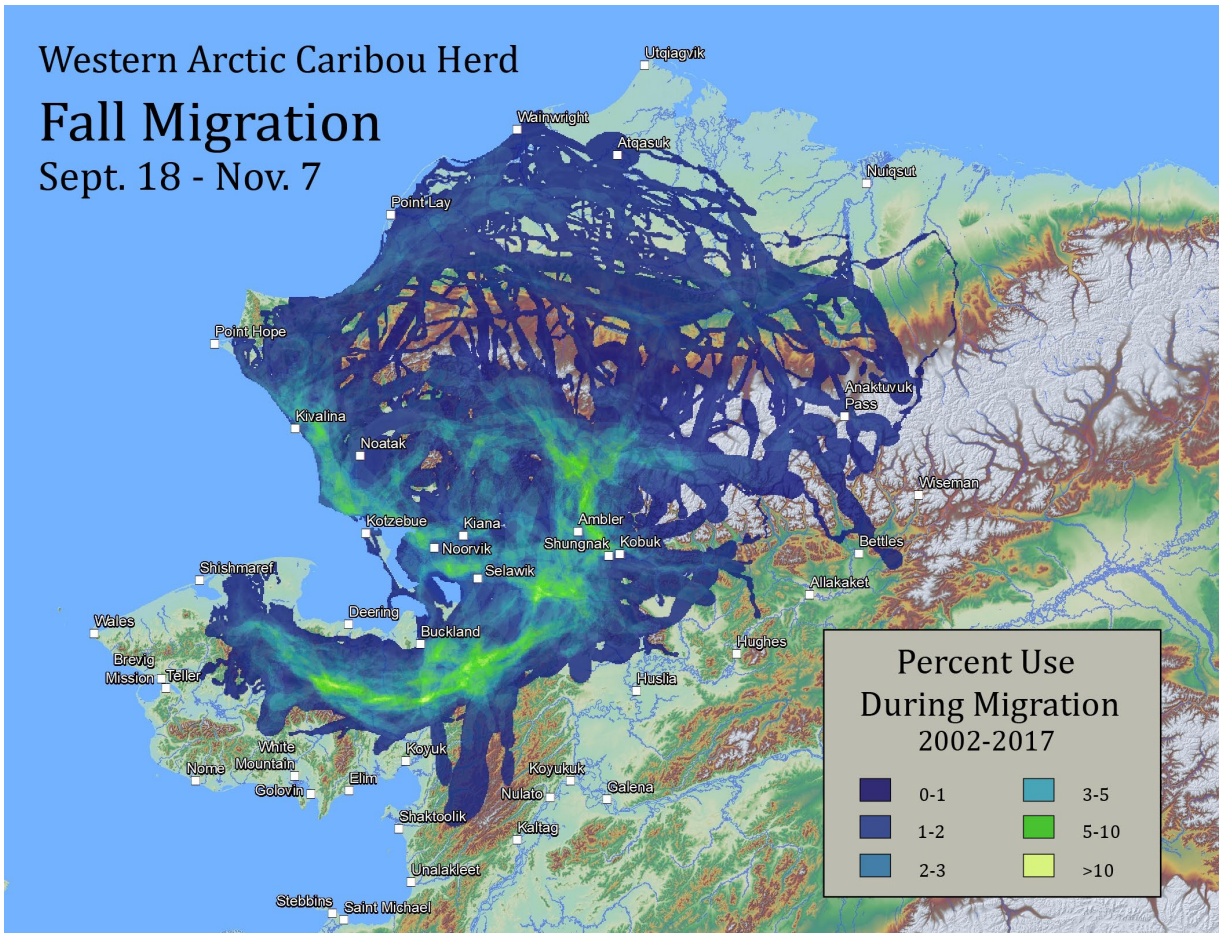

Figure 2b. 2002-2017 fall migration of collared cows, showing areas of concentrated use (WACH WG 2019).

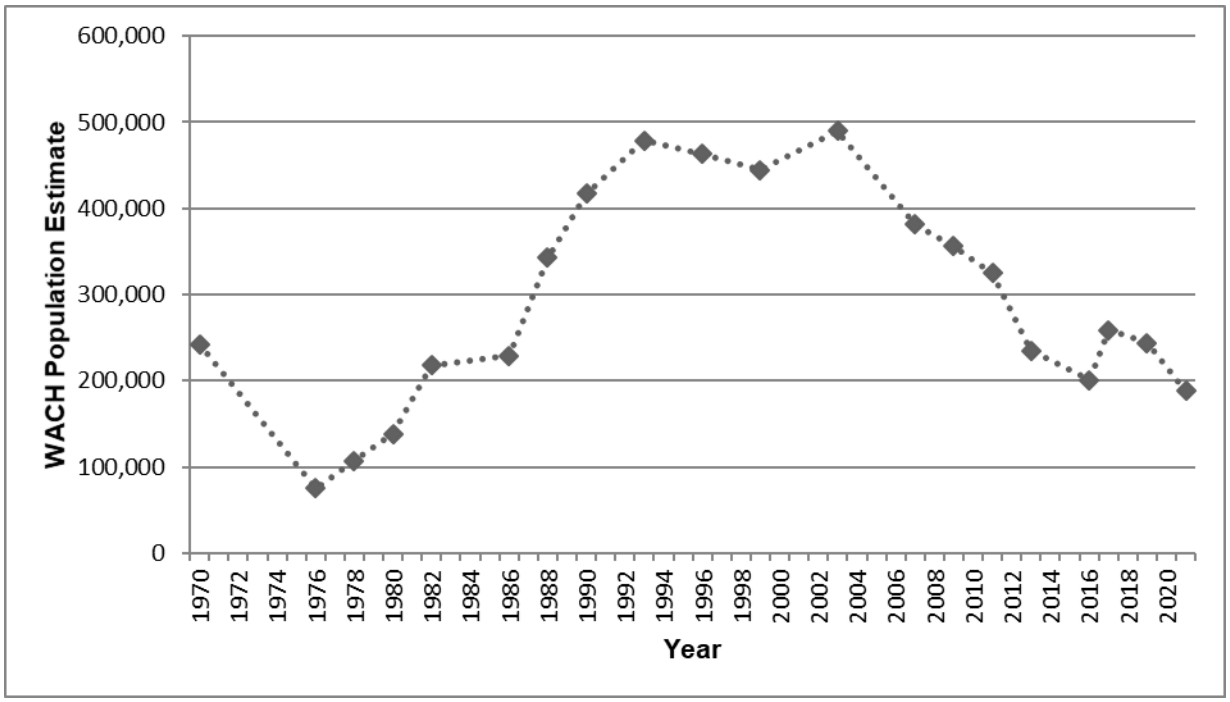

Figure 3. The WACH population estimates from 1970–2021. Population estimates from 1986–2021 are based on aerial photographs of groups of caribou that contained radio-collared animals (Dau 2011, 2013, 2014, Parrett 2016, 2017a, Hansen 2019a, WACHWG 2021).

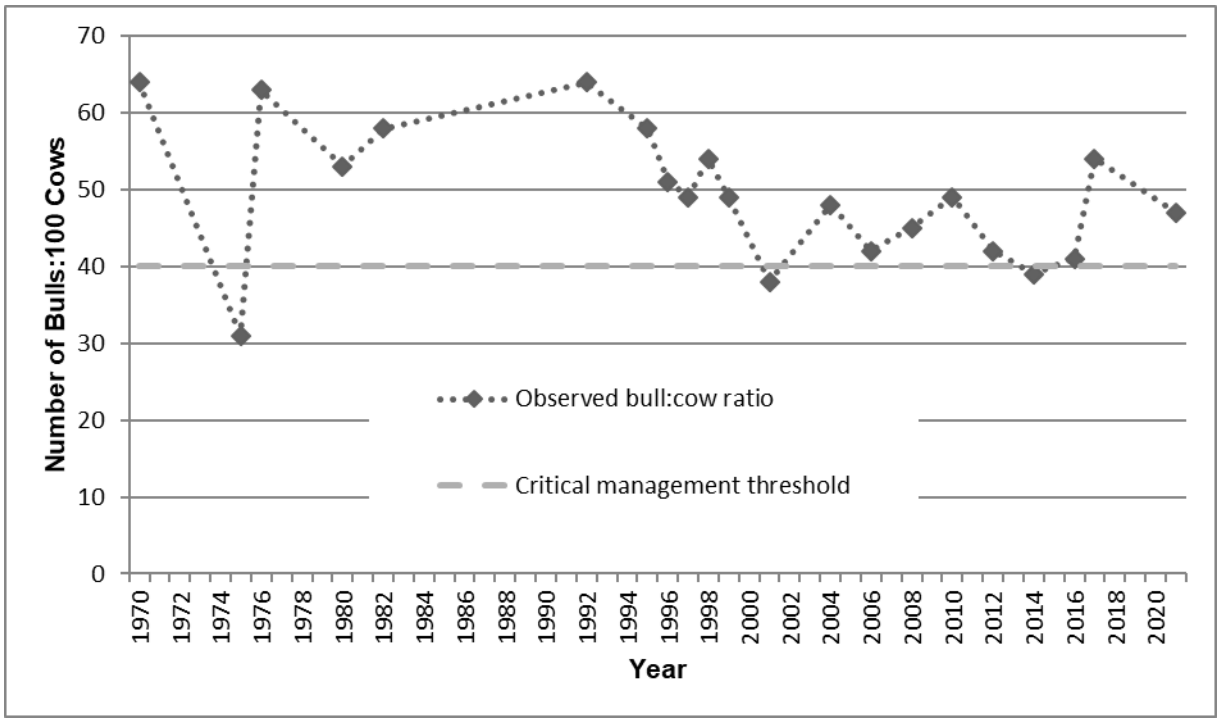

Figure 4. Bull:cow ratios for the WACH (Dau 2015, ADF&G 2017c, Parrett 2017a, WACHWG 2021).

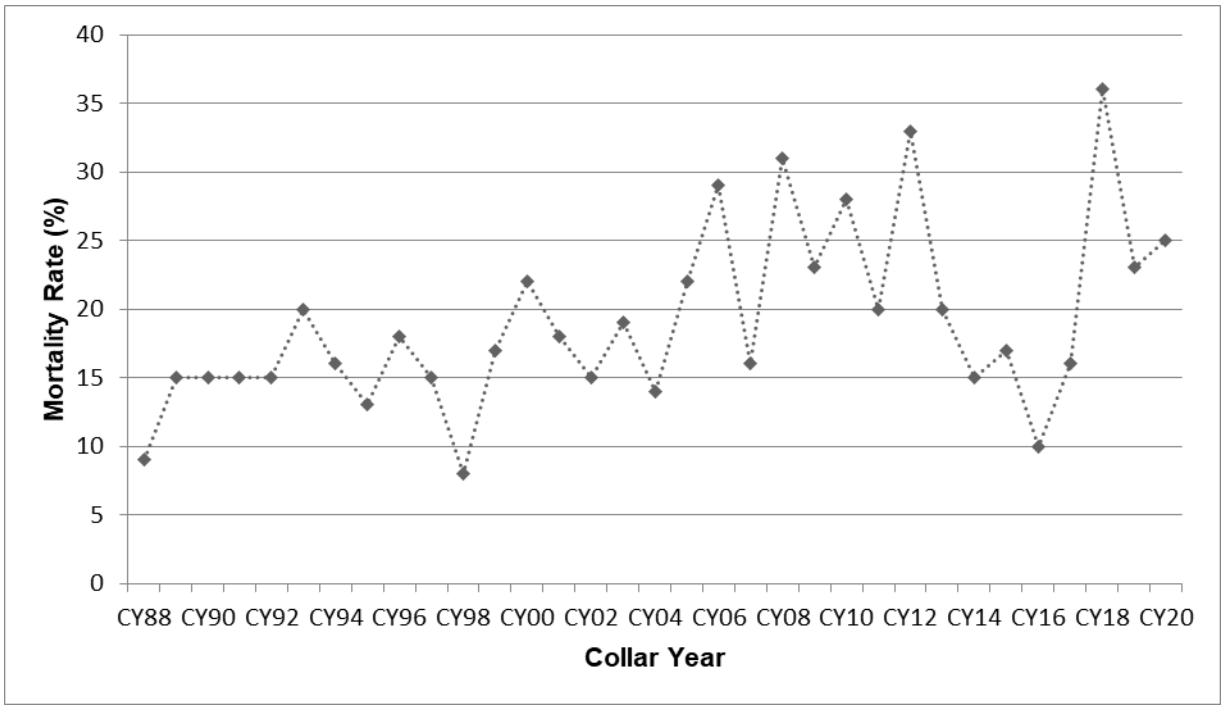

Figure 5. Mortality rate of radio-collared cow caribou in the Western Arctic caribou Herd (Dau 2013, 2015, 2016b, NWARAC 2019a, WACHWG 2020, WACHWG 2021). Collar Year = 1 Oct-Sep 30.

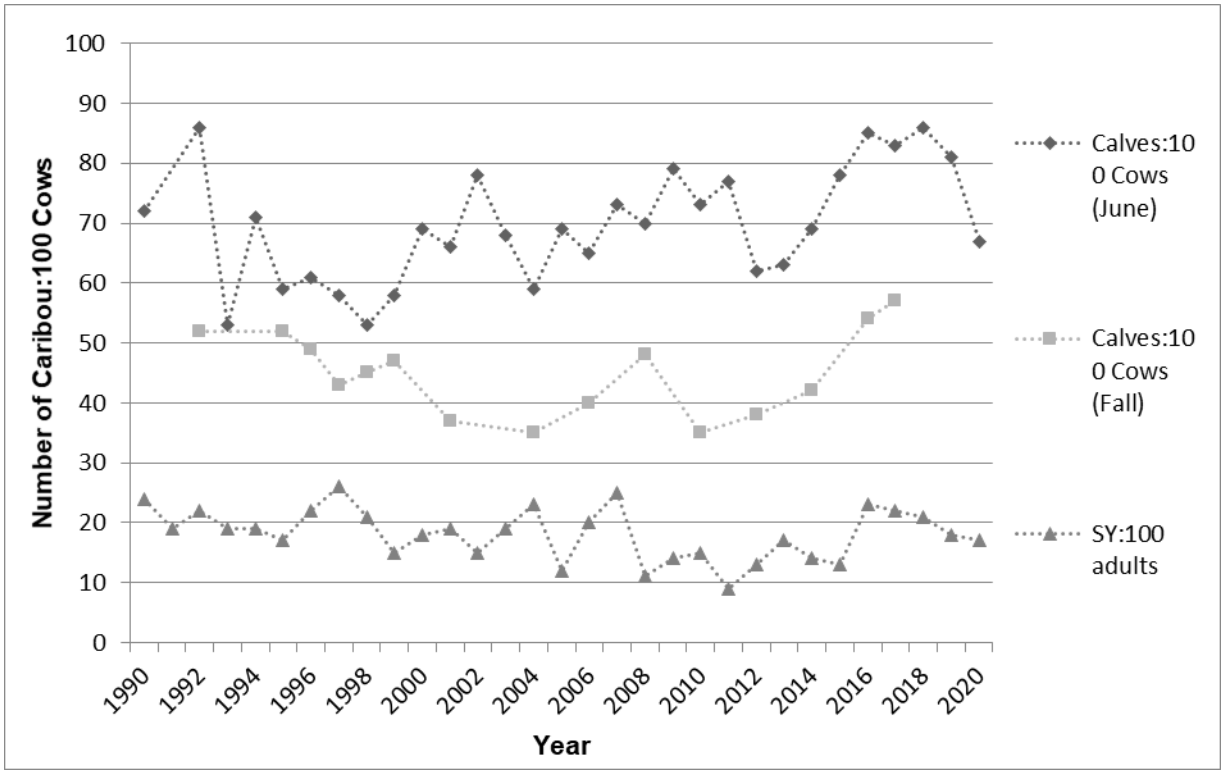

Figure 6. Calf:cow and short yearling (SY):adult ratios for the WACH (Dau 2013, 2015, 2016a, ADF&G 2017c, Parrett 2017a, NWARAC 2019a, WACHWG 2021). Short yearlings are 10-11 months old caribou.

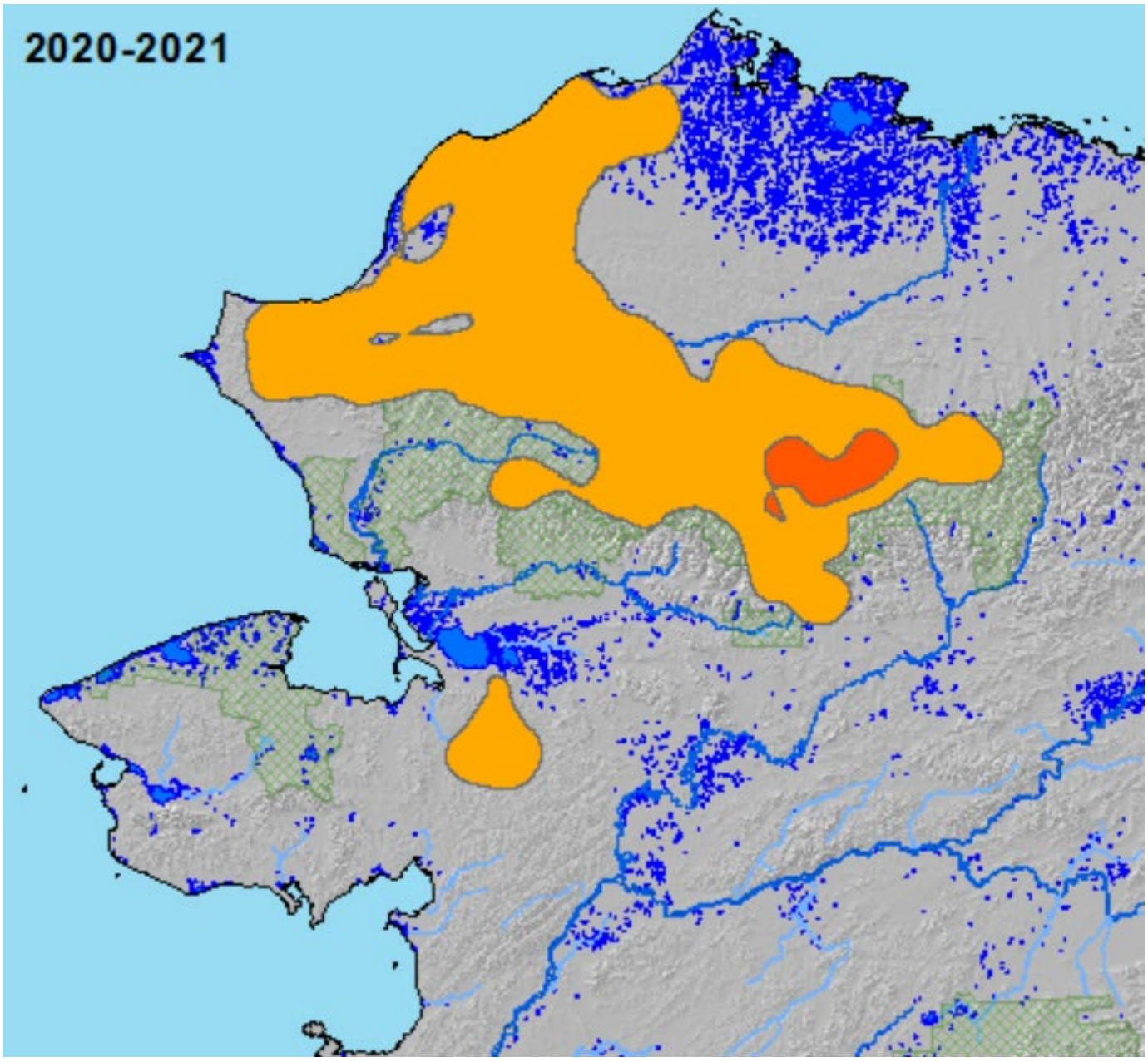

Figure 6a. 2020–2021 annual (September 1–August 31) range use of Western Arctic Herd caribou. Light orange depicts the 95% kernel and dark orange the 50% kernel. Green hatched areas are NPS units (Joly, K., and M.D. Cameron. 2021).

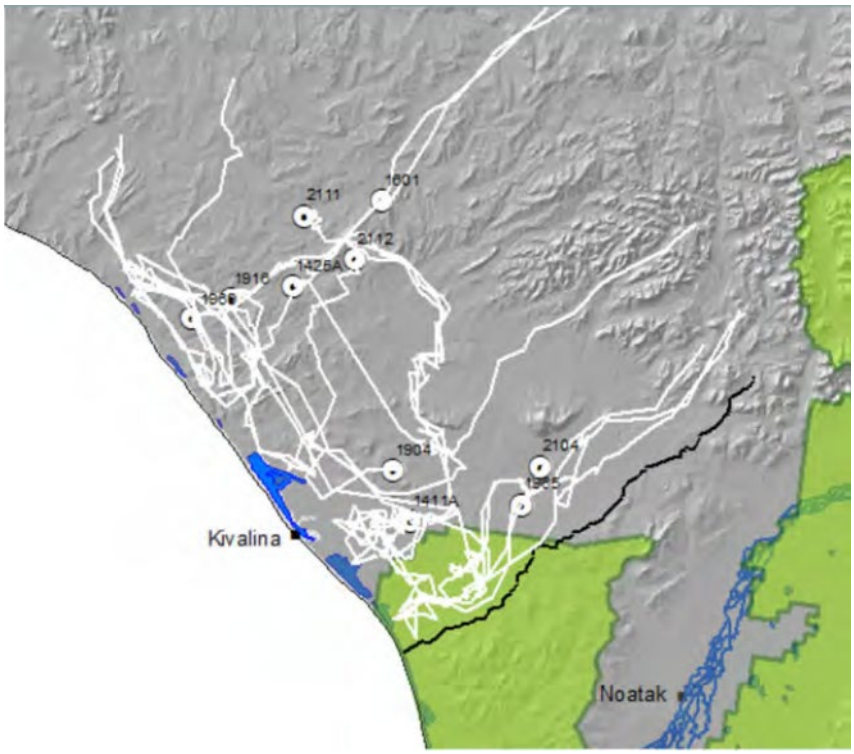

Figure 6b. Radio collared caribou tracks near the Red Dog mine road during fall migration 2021 (WACHWG 2021).

Figure 6c. Radio collared caribou tracks along the Kobuk River near Kiana during fall migration 2021 (WACHWG 2021)

Harvest History

The WACH Working Group provides recommendations on herd management, including harvest levels. Currently, the WACH is within the "preservative declining" level, which prescribes a harvest of 6,000-10,000 caribou (**Table 5**). Previous versions of the WACH management plan recommended a harvest rate of 6% of the estimated population when the herd was declining (WACH Working Group 2011, Parrett 2017b, pers. comm.). As the 2021 population estimate was 188,000 caribou, the harvestable surplus is currently 11,280 caribou (6% of 188,000) (WACH Working Group 2021). The State manages the WACH on a sustained yield basis (i.e. managing current harvests to ensure future harvests). Of particular concern is the overharvest of cows, which has probably occurred since 2010/11 (Dau 2015). Dau (2015:14-29) states, "even modest increases in the cow harvest above sustainable levels could have a significant effect on the population trajectory of the WACH."

Caribou harvest by local hunters is estimated from community harvest surveys (**Table 7, Table 9**), if available, and from models developed by A. Craig with ADF&G's Division of Wildlife Conservation Region V. These models incorporate factors such as community size, availability of caribou, and per capita harvests for each community, which are based on mean values from multiple community harvest surveys (Dau 2015). In 2015, Craig's models replaced models developed by Sutherland (2005), resulting in changes to local caribou harvest estimates from past years. While Craig's models accurately reflect harvest trends, they do not accurately reflect actual harvest numbers (Dau 2015). (Note: no model accurately reflects harvest numbers). This analysis only considers the updated harvest estimates using Craig's new model as cited in Dau (2015). Caribou harvest by nonlocal residents and nonresidents are based on harvest ticket reports (Dau 2015). Hunters considered local by ADF&G are functionally identical to Federally qualified subsistence users (e.g. residents of St. Lawrence Island are technically Federally qualified subsistence users, but do not frequently harvest Western Arctic caribou) (**Map 2**).

From 1999–2018, the average estimated total harvest from the WACH was 14,103 caribou/year, ranging from 11,729-16,219 caribou/year (**Figure 7**, Hansen 2020 and 2021, pers. comm.), but has generally been estimated at 12,000 +/- 1,750 caribou per year since 1996 (WACH Working Group 2021, WACH management plan 2019). However, all of these harvest estimates are above the preservative harvest level specified in the WACH Management Plan. Additionally, harvest estimates do not include wounding loss, which may be hundreds of caribou (Dau 2015). Year-specific harvest estimates have not been generated since 2018, in part because they are not very accurate (Hansen 2021, pers. comm., WACH Working Group 2021).

Local hunters account for approximately 95% of the total WACH harvest and residents of Unit 23 account for approximately 58% of the total harvest on average (ADF&G 2017c). Comparison of caribou harvest by community from household survey data (**Table 7, Table 9**) with **Figure 2** demonstrates that local community harvests parallel WACH availability rather than population trends. For example, Ambler only harvested 325 caribou when the WACH population peaked in 2003 but harvested 685 caribou in 2012 when most of the WACH migrated through eastern Unit 23. Similarly, Noatak only harvested 66 caribou in 2010 when no GPS-collared caribou migrated through western Unit 23. Harvest increased substantially (360 caribou) the following year when 37% of the GPS-collared caribou (and thus, a greater proportion of the WACH) migrated through western Unit 23 (**Table 7**).

Between 1998 and 2020, annual reported caribou harvest in Unit 23 ranged from 168-814 caribou (Hansen 2021, pers. comm.; **Figure 8**). Over the same time period, reported harvest by non-Federally qualified users ranged from 131-657 caribou. The lowest reported harvest occurred in 2016 when all Federal public lands in Unit 23 were closed to non-Federally qualified users, but before harvest reporting was required for Federally qualified subsistence users living locally. Regardless, local compliance with reporting mandates is considered low but increasing. In 2017, the BOG began requiring registration permits, which is reflected in the greater number of reported caribou harvest by Federally qualified subsistence users (**Figure 8**). On average, 76% of WACH caribou harvested by nonlocals are harvested in Unit 23 (Dau 2015). Between 2016, when Federal lands closure began, and 2020, reported caribou harvest by non-local hunters in Unit 23 averaged 254 caribou (WinfoNet 2018, 2019, Hansen 2021 pers. comm.).

From 1999-2013, 72% of nonlocal hunters on average accessed the WACH by plane. Most nonlocal harvest (85-90%) occurs between August 25 and October 7. Most local subsistence hunters harvest WACH caribou whenever they are available using boats, 4-wheelers, and snowmachines (Dau 2015, Fix and Ackerman 2015). In Unit 23, caribou have historically been available during fall migration, but this has no longer been the case in recent years; caribou migration has occurred later in fall, resulting in subsistence harvest also occurring later, which in turn contributes to food insecurity.

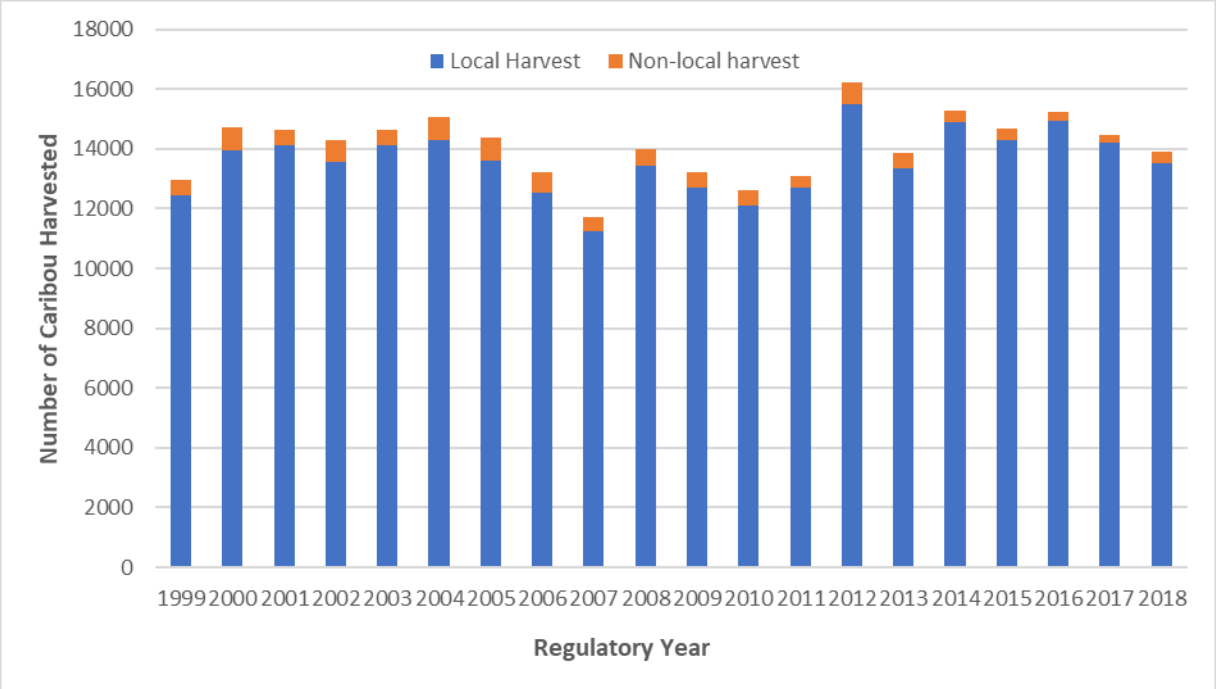

Figure 7. Estimated number of caribou harvested from the WACH by user group (Dau 2015, Hansen 2020, pers. comm.). Local harvest is an estimate derived from models; non-local harvest is from harvest reports. Estimates of local harvest are not available after 2018.

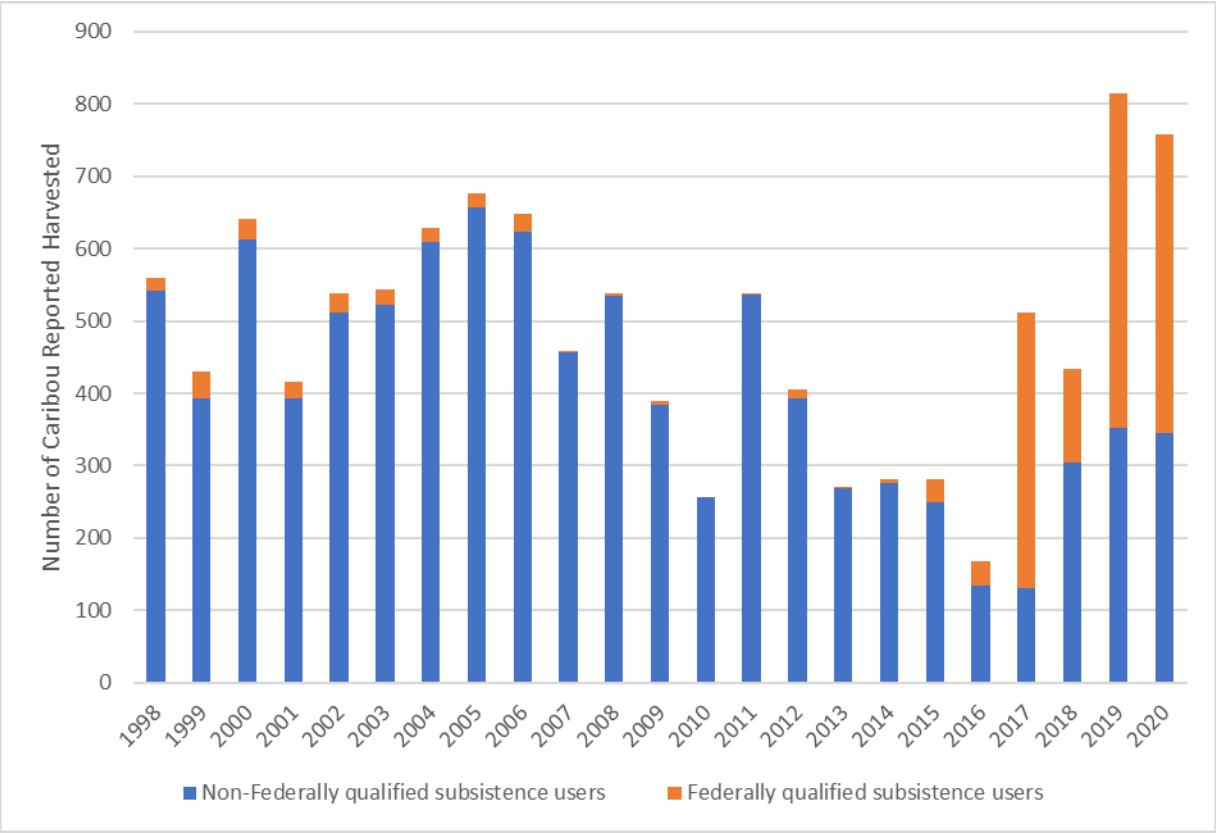

Figure 8. Reported caribou harvest in Unit 23 (WinfoNet 2018, 2019, Hansen 2020, 2021 pers. comm.). Under State regulations, registration permits have been required throughout the range of the WACH since 2017. Since 2018, those hunting caribou under Federal regulations have also been required to have a State registration permit, which has likely contributed to increased reporting by Federally Qualified Subsistence Users.

Transporter and Guide Activity on Federal Public Lands in Units 23 and 26A

Bureau of Land Management

Currently, there are two authorized guides on BLM land in Unit 23. One operates in the upper Kivalina River drainage for caribou and bears and has two to four clients a year. The second guide does not yet operate in Unit 23 but plans to use Guide Use Area 23-07 in the future, for bear hunting only. Transporters are not permitted outside of the Squirrel River area. There are five current transporter permits, but only one has had recent reported use, which was for 2019. This transporter operated in Guide Use Area 23-06 and had 31 clients, resulting in 26 caribou harvested (Million 2021, pers. comm.). (See Guide Use Area map: https://www.commerce.alaska.gov/web/portals/5/pub/GUA_02012010_N1mil.pdf).

In Unit 26A, there are five guiding operations authorized to use BLM lands, but only two have done so in the last three years. One of these operations has four guides, operates each year, and utilizes areas on the west side of the National Petroleum Reserve Alaska along the Colville River. In 2020, they assisted 43 hunters, resulting in the harvest of 35 caribou and six bears. The second operation is a single guide, using primarily the Nigu and Etivuluk Rivers in the southern portion of Unit 26A. In 2019, he assisted two hunters with no resulting harvest (Jones 2021, pers. comm.).

National Park Service

The following section was drafted by the NPS Western Arctic Parklands (Atkinson 2022 pers. comm.). and details National Park Service Commercial Use Authorization statistics from 2009 to 2020 for Cape Krusenstern National Monument (CAKR), Kobuk Valley National Park (KOVA), Noatak National Preserve (NOAT), and Gates of the Arctic (GAAR) with a focus on Noatak National Preserve caribou hunters. **Appendix 1** contains current stipulations for Commercial Use Authorizations in Western Arctic Parklands. This data does not include Concessions Operators except where noted. Commercial Use Authorizations encompass all types of commercial activities (that are not otherwise authorized under a Concessions contract or other exception) ranging from land-based hiking groups, motorboat fishing activities, air-taxis, and big game hunting transporters.

In general, only 3-4 air taxis and big game transporters conduct the bulk of air tours and big game transportation to these park units; not all do both. Other operators listed are usually ancillary to the area and may conduct less than five flights per year or less in parks. It is common for many Commercial Use Authorization holders to maintain a permit in years that they do not operate, often to keep business options open in the case of performing services in these park units should such client requests arise. In 2020, Three Commercial Use Authorization holders were based in the NANA Region, (two in Kotzebue, only one of which was a Big Game Transporter, and one in Ambler). Two Commercial Use Authorization holders were based in Bettles. All others are based elsewhere in Alaska. Almost all big game transportation occurs between August 1st and September 30th.

All data is derived from Commercial Use Authorization and/or Concessions Reports submitted annually, as required, to the NPS from each company conducting business. These reports include Annual Reports (gross income), State of Alaska Big Game Transporter Activity Reports (TARs), Activity Reports (a NPS specific form for all types of commercial activity beyond those related to hunting), and Concessions End of Year Reports.

Commercial Use Authorization holders are required to report flights, dates, number of passengers, activity, aircraft tail number, and landing coordinates, as well as, in the case of transporting big game hunters, the species and estimated pounds of meat transported and names, addresses, and hunting license numbers of each hunter. A review of information submitted (2009-2020) has shown that earlier years have less complete information submitted.

Concessions Operators (Big Game Guides) are additionally required to report location coordinates of camps and kill sites, animal species and sex taken, dates in the field, and names of guides and/or assistant guides with each group of hunters. Concessions Operators are not required to report individual flights if conducted under their concessions' operation, however the NPS believes flights by Guide Services are nominally limited compared to Air Taxi/Tour or Big Game Transporters. Big Game Transporter Commercial Use Authorizations perform all flights for one Guide, and many flights for other Guides; such flights are reported by the Transporters to the NPS.

Number of Hunting Groups Transported

The number of groups of non-Federally qualified hunters transported into NOAT averaged 125 over the period 2009-2015, with the most occurring in 2012 (161). In 2016, when federal lands in Unit 23 were closed to caribou hunting by non-federally qualified users, 11 groups were transported to NOAT. This included caribou hunters into the 26A portion of NOAT in the vicinity of the Nigu River and those who hunted species other than caribou in Unit 23. Since 2017, an average of 87 groups have been transported into NOAT.

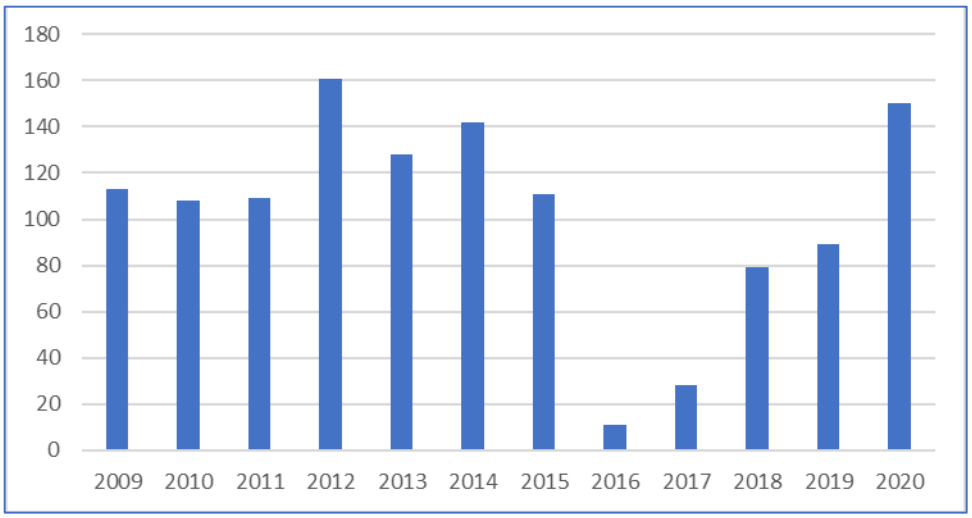

Figure 9. Transported Groups of Hunters, NOAT, 2009-2020 (Atkinson 2022 pers. comm. 2022).

Number of Individual Hunters Transported

An average of 366 non-Federally qualified hunters were transported into NOAT between 2009 and 2015, with the most occurring in 2012 (480). In 2016, 37 hunters were transported into NOAT. This included caribou hunters transported into the 26A portion of NOAT and those who hunted species other than caribou in Unit 23. Between 2017 and 2020, an average of 246 hunters were transported into NOAT.

The number of NFQU hunters gradually increased to the level seen 2009-2015 after 2016. With the exception of 2016 and 2017, the number of groups and hunters exceed those from 1991-2005. While not directly comparable, data from an earlier NPS dataset shows the growth in the number of hunters transported into NOAT that began in the 1990s and peaked in 2005 at 154 hunters. Data for the period 2006-2008 in not available at this time.

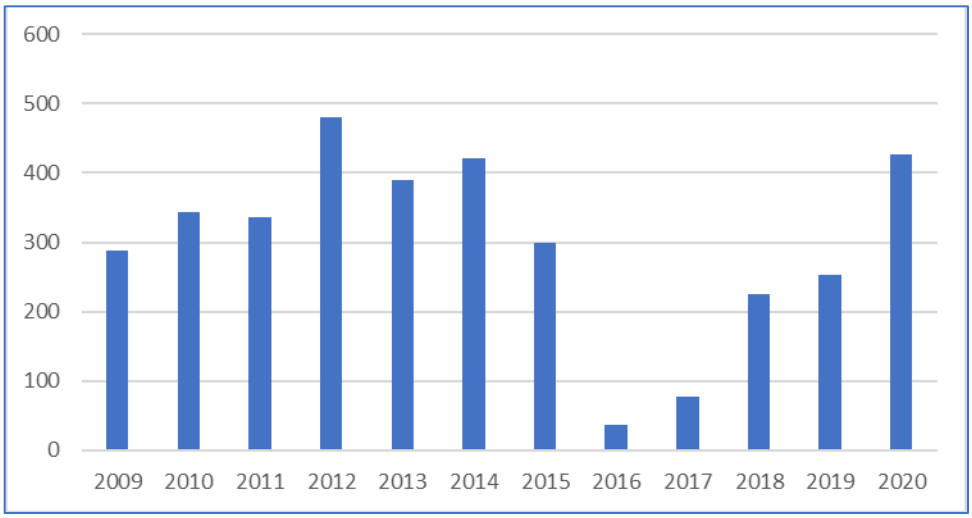

Figure 10. Number of transported hunters, Noatak National Preserve, 2009-2020 (Atkinson 2022, pers. comm.)

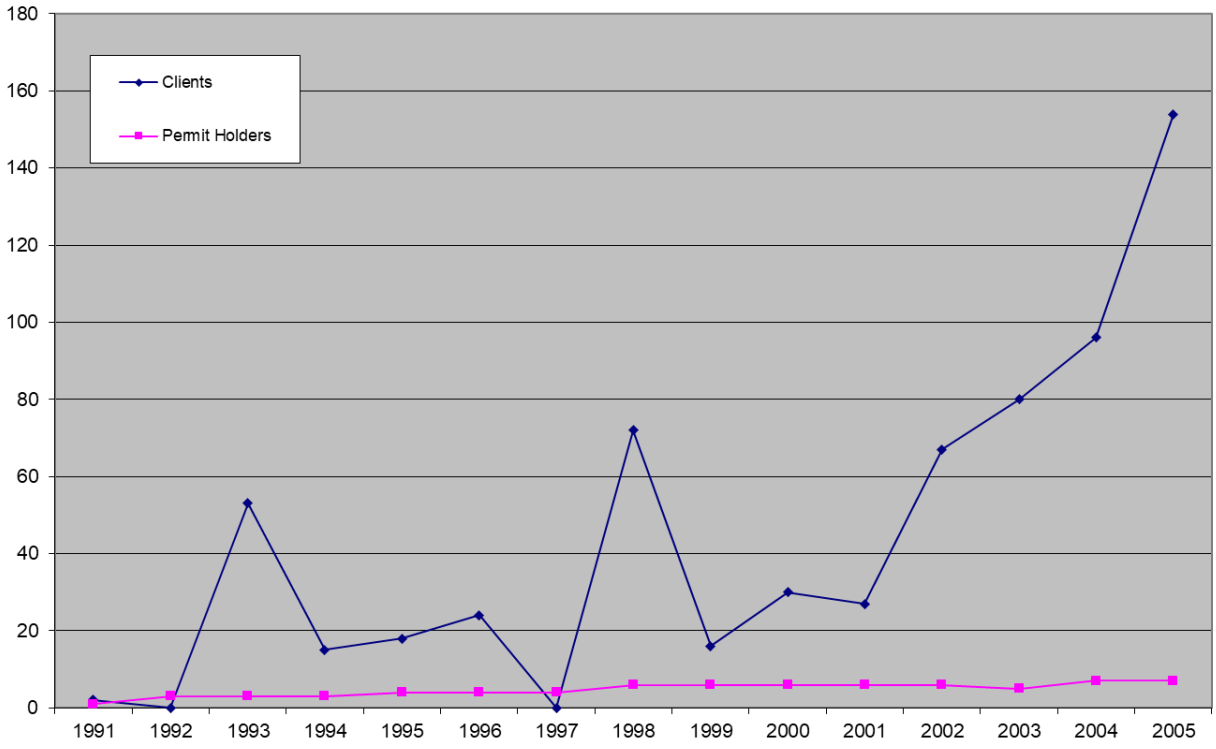

Figure 11. Noatak hunting transporters: number of permit holders and clients. Note: 1991 was the first year NPS used Hunting Transport Permits. The statistics do not include clients of air taxi operators who are not transporters (Atkinson 2022, pers. comm.).

Residency of Transported Hunters

In all years, the majority of transported hunters have been non-Federally qualified users living outside Alaska (non-residents). Information for 2011 is not yet available.

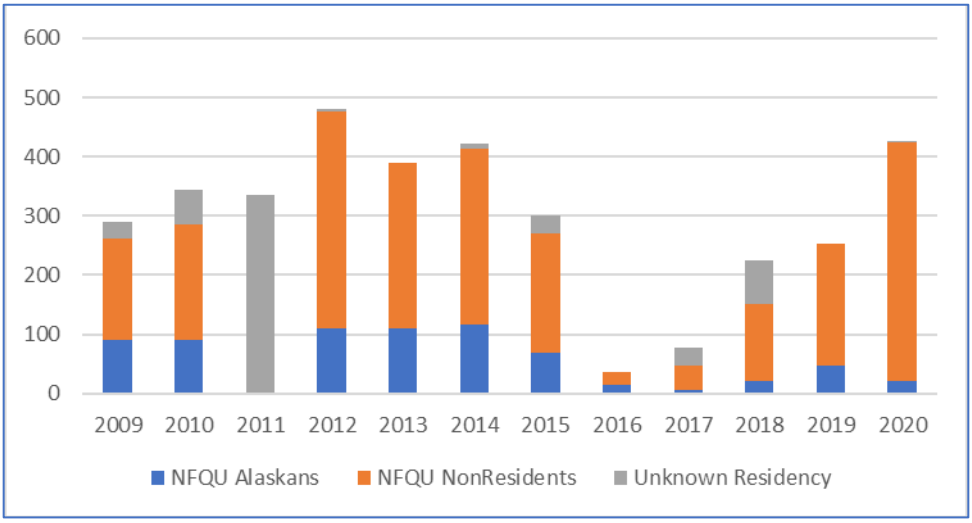

Figure 12. Transported hunters, Noatak National Preserve, by residency 2009-2020 (Atkinson 2022, pers. comm.).

Timing of Transported Hunts

In the period 2009-2015, the majority of transported non-Federally qualified hunters were dropped off in September. After 2016, this pattern appears to have shifted to a more equal distribution between August and September. This shift is not fully understood. The few hunters transported in other months of the year hunted species other than caribou and moose.

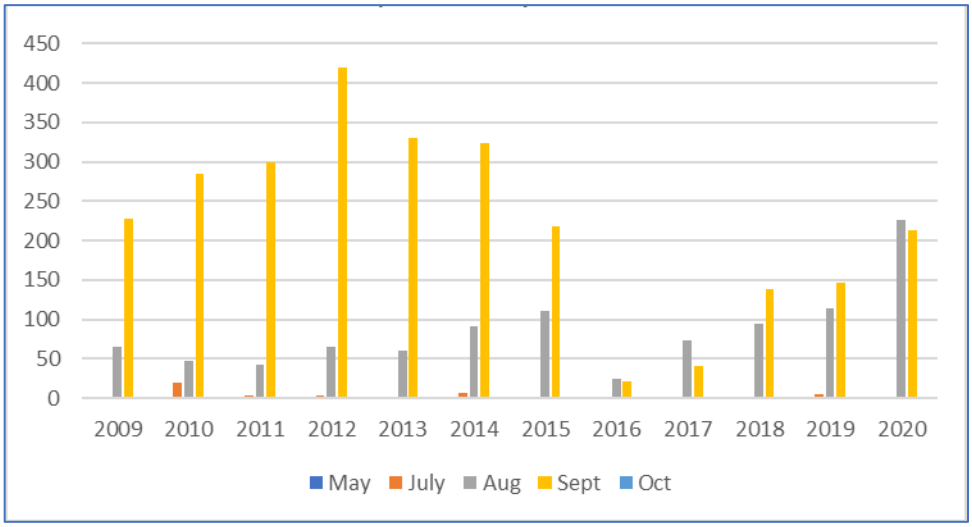

Figure 13. Number of hunters transported, Noatak National Preserve, by month 2009-2020 (Atkinson 2022, pers. comm.).

Additional information on the number of Commercial Use Authorization flights into NPS-managed lands and the estimated number of animals harvested by transported clients in Noatak National Preserve can be found in **Appendix 2**.

U.S. Fish and Wildlife Service

Selawik National Wildlife Refuge occurs to the south of communities expressing greatest concern about changes to the timing and extent of caribou migration. The refuge has an Area Not Authorized for Commercial Transporters and Guides (**Map 4**) and has had very little fly-in hunting in recent years. Since 2017, no caribou harvest has been reported by commercial service providers, including hunting guides, air taxis, or transporters (Georgette 2022, pers. comm.). Nonetheless, **Appendix 1** contains current special conditions attached to Special Use Permits for transporters and air taxis at Selawik NWR, as well as the special conditions for all refuges in Alaska.

Cultural Knowledge and Traditional Practices

The present-day human population in Unit 23 includes 11 regional Iñupiaq nations that were intact in the mid-19th century (Burch 1998). The estimated population of the Northwest Arctic Borough was 7,715 in 2019 (ADLWD 2019). Prior to 1840, the Iñupiat of the North Slope region, including what is now Unit 26A, were loosely organized in six groups or nations of small kin-based settlements (Burch 1980). These nations became less distinct by 1900 but communities still use the territories that preceded modern villages. The estimated population of the North Slope Borough was 9,886 in 2019 (ADLWD 2019).

Caribou have been a primary resource for the Iñupiat of the Northwest Arctic and North Slope regions for thousands of years; caribou bones dating from 8,000 to 10,000 years ago have been excavated from archeological sites on the Kobuk River (Anderson 1968, 1988). Iñupiaq hunting values are based on the traditional worldview that the human animal relationship is reciprocal, and that disrespectful or ungrateful hunter behavior can prevent caribou from returning in subsequent years (Anderson 1998; Spaeder et al. 2003). Concerns about the impacts of non-local hunters who do not follow traditional hunting rules must be understood in this context.

Variability in resource availability is a feature of subsistence economies. Prior to settlement in permanent communities, residents of Northwest Alaska were seasonally nomadic, and adapted to lack of local availability in resources by being mobile, as well as through extensive trading networks (Burch 1984). Communities depended on their Traditional Ecological Knowledge to remember how to draw on alternative resources and survive in difficult times (Minc 1986). Periodic severe shortages in subsistence resources caused larger and more permanent population shifts, such as outmigration from the Northwest Arctic region to the North Slope region in the 1880s (Burch 1984).

During restrictions on caribou harvest beginning in 1976 due to a population crash at that time, residents of the adjacent community of Anaktuvuk Pass adapted to lack of caribou by increasing their participation in the labor market and relying on more store-bought food (Martin 2015). However, this particular adaptation was only made possible by a period of economic growth and development in the region.

Comprehensive research demonstrates that historically, caribou migrations varied in their path and extent more than in their timing. The anthropologist and ethnohistorian Ernest Burch conducted interviews in the Kotzebue Sound region and drew on archived Bureau of Indian Affairs land claims interviews as well as the North Slope Borough's Traditional Land Use inventory to reconstruct the past dynamics of caribou herds in Northwest Alaska between 1850 and 2000. Caribou migration pathways and local availability shifted from year to year. However, in the period studied, the timing of fall migration appears to have been consistent. "The fall migration began in mid-August, when a portion of the herd started to move south toward Kotzebue and Norton Sounds. By mid-September, before some animals even began their fall migration, those in the vanguard had already reached the southernmost portions of the winter range" (Burch 2012: 63).

The objective of the fall hunt has historically been to acquire large quantities of high-quality meat to freeze for winter (Burch 1994). Ideally, caribou harvesting occurs when the weather is cool enough to prevent spoilage of meat, but before freeze-up. Hunters search for caribou and attempt to intercept them at known river crossings, making the Kobuk and Noatak Rivers central to traditional hunt areas. But because of the variable range of the herd, the critical hunting sites changed each year. Noatak National Preserve was not only the hunting grounds of the people of the Noatak, it was also an alternative hunting site for people living on the Kobuk River, Selawik, and Kotzebue Sound" (Deur et al. 2019). At river crossings, caribou can be selectively harvested with small caliber rifles. Caribou can be harvested in large numbers, when available, and transported back to villages by boat before freeze-up.

Fall is the preferred season for harvest by residents of Unit 23 communities. Prior to freeze-up, bulls have traditionally been preferred because they are fatter than cows (Georgette and Loon 1993). After freeze-up, cows are preferred, because bulls are typically skinnier and in rut by then; the meat smells bad and is of poor quality (Braem et al. 2015). For this reason, delayed migrations may result in a shift towards harvesting cows, as communities miss the opportunity to harvest fat bulls prior to freeze- up. Small groups of caribou that have over-wintered may be harvested by hunters in areas that are accessible by snowmachine.

Caribou continue to dominate subsistence harvest in most communities in the Northwest Arctic (Braem et al. 2015, 2017). In household harvest surveys conducted between 1964 and 2017, caribou were often the most harvested species, more than any other wild resource, in pounds of edible weight. Based on these surveys, the per person harvest of caribou has been as high as 430 pounds per year in communities in Unit 23 (ADF&G 2021; **Table 7**).

Table 7 highlights variability in the estimated number of caribou harvested annually, based on subsistence surveys, by each community with a customary and traditional use determination for caribou in Unit 23. Over time, estimated annual harvest tends to correspond with local availability. The average estimated annual pounds per person caribou harvested across survey years ranges from a high of 266 pounds in Deering and 255.3 pounds in Ambler to a low of 50.5 pounds in Point Hope (**Table 7**).

Table 7. Two measures of caribou harvest between 1982 and 2018 in communities with a customary and traditional use determination for caribou in Unit 23. Data is from the ADF&G Division of Subsistence Community Subsistence Information System (ADF&G 2021) with the following exceptions. Kotzebue data for 2002-2004 is from Whiting 2006; Noatak and Deering data for 2011 is from Mikow et al. 2014; 2018 data for Buckland is

from Mikow and Cunningham 2020; Point Hope data for 2000-2001 is from Bacon et al. 2009, rev. 2011. Dashes indicate that no data is available.

Community	Year	Estimated Number of Caribou Harvested	Estimated Pounds of Caribou per Person
Kotzebue	2014	1,286	59
	2013	1,680	75
	2012	1,803	78
	2004	1,915	--
	2003	1,719	--
	2002	2,376	--
	1986	1,917	97
	Avg	**1,814**	**77**
Selawik	2011	683	109
	2006	934	165
	1999	1,289	249
	Avg	**987**	**174.3**
Kivalina	2010	86	32
	2007	268	85
	1992	351	138
	1983	564	283.9
	1982	346	179
	Avg	**323**	**144**
Noatak	2016	337	80
	2011	360	89.8
	2007	441	114
	2002	410	120
	1999	683	224
	1994	615	220
	Avg	**474**	**141.3**
Point Hope	2014	185	34
	2000-2001	219	--
	1994	355	67
	Avg	**253**	**50.5**
Lower Kobuk River			
Noorvik	2017	250	65
	2012	851	198
	2008	767	173
	2002	988	181
	Avg	**714**	**154.3**
Kiana	2009	440	149
	2006	306	108.5
	1999	488	174

Community	Year	Estimated Number of Caribou Harvested	Estimated Pounds of Caribou per Person
	Avg	**411**	**143.8**
Upper Kobuk River			
Ambler	2012	685	330
	2009	456	260
	2003	325	176
	Avg	**489**	**255.3**
Shungnak	2012	396	196
	2008	416	218
	2002	403	220
	1998	561	312
	Avg	**444**	**236.5**
Kobuk	2012	119	98
	2009	210	194
	2004	134	148
	Avg	**154**	**146.7**
Northern Seward Peninsula			
Buckland	2018	950	220
	2016	637	179
	2009	561	176
	2003	637	212
	Avg	**696**	**196.8**
Deering	2017	342	342
	2013	294	430
	2011-2012	237	205.9
	2007	182	161
	1994	142	131
	Avg	**240**	**254**

Tables 8 and **10** compare percentages of surveyed households attempting to harvest caribou versus those succeeding in harvesting caribou, according to subsistence surveys. **Table 8** shows this data for communities with a customary and traditional use determination in Unit 23, and **Table 11** shows the same for Unit 26A. In practice, attempted harvest depends on the presence of caribou in traditional harvest areas. It is worth noting that the percentage of households attempting to harvest caribou in any year may adjust to perceived abundance or availability, so the percentage attempting cannot be taken as a simple proxy of interest or need. However, the disparity between the percentage attempting to harvest and those harvesting can give us some limited information about whether caribou are available. However, the percent harvesting includes those who harvested even one caribou, so this measure gives us little indication of whether people are getting as many caribou as they need.

Table 8. Percent of surveyed households attempting to harvest and successfully harvesting caribou between 1986 and 2018. Communities with a customary and traditional use determination for caribou in Unit 23 are included in this table. Data is from the ADF&G Division of Subsistence Community Subsistence Information System (ADF&G 2021) with the following exceptions. Noatak and Deering data for 2011 is from Mikow et al. 2014; 2018 data for Buckland is from Mikow and Cunningham 2020. Dashes indicate that no data is available.

Community	Year	Percent of Surveyed Households Attempting to Harvest Caribou	Percent of Surveyed Households Attempting to Harvest Caribou but Unsuccessful	Percent of Surveyed Households Harvesting Caribou
Kotzebue	2014	39%	10%	29%
	2013	43%	9%	34%
	2012	44%	5%	39%
	1986	50%	5%	45%
Selawik	2011	70%	16%	54%
	2006	65%	2%	63%
	1999	61%	0%	61%
Kivalina	2010	66%	37%	29%
	2007	64%	0%	64%
	1992	77%	3%	74%
Noatak	2016	70%	19%	51%
	2011	62%	12%	50%
	2007	73%	7%	66%
	2002	76%	5%	71%
	1999	74%	2%	72%
	1994	84%	0%	84%
Point Hope	2014	53%	23%	30%
Lower Kobuk River Communities				
Noorvik	2017	59%	19%	40%
	2012	60%	0%	60%
	2008	70%	0%	70%
	2002	72%	1%	71%
Kiana	2009	83%	3%	80%
	2006	62%	5%	57%
	1999	68%	3%	65%
Upper Kobuk River Communities				
Ambler	2012	70%	8%	62%
	2009	76%	2%	74%
	2003	74%	4%	70%
Shungnak	2012	52%	4%	48%
	2008	73%	5%	68%
	1998	74%	2%	72%

Community	Year	Percent of Surveyed Households Attempting to Harvest Caribou	Percent of Surveyed Households Attempting to Harvest Caribou but Unsuccessful	Percent of Surveyed Households Harvesting Caribou
Kobuk	2012	66%	9%	57%
	2009	86%	4%	82%
	2004	82%	21%	61%
Northern Seward Peninsula				
Buckland	2018	68%	3%	65%
	2016	86%	3%	83%
	2003	61%	3%	58%
Deering	2017	63%	6%	57%
	2013	44%	6%	38%
	2011	63%	0%	63%
	2007	55%	10%	45%
	1994	57%	3%	54%

Harvest data from comprehensive household surveys are not sufficiently up to date to provide accurate information on the full impact of delayed caribou migration for subsistence harvest; new comprehensive subsistence surveys and key informant interviews are needed. Currently, ADF&G Division of Subsistence is conducting surveys of caribou harvest in Selawik, Shungnak, Noatak, Deering, and Kobuk. This research is scheduled to be completed in 2024 (Cold 2021).

Just as they are with residents of Northwest Arctic communities, caribou are an important resource to those in North Slope communities. In coastal North Slope communities, caribou have been second only to marine mammals in their importance as a subsistence resource, measured in harvest by usable weight during survey years (e.g., Brown et al. 2016). In the inland North Slope communities of Atqasuk and Anaktuvuk Pass, caribou have been the most important resource, measured in harvest by usable weight during survey years (e.g., Bacon et al. 2009, rev. 2011; Holen et al. 2012). Harvest by North Slope communities—especially those in the Western portion of Unit 26A, includes harvest from the Teshekpuk herd.

Table 9 highlights variability in the estimated number of caribou harvested annually by each community with a customary and traditional use determination for caribou in Unit 26A. The average estimated annual pounds of caribou harvested per person across survey years ranges from a high of 212 pounds in Anaktuvuk Pass to a low of 64 pounds in Utqiagvik (**Table 9**).

Table 9. Two measures of caribou harvest between 1985 and 2014**.** Communities with a customary and traditional use determination for caribou in Unit 26A are included in this table (excluding Kaktovik; Point Hope is included in **Table 15**). Data is from the ADF&G Division of Subsistence Community Subsistence Information System (ADF&G 2021). Dashes indicate that no data is available.

Community	Year	Estimated Number of Caribou Harvested	Estimated Pounds of Caribou per Person
Point Lay	2012	356	186
	2002	154	85.5
	1994	223	171
	1987	157	152.8
	Avg	**223**	**148.8**
Wainwright	2009	1,231	283.7
	2002	866	221.3
	1989	711	177.8
	1988	505	117
	Avg	**828**	**200**
Atqasuk	2006	170	--
	2005	203	--
	2004	314	--
	2003	189	--
	1997	266	152
	1996	398	240.8
	1994	282	166.7
	Avg	**260**	**186.5**
Utqiagvik	2003	2,092	63.9
	2001	1,820	55.6
	2000	3,359	99.7
	1996	1,158	37
	1995	2,155	70.1
	1989	1,656	64.2
	1988	1,533	59.5
	1987	1,595	61.9
	Avg	**1,921**	**64**
Nuiqsut	2014	774	253.3
	2006	363	--
	2005	436	--
	2004	429	--
	2003	293	--
	2000	496	155.7
	1995	362	119.8
	1994	258	85
	1993	672	228
	1985	513	150
	Avg	**460**	**165.3**

Community	Year	Estimated Number of Caribou Harvested	Estimated Pounds of Caribou per Person
Anaktuvuk Pass	2014	770	330
	2011	616	251
	2002	436	193
	2001	271	122
	2000	732	353
	1999	329	143
	1998	500	220
	1996	210	93
	1994	322	153
	1993	574	219
	1991	545	245
	1990	592	223
	Avg	**491**	**212**

Table 10. Percent of surveyed households attempting to harvest and successfully harvesting caribou between 1985 and 2014. Communities with a customary and traditional use determination for caribou in Unit 26A are included in this table (excluding Kaktovik; Point Hope is included in **Table 16**). Data is from the ADF&G Division of Subsistence Community Subsistence Information System (ADF&G 2021). Dashes indicate that no data is available.

Community	Year	Percent of Surveyed Households Attempting to Harvest Caribou	Percent of Surveyed Households Attempting to Harvest Caribou but Unsuccessful	Percent of Surveyed Households Harvesting Caribou
Point Lay	2012	64%	4%	60%
	1987	72%	0%	72%
Wainwright	2009	64%	3%	61%
	1989	--	--	66%
	1988	--	--	57%
Atqasuk	2006	67%	7%	60%
	2005	70%	11%	59%
	2004	79%	0%	79%
	2003	66%	5%	61%
Utqiagvik	1989	--	--	39%
	1988	--	--	27%
	1987	--	--	26%
Nuiqsut	2014	66%	2%	64%
	2006	60%	0%	60%
	2005	62%	1%	61%
	2004	74%	4%	70%
	2003	48%	2%	46%
	1985	90%	0%	90%
Anaktuvuk Pass	2014	45%	5%	40%
	2011	63%	10%	53%
	1993	--	--	43%
	1991	--	--	51%
	1990	--	--	55%

User Conflict and Delayed Caribou Migration

While residents of Unit 23 rely on caribou for the majority of their subsistence harvest, non-locals are attracted to the region because of its extensive public lands and abundant wildlife. Previous discussions regarding the impacts of non-local users on the continuation of subsistence hunting for caribou in the Northwest Arctic and North Slope regions have considered the issue in the context of user conflict, defined

as “persons competing for consumptive or non-consumptive uses of a finite resource” (Braem et al. 2015). User conflicts between local and nonlocal hunters have been well documented in the Noatak National Preserve, the Squirrel River area, and along the upper Kobuk River (Georgette and Loon 1988, Jacobson 2008, Harrington and Fix 2009 *in* Fix and Ackerman 2015, Halas 2015, NWARAC 2015a, Braem et al. 2015), even during times of high caribou abundance. Braem at el. note that “The roots of [this] conflict are varied, but they involve displacement of local hunters from traditional hunting sites, hunt disruption (largely by aircraft traffic), and differences in hunting practices and culture” (2015:177).

Since 2017, a targeted closure to non-Federally qualified users (Unit 23, within a 10-mile-wide corridor (5 miles either side) along the Noatak River from the western boundary of Noatak National Preserve upstream to the confluence with the Cutler River; within the northern and southern boundaries of the Eli and Agashashok River drainages, respectively; and within the Squirrel River drainage) has addressed some of these areas of localized high conflict. While there have been individual reports of user conflict throughout the range of the herd, other public lands such as Bering Land Bridge National Preserve, Selawik NWR, and Gates of the Arctic National Park and Preserve do not have the same record of local testimony regarding user conflict related to caribou hunting.

The local practice of letting the first caribou go by, or not harvesting the leaders, is one of the most widely held and commonly repeated traditional “laws” to this day. For example, in *Uqausriptigun: In our own words*, a Selawik Refuge publication based on 2003 interviews, elder Ralph Ramoth Sr. states “You must let the first caribou go by. Let the first bunch go by and the rest of them will follow…For example, if the caribou start coming down those hills right there, and if I go out and hunt them right now, I could re-route them away” (Selawik Elders 2007). Similar traditional rules are also practiced by other circumpolar caribou people (e.g., Wray and Parlee 2013). The widely held opinion that this traditional law is being broken by non-local hunters, and the attribution of the delayed migration to this cause, is key to this closure request.

The current Noatak corridor closure addresses direct user conflict and concerns about caribou deflection in a limited traditional harvest area; local complaints that the presence of non-local activity may be contributing to delay, diversion, or cessation of the herd’s migration over a larger portion of their migration range represents a shift in the scale of these concerns.

Concerns over delayed caribou migration—and the potential role of non-local hunting activities in diverting and delaying migration on local and larger scales—is well documented through repeated Regional Advisory Council testimony and sharing of local and traditional knowledge (e.g. NWARAC 2015a, 2015b, 2016a, 2015b, 2017a, 2017b, 2018a, 2018b, 2019a, 2019b, 2020a, 2021a, 2021b). Local hunters have expressed concerns over aircraft and nonlocal hunters disrupting caribou migration by scaring caribou away from river crossings, landing and camping along migration routes, and shooting lead caribou (Halas 2015, Fix and Ackerman 2015, NWARAC 2015a). During key informant interviews conducted by ADF&G Division of Subsistence in Noorvik between 2012 and 2014:

> “Several residents expressed concern for specific human actions that could result in changes to caribou migratory patterns: patterns which largely determine if caribou will be accessible or not to Noorvik hunters in any given year. Specific examples included hunters harvesting the first caribou to migrate (which are widely perceived as leading the entire migrating herd, usually in fairly predictable patterns when not disturbed), inexperienced hunters harvesting caribou at river

> crossings "just when they get in the water, instead of waiting until they are mid-stream" and thereby pushing the caribou herd back on land, and sport hunters or biologists disturbing caribou herds with airplane traffic" (Braem at al. 2017:142).

Some studies and local observations of WACH caribou response to aircraft have suggested that animal response is limited in temporal and spatial scale (Fullman et al. 2017) and that many complex factors contribute to larger scale shifts in migration. Dau (2015) noted that substantial transporter traffic in the Anisak drainage, which is within the Noatak National Preserve, has not diverted migrating WACH caribou. Fullman et al. (2017) studied the effects of environmental features and sport hunting on caribou migration in northwestern Alaska. These authors found that caribou tended to avoid rugged terrain and that the migration of caribou through Noatak NP does not appear to be hindered by sport hunting activity. They indicated that their results do not preclude the possibility of short-term effects (< 8 hours) altering the availability of caribou for individual hunters, and that the lack of observed influence of hunting activity could be related to limitations in the telemetry and sport hunter datasets used in the study (i.e., caribou locations were only recorded every 8 hours, not every sport hunter camp was included, and only landings events from transporter aircraft were considered). However, the issue of *cumulative* effects of air traffic, not only on caribou migration but also on subsistence hunter behavior (i.e., avoidance of high traffic areas) has not yet received adequate attention in the literature (Stinchcomb et al. 2019).

User conflict on the North Slope has centered primarily on the caribou migration patterns in the vicinity of Anaktuvuk Pass. A long-held cultural practice in the region requires that lead adult female caribou be allowed to establish migratory paths unhindered by human activity. (Of note, non-Federally qualified users primarily harvest bulls in Units 23 and 26A, with non-Alaska residents limited to bulls only). Dau (2015) suggests that once lead caribou establish migration routes, the caribou behind them will follow regardless of hunting or other disturbances such as aircraft. In response to complaints from Anaktuvuk Pass residents about caribou migration being affected by nonsubsistence hunter activity, ADF&G attempted to document such effects from 1991-93, but none were found (OSM 1995). However, residents of Anaktuvuk Pass stated that the closure of Federal public lands to non-Federally qualified users for caribou hunting in Unit 23 during the 2016/17 regulatory year was perceived as having improved the situation, allowing for the resumption of historical migration patterns and harvest activities (OSM 2017a, 2017b).

Whether caused by climate change, caribou population decline, transporters and non-local hunters, development, or a combination of these factors, delays in caribou migration are known to have created difficulty for virtually all communities in Unit 23 (Dau 2015, Braem et al. 2015, NWARAC 2020, 2021). Local WACH harvest has been relatively stable in Unit 23 since the 1990s, but residents of some communities have had to "greatly increase their expenditure of money and effort to maintain these harvest levels" (Dau 2015:14-30). This is due in part to having to travel farther, more frequently, and for longer durations to find caribou (Halas 2015; Gonzalez et al. 2018). In addition, regardless of specific timing, variability from year to year places additional uncertainty and stress on communities regarding their food supply, as has occurred in Shungnak on the upper Kobuk River (Braem et al. 2015).

According to a review of grey literature on aircraft-subsistence user conflict, "Specific reports or observations about aircraft activity harassing wildlife, changing caribou (*Rangifer tarandus*) migration

routes, and frustrating harvesters have been increasing [in the Alaskan Arctic] since the early 2000s" (Stinchcomb et al. 2019:132).

Halas (2015) and Stinchcomb et al. (2019) note that even when the question of whether or not migration patterns are affected by aircraft in the long term is put aside, aircraft activity can lead to *changes in harvesting behavior*. Subsistence hunters avoid areas with air traffic; this displacement in turn prevents continued use of traditional areas and can even accelerate loss of place-based traditional knowledge. The authors also found that avoidance of high air-traffic areas results in longer trips and higher fuel costs for harvesters (Stinchcomb et al. 2019), consistent with testimony from the Northwest Arctic Council (e.g. NWARAC 2020, 2021a, 2021b).

Concerns about the impact of non-local hunters on the continuation of subsistence uses led to a unit-wide closure in 2016 and a targeted closure of Federal public lands along the Noatak River, within the northern and southern boundaries of the Eli and Agashashok River drainages, respectively, and within the Squirrel River drainage to non-Federally qualified users beginning in 2017 (targeted Noatak closure). According to interviews conducted by ADF&G Division of Subsistence in Noatak following the closures, "Some residents…felt that the closure of Federal lands to non-Federally-qualified users in Unit 23 helped hunters from the community harvest caribou. Others commented that the herd was a great distance from the community and the expenses to reach it limited attempts to harvest" (Gonzalez et al. 2018:19). Key informant interviews have not been conducted in Noatak since 2016, so additional information about the effects of the partial closure must be gleaned from transcripts of Northwest Arctic Council meetings.

Following implementation of the Noatak targeted closure, first as a temporary special action (WSA17-03) and then in permanent regulation (WP18-46), members of the Northwest Arctic Council have given feedback on its effects at their meetings. For example, in 2018, the Council member from Noatak stated: "This proposal helped Noatak get our caribou and decreased a lot of conflict on the Noatak River. We've been able to get our quota of caribou that we didn't get for a while and it really did make a difference for our subsistence for the people of Noatak." He continued:

> "Some [residents] say…they got—just like a long time ago, peace and quiet, we can take our kids now, we don't have to worry about someone shooting over our heads. That's been happening when there's too [many] sport hunters on the river, they were shooting from behind us and from over our heads and while we're in the water and that was getting dangerous. So this closure pretty much helped Noatak big time" (NWARAC 2018a).

Additional testimony reflecting the success of the closure for Noatak has been given by Council members every year since the closure was implemented (NWARAC 2019a, 2020a, 2021a, 2021b).

Current Events and Outreach

When the Board deferred WSA21-01 in June 2021, they requested that OSM staff seek additional input on concerns related to caribou from multiple groups, including the WACH Working Group, Federal land-managing agencies, local Fish and Game Advisory Committees, ADF&G, Councils, commercial guides and transporters, and subsistence users in the area. Due to the COVID-19 pandemic, all outreach was conducted by teleconference and written correspondence.

The results of this outreach are summarized here. For groups that represent local subsistence users (Councils, Subsistence Resource Commissions, and the WACH Working Group), their position as an entity are noted, but the words of their individual members are also considered under the categories "local subsistence users" and "transporters and guides."

Regional Advisory Councils

There are four Councils representing communities with a customary and traditional use determination for caribou in the proposed closure areas: Northwest Arctic, North Slope, Seward Peninsula, and Western Interior. During the fall (October and November) 2021 Council meetings, OSM held guided discussions with all four affected Regional Advisory Councils to seek feedback on the proposed closure and concerns related to caribou.

At their fall 2021 meeting, the Northwest Arctic Council reiterated their reasons for submitting WSA21-01, emphasizing the hardships caused by their inability to meet their subsistence needs for caribou, which occurred again in 2021. Details of this discussion, and that of Council members from the other three Councils are woven into the section on local subsistence users, below.

At their fall 2021 meeting, the Chair of the North Slope Council reiterated his Council's support for the closure request. If implemented, "Federally qualified users are going to be less impacted by multi[ple] variables…and maybe reset…the normalcy of caribou movements" (NSRAC 2021). The North Slope Council Chair also indicated his concern that greater deference should be given to Councils on this issue.

At their fall 2021 meeting, the Chair of the Seward Peninsula Council reiterated that his Council has supported similar efforts in Unit 23 in the past. The Western Interior Council stated its intent to defer all discussion on this item to the home regions.

The Councils will have the opportunity to formally vote on the updated analysis for WSA21-01 at their February and March 2022 meetings.

Subsistence Resource Commissions

Subsistence Resource Commissions (SRCs) are composed of nine local members with histories of subsistence use of national parks and monuments. They provide local knowledge and advice on proposed regulatory and policy changes affecting NPS-administered lands in Alaska.

On November 3 and 4, 2021 OSM staff held guided discussions at meetings of the Cape Krusenstern National Monument and Kobuk Valley National Park SRCs to seek feedback on the proposed closure and concerns related to caribou. OSM staff did not hold a guided discussion with Gates of the Arctic SRC, as most members live in communities outside the range of the WACH. However, a staff member spoke individually with the Gates of the Arctic SRC member representing Shungnak. Discussions with SRC members related to caribou and WSA21-01 are woven into the section on local subsistence users, below.

Western Arctic Caribou Herd Working Group: Comments from Local Residents

Following Board deferral of decision-making on WSA21-01, OSM sought comments on the proposed closure and concerns related to caribou from members of the WACH Working Group. The group's Executive Committee asked that OSM staff speak directly to members. Staff spoke with 11 local residents of the region and 5 non-local residents (transporters, guides, non-local hunters, and conservationists). Discussions with local members related to caribou and WSA21-01 are included in the section on local subsistence users, below, and discussions with other members are presented in the section on "transporters and guides." A discussion of the group's position as a whole on WSA21-01 is included later in this analysis.

Public Hearings and Written Comments

Written public comments were accepted between April 16 and April 20, 2021, and 1,221 written comments were submitted. OSM first held a public hearing to solicit comments on WSA21-01 on April 23, 2021 by teleconference. Over 300 people called in, and approximately 120 people gave comments, most in opposition to the requested closure.

Following Board deferral of decision-making on WSA21-01, OSM held two additional public hearings to seek input on the proposed closure and concerns related to caribou on November 17 and December 2, 2021. On November 17, 64 people gave comments. On December 2, 41 people gave comments. While details of commentary given by local residents are presented in the next section, comments by other individuals, such as guides, transporters, non-local hunters, and concerned citizens are presented in subsequent sections.

Local Subsistence Users/Federally Qualified Subsistence Users

Feedback from local subsistence users is organized by topic, with the commenter's community of residence and membership in groups such as the Councils, SRCs, and WACH Working Group noted, where applicable.

Recent Caribou Availability

During their November 1-2, 2021 meeting, Northwest Arctic Council members reported that caribou again arrived very late in the region in 2021. Noatak residents were successful in getting some caribou (a targeted closure is currently in place for Noatak).

There were few caribou available locally around Kotzebue, and none around Noorvik. The Council Chair (Kotzebue) and the Council member from Noorvik explained that people in their communities are having to go further and further inland or up rivers to hunt caribou and are not always successful. People from Kotzebue and Noorvik are going to Onion Portage and the Squirrel River area to harvest. In 2021, several boats from Noorvik went to Onion Portage and stayed until freeze-up but had to return without caribou. During the December 2, 2021 public hearing, two residents of Kotzebue said that they had spent weeks hunting for caribou and had only gotten a couple for each very large extended family.

The Council member representing Kiana said that her community was able to hunt caribou in 2021, but only very late; caribou started to cross the Kobuk River near Kiana and then freeze-up set in the next day. A

resident of Kiana who called into the December 2 public hearing said that there has been a marked local increase in sport hunting activity in the last several years, while caribou numbers seem to be down.

During Tribal comments at the November 1-2 Northwest Arctic Council meeting, the Tribal administrator for Selawik reported not being able to put caribou in her freezer the last couple years. Additional residents of Selawik called into the December 2 public hearing. One said that in 2021, he only had two caribou for an extended family of 30. Another said that caribou used to come through his area in early to mid-August, but this has not happened the last three to four years.

At the November 4, 2021 Kobuk Valley National Park SRC meeting, the member representing Shungnak reported that her community did not get caribou until November 3 in 2021. When caribou initially came to the Shungnak area, they could not cross the Kobuk River due to ice. Caribou were not crossing by Onion Portage like they used to; it was reported that they may have been blocked by predators below Ambler. At the same meeting, the member representing Ambler said that the normal time for caribou to show up in the Upper Kobuk was mid to late August. He believes that if they do not show up at this time, their migration is being deterred.

Multiple residents of Buckland, including the president of the Native Village of Buckland, called into public hearings and described their recent difficulty getting caribou. Local caribou abundance has gone down. During the November 17, 2021 public hearing, three residents from Buckland said that caribou had not yet arrived in their area, when historically they arrived by mid-September. During the December 2 hearing, a resident of Buckland said that caribou have been turning around before they near Buckland. A Deering resident called into the November 17 public hearing and said that she had not seen any caribou as of that date; she got only one caribou last year.

At their November 3-4, 2021 meeting, the North Slope Council member from Point Hope said that 2021 was a good year for caribou. Although the caribou were slightly late in moving south, they were abundant and close to the community for much of the year. The Council member from Atqasuk said that the caribou her community would usually see in July were not around, but small scattered herds started to appear in the middle and end of July, and especially in August. A large herd arrived in the area in September. Because of the lack of availability earlier in the season, people from Atqasuk had to travel further to harvest caribou during that time. The member from Atqasuk noted that groceries had become very expensive in her community.

The Council Chair, representing Utqiagvik, reported that his community had a successful year of harvesting caribou close to town, and the caribou that were caught were in good condition. People upriver (presumably in the Atqasuk area) did well harvesting caribou through August and September. The caribou started heading southeast around the first or second week of September. The Council member from Anaktuvuk Pass reported that his community met their subsistence needs for caribou in 2021. The Council member from Kaktovik said that his community had been successful in catching caribou, and no sick animals had been harvested.

The Council member from Nuiqsut expressed some concerns about caribou the past year. Although there were a lot of caribou around, there were less than the previous year, and they were scattered and seemed to be avoiding industrial roads on the NPRA. “Their migration was diverted due to the heavy traffic of

vehicles, heavy equipment going to the west side, like Fish Creek area, so they had turned toward the south side" (NSRAC 2021). People in Nuiqsut caught a couple of sick caribou that had to be disposed of.

At their October 26-27 2021 meeting, members of the Seward Peninsula Regional Advisory Council also reported having to travel unusually far for caribou, although they noted that the distance one must go for caribou tends to vary over the years. A Council member from Unalakleet said that last winter people in the region went as far as Selawik looking for caribou and got just one or two.

In terms of local success with harvesting caribou, most WACH Working Group members who are local residents in Units 22 and 23 reported reduced success, and longer travel distances in recent years. An exception was the member from Noatak who has been positively affected by the Noatak corridor closure currently in place.

Position on Closure

Almost all local residents of subsistence-based communities who weighed in on the requested closure were in support. Most residents of Units 23 and 26A who participated in public comment opportunities expressed their support for the requested closure, for reasons that overlap with those described in the section of this analysis on Tribal and Alaska Native Claims Settlement Act (ANCSA) corporation consultation. Caribou were noted as being vital to the physical, spiritual, and mental well-being of people in the Northwest Arctic region, including the younger generations. Local residents testified that non-locals do not follow the traditional practice of "letting the leader caribou pass," which can result in herd diversion and a small number of hunters having a disproportionate impact on subsistence for entire communities. Speakers expressed frustration about having to fight for basic access to their traditional foods. Local subsistence users also emphasized the extremely high costs of fuel and food in rural Alaska communities, and the parallel crisis of the COVID-19 pandemic and a resulting increase in food insecurity.

Here, select comments are noted. In Unit 23, in addition to the Northwest Arctic Council, which submitted the request, additional individuals weighed in their support. The president of the Noatak Native Village Council, who is also a member of the WACH Working Group testified in support during the April 23 public hearing. He stated that villages do not need the additional stress of food security amid a pandemic, and his community has witnessed the effect of non-local hunters scaring the caribou first-hand.

During the Kobuk Valley SRC meeting on November 4, the member from Ambler expressed full support for the requested closure, due in part to the need to be in solidarity with fellow Iñupiat in adjacent regions. During the November 3, 2021 Cape Krusenstern SRC meeting, a member from Kotzebue and a member from Kivalina explicitly expressed their support for the requested closure, citing the success of the Noatak closure, and proposing that a similar closure would be effective for other communities. An additional SRC member from Kotzebue expressed his support for these comments.

At the November 17 public hearing, three residents from Buckland and a resident from Deering called in support of WSA21-01. At the December 2 public hearing, two residents of Selawik, four residents of Kotzebue, and four residents of Kiana called in support of the closure. One caller from Kiana noted that the closure could stay in place until the situation stabilizes and would help allay the impacts of COVID-19 on communities.

There was an exception to support given from residents of Unit 23: One resident of Ambler testified in opposition to the requested closure at the April 23, 2021 public hearing, expressing concern that hunters would be concentrated on State lands around his community, and that his nonrural relatives would not be able to hunt in the region. He expressed skepticism that air traffic could divert caribou on a large scale and asked that the views of all communities in the region to be considered in the decision-making.

In Unit 22, the Chair of the Seward Peninsula Council emphasized that his Council has been supportive of Unit 23 proposals related to caribou in the last few years. For Unit 26, the Chair of the North Slope Council called into the April 23 public hearing and expressed his support for the proposal to allow for an uninterrupted peak subsistence period for the communities that depend on caribou and moose; resources can be had by non-local hunters at any other time. He stated that deflection prevents reasonable subsistence access even in times of plenty. The North Slope Council also formally supported the closure request at their winter 2021 meeting. During the April 23 public hearing, the Wildlife Specialist for Point Hope, as well as the North Slope Council representative from Point Hope both testified in support.

At the April 23 public hearing, the Director of the North Slope Borough Department of Wildlife Management, from Utqiagvik, expressed her support for the request. In recent years, she has heard increasing concerns about interactions between non-local hunters in the communities of Point Hope, Point Lay, Wainwright, Atqasuk and Anaktuvuk Pass. This Special Action would allow people to practice their traditional hunting method of letting the leader pass. She encouraged traditional knowledge to be used in decision-making.

At both the November 17 and December 2 public hearing, many Federally qualified subsistence users from outside the region affected by the closure request called in their support of the request, emphasizing the deep traditions held by Alaska Native people, and the value and longevity of their traditional knowledge.

Five of the eleven WACH Working Group members that OSM staff spoke with representing communities in Units 23, 26, and 22 explicitly supported the closure (residents of Kotzebue, Noatak, Point Hope, Atqasuk, and Elim), and two others were undecided (Koyuk and Nulato). One person did not comment explicitly but their other comment suggested support (Brevig Mission). Three local members did not support (Kobuk, two residents of Nome).

In their rationale for supporting, members brought up the success of the Noatak closure for residents of that community. One person argued that relationships between user groups would actually improve, because user conflict would be reduced. Two people said that local food security would benefit. One of the members from Nome thought that locals hunting from boats created the problem, not non-locals. The other resident of Nome felt that the closure request is a political move rather than a conservation action. The Kobuk resident's reason for opposing is noted in the section on potential side effects of closure.

Despite overall success of North Slope communities in harvesting caribou, the Council reiterated their support for the closure, both out of solidarity with the Northwest Artic and because if only Federal public lands in Unit 23 are closed, this could push non-local users and transporters into Unit 26A.

Defining the Problem

At Regional Advisory Council Meetings and Subsistence Resource Commission meetings, as well as in conversation with the WACH Working Group, members were asked to define the problem in Unit 23, as they see it. The Chair of the Northwest Arctic Council defined the problem at multiple public hearings, where he defined the problem in terms of disregard of time-tested traditional practices.

> This is not something that people really understand if they don't live here and they see it on the day to day basis. If you shoot one caribou who's at the front, who's in a small herd of maybe 10-15 caribou, it can alter that migration route for that one herd completely. They can turn around, do a 180 degree turn and go back north where they're going, back east, southwest, wherever they may be going…The tradition here is if you see a group of caribou you don't shoot the very first one you see. You let the animals go by and then you wait until you can shoot one in the middle of the pack…When people that have been living here thousands of years aren't able to get caribou with an 85% chance or greater success rate, if someone who has never set foot on the tundra can get one with that success rate there is a problem (OSM 2021a).

During their November 1-2 meeting, the Chair of the Northwest Arctic Council Chair clarified that in terms of concerns about deflection, the problem is both air traffic and hunters on the ground. Planes coming back and forth on a daily basis are also a main concern, and the Chair would like to see this traffic reduced until the caribou pass through.

> But predominately what we're seeing is it is boots on the ground just because the hunters that we're talking about are being taken so far north of Kotzebue, or east of Kotzebue or wherever the herd may be…as early as the beginning of August, earlier, and earlier in the season when they aren't really making the southern migration yet" (NWARAC 2021b).

At the same meeting, Council members stated that both predators and non-local hunters are turning caribou around, particularly near the Noatak River. One of the Council members from Kotzebue said: "You know the biggest problem I see is, you know, we as our Inupiaq culture, is to allow the first caribou to go by unhindered but if, you know, within the first couple weeks of August you've got hunters north of the Noatak, they're not allowing the first ones to come through" (NWARAC 2021b).

Another Council member from Kotzebue expressed frustration that transporters and guides prioritize profit over respecting the local cultural rule to let the first caribou pass through an area before hunting them. At the Cape Krusenstern SRC meeting on November 3, members agreed that non-local hunters should follow similar hunting practices as local subsistence users, including waiting for leaders to pass, and hunting on the south side of rivers and on tributaries only.

At public hearings, local residents described caribou as wary animals that will turn around if deterred by smell or sound. At the December 2 public hearing, residents of Kotzebue reported seeing planes flying too low, splitting the herd. One said: "I see too many caribou that are just running ragged and too much noise out there from the planes" (OSM 2021c). In addition to the impact of planes and non-local hunters on the ground, local residents said the current situation is also due to predators, decreasing herd size, and is exacerbated by increasing costs of fuel, ammunition, and food.

At the Cape Krusenstern SRC meeting, a member from Kotzebue explained that the region is striving to maintain a culture which is completely different than Western culture. She asked that the Federal government recognize this way of life. Two members from Kotzebue expressed frustration for the length of time their communities have been raising concerns about the effect of transporters on local caribou availability to State and Federal managers, to no avail.

The Director of the North Slope Borough Department of Wildlife Management defined the problem in Unit 26A as negative interactions between non-local hunters in the communities of Point Hope, Point Lay, Wainwright, Atqasuk and Anaktuvuk Pass, reports of which have increased in recent years.

When defining the problem in Unit 23, one local resident defined the problem as both air traffic and hunters on the ground (Kotzebue), another said the problem is sport hunters being dropped off in front of the herd (Point Hope), and another said that planes are dipping down too low close to caribou (Noatak). One person in Unit 22 and one in Unit 26 said that there is no user conflict in their local areas. A Nome resident thought that the problem was primarily political.

North Slope Council members from Utqiagvik, Point Hope, and Atqasuk expressed concern about the effects of aircraft on caribou. At their November 3-4 Council meeting, the North Slope Council Chair said that guides are not respecting the North Slope Borough permitting process and are arrogant towards his community (Utqiagvik). A small plane crash revealed that the pilot did not have proper permitting for the area:

> We really need to be working with…the Big Game Services Board to talk about regulatory requirements, because…it's multijurisdictional up here on the Slope…I would…think that there's some merit to the aircraft users and maybe the private users that might interfere with movement of caribou (NSRAC 2021).

The Council member from Point Hope stated that his community sees air traffic starting in July, even though the hunters don't come until later. He expressed frustration that there is not more transparency about who is flying in the area, and what they are doing. However, the member from Point Hope also focused on the effects of climate change delaying caribou, and his feedback on this section is detailed later in this section. Finally, the member from Point Hope said that he is concerned about overall declining caribou population and was eager to see the new population estimate. He suggested that a closure may also be needed because of declines in the herd.

Other Factors That May Be Contributing to Delayed Migration

Regional Advisory Council, Subsistence Resource Commission, and local WACH Working Group members spoke about other factors that may be contributing to delayed caribou migration. Climate change was frequently posited as a significantly contributing factor. A Cape Krusenstern SRC member from Kotzebue said that people have learned that caribou will follow the movement of the weather from their elders. For the Northwest Arctic residents, climate change was seen as operating in tandem with transporters and non-local hunting activity.

In contrast, residents of the Seward Peninsula area tended to focus more strongly on shifting weather patterns, including wind direction and rain on snow events, as the reason for changes in caribou movement and timing. At their fall 2021 meeting, the Seward Peninsula Council member from Stebbins said: "The way this climate is changing it's making it more difficult for our hunters to get some caribou. There [were] some hunters that had to go all the way almost to Selawik from here in Stebbins and that's a lot of gasoline mileage…that costs a lot of money. So I see everybody's having a difficult time trying to get the caribou because of the climate change. And it's putting a big dent in our pockets" (SPRAC 2021). He explained that when rain falls on snow, and then freezes, the caribou can't feed, and will turn around and move to areas they have already passed through that had food accessible. Furthermore, Seward Peninsula Council members reported that late freeze-up restricts caribou hunting access in Unit 22 (SPRAC 2021).

A WACH Working Group member from Nome stated that the hunting patterns on the Kobuk River may be affecting caribou movement. He specifically mentioned changing boat technology. Other factors given included predation, fires destroying food habitat, and avoidance of the Red Dog Mine road. High or increasing fuel costs also exacerbate the issue from a human perspective, as people cannot afford to adapt by traveling further. One Council member from Kotzebue said he believes the current targeted closure in Unit 23 may actually be pushing non-local users north. In summarizing many different variables at one of the public hearings, a Selawik resident said "Of course there'll be predators and climate change and other stuff, but we humans do make an impact too with flying our airplanes," suggesting that intervention should take place where possible (OSM 2021c).

The need to intervene in the situation given the background of climate change was also raised by the Tribal Administrator of Selawik at one of the public hearings:

> The evidence and data are empty freezers for eight out of 11 communities in this region. Kivalina and Noatak have first grabs up there and the rest of us are left with barely anything….food security is the utmost priority in the event that airlines cannot deliver food…We need to preserve what's left with global warming (OSM 2021a).

At their November 3 and 4 meeting, the Chair of the North Slope Council raised the effects of unusual weather patterns on caribou. His father was a reindeer herder, and taught him that when temperatures fluctuate, reindeer and caribou break through the hard snow crusts and cut their legs on it. He also wondered if this could contribute to caribou die-offs due to periods of starvation followed by dropping temperatures, as may have killed 2,000 caribou in the 90s near Ikpikpuk. This could contribute both to impeded movement and reduced herd numbers. In terms of factors affecting movement, the Chair also wondered about the effects of ice roads. "One of the things that some of those elders say, that ice road can be perceived by caribou as a freshly frozen river and then follow along that" (NSRAC 2021).

The Council member from Point Hope attributed the issue both to climate change and the effects of air traffic. He said that changing weather has caused concern for the caribou; in January and February in 2020, it rained and then froze, and he was worried that the caribou were not going to be able to access their food. He also stated that: "The last couple years…what the caribou have been doing is staying further north until the later part and not coming like when they normally do into our area the first part of July when we get the eggs, murre eggs…So, you know, the climate, you know, we're so used to getting things at a certain time of the month, you know, because of the climate and the weather…climate is changing and it's changing the

migration of certain animals" (NSRAC 2021). At the same time, hunters in his area report planes flying down low further inland, as though trying to herd them east.

Impacts of Delayed Migration on Communities

Regardless of the reasons behind the delayed and reduced availability of caribou in Unit 23, it is clear that people in the region are suffering greatly as a result. Testimony at Regional Advisory Council and Subsistence Resource Commission meetings, as well as at public hearings, illustrates the negative impacts on peoples' nutritional, economic, cultural, social, and spiritual well-being.

At their November 3-4 meeting, the North Slope Council member from Point Hope emphasized the link between the location of Unit 23 communities and the historical migration pathways of caribou, as well as the nature of the human-caribou relationship in the region:

> The communities within Unit 23…especially further east from Point Hope, those communities are in places where the caribou migrated. And they were put right in place because the caribou migrated right through that area and they didn't have to go anywhere, you know, the caribou came to them. We didn't have to chase the animals, we didn't have to go look for them, you know, we believe the animals gave themselves to us. That's why we were there and they fed us, clothed us, sheltered us for thousands of years until recently when things started to change. When the nonresidents or other or sport hunters started winning the caribou or moose…and being put in the front line of them and changing that migration route (NSRAC 2021).

A Northwest Arctic Council member from Kotzebue explained the need for caribou, which exceeds a simple caloric need:

> [Local people] need to get the caribou, they need to get their diet. The diet, it's in our blood, it's caribou. We depend heavily on caribou. And I'm one of them, if I eat fish -- I like fish, but my body craves for caribou and [if you] crave for caribou and you eat something else and you're still hungry inside, your body's trying to tell you (NWARAC 2021b).

During one of the public hearings, a resident of the Northwest Arctic region explained that when the opportunity to hunt for caribou is taken away, knowledge transmission is interrupted, and people forget where they came from; suicide and addiction can take hold. She explained:

> When we allow others to hunt on our land, those who do not know tradition, [this] affects the herds running through areas when we need them to successfully migrate to the right direction to feed all our people… Low harvests are affecting us more than we explain…You can use your science and biology, but no one will ever understand the struggle of life until you sit here with your families and your bodies (OSM 2021a).

Another mother from Kiana spoke of her young son being unable to learn how to hunt caribou or get his first caribou due to a lack of animals.

In a similar situation of reduced caribou access, Cunsolo et al. (2020) conducted ethnographic work on the effects of loss of caribou for Inuit in Labrador, where caribou have declined rapidly since 2001. In 2013, a

hunting moratorium was implemented. The authors show how lack of caribou has created "disruptions of knowledge systems related to caribou, leading to disruptions to self and cultural practices and continuity" (Cunsolo et al. 2020: 41). Participants in the research expressed anxiety that if the caribou did not become available, generations of place-based knowledge would be lost.

At public hearings, many local residents spoke about the severe economic and nutritional issues posed by the lack of caribou:

> We support families region-wide, not just Kiana. And it's really heart-breaking when I have to go out, sometimes seven times just to try to get caribou for our families. So, we really need to think this through and understand how important it is to feed our families because I go to the store, it's $30 a steak. And when they say that we've got to get data, I live here, folks. What more data do you need? The people - the outcry of the people are telling you they're affecting our herd (OSM 2021c).

The decision to continue searching for caribou when they are scarce can become untenable. Many local residents explained that with the price of gas very high, people cannot afford to travel far looking for caribou and return without them. As resident of Selawik said, "We, our local - our hunters, we haven't been getting caribou, and it's really taking a toll on our village. We really count on the caribou coming through because of high prices of gas, shells…that stuff we need to hunt" (OSM 2021c). Local members of the WACH Working Group also explained that increased fuel costs create a significant limit on going further to look for caribou. It is not just economic risks that people take: every trip to look for caribou entails physical risk as well, and risks increase with the distance and frequency of trips required.

As a result, many people have given up going out for caribou in the traditional harvest season. A Northwest Arctic Council member from Kotzebue said, "I know that I quit wasting my money going up the rivers to hunt because they're not there so I wait until…late October, November when the caribou herds start to come through Kotzebue…to be able to harvest my caribou and by then, you know, the big bulls are in their rut" (NWARAC 2021b).

Traditionally, bulls were harvested prior to the rut. Prior to the rut, the bulls are fat, their meat is in peak condition, and their leather is thick, making it ideal for clothing. When the caribou haven't shown up, this causes worry for the communities, because they need to get the bulls before the rut. In the past they were available from late summer through September. As noted in the quote above, a significant consequence of delayed harvest is that by the time caribou do arrive in the areas closer to communities, the bulls are already in rut. This can tip more of the harvest toward cows, which is more detrimental for conservation as well as being out of line with traditional practice. According to the Northwest Arctic Council member from Kotzebue, "It's kind of a hit or miss whether you get one that's good or not and a lot of people depend on the cows" (NWARAC 2021b).

The impacts of the lack of caribou are compounded by the simultaneous crisis of the COVID-19 pandemic, and related increased prices in food in the villages. One of the Northwest Arctic Council members from Kotzebue said that the pandemic has made supplies and food less available in the villages, making food security an even more pressing issue.

Specific Geographical Areas of Concern

OSM staff sought comments from Regional Advisory Council and Subsistence Resource Commission members about more geographically targeted areas of concern, which may be a priority for closure. However, not much information was forthcoming. All discussions were conducted over teleconference; it is possible that additional inquiry, using systematic inquiry and maps during in-person meetings, may be more successful in the future. However, because caribou migration shifts from year to year, and because by definition concerns over non-local hunters deflecting herds focuses on areas beyond communities, there may not be a geographically targeted solution to this particular closure request. Any area in front of the herd could be considered sensitive. Members themselves requested improved information from agencies about where transporters are flying and dropping off non-local hunters.

At their November 4 meeting, the Kobuk Valley SRC member from Ambler stated that Caribou typically come in from the Noatak River, cross over the Squirrel, then come to the Upper Kobuk from the Kiana area. It is worth noting that some comments from residents of Kotzebue, Noatak, and Shungnak suggested that the herd is being diverted further up the Noatak River from where the current targeted closure extends. Thus, one alternative may be to extend that targeted closure further along the river corridor. The Gates of the Arctic SRC member from Shungnak identified Howard Pass, on the northwest perimeter of Noatak National Preserve as a critical area of caribou funneling and passage, where non-local hunters are frequently dropped off and interrupt herd movement.

Potential Side Effects of the Requested Closure

Many voices weighing in on this closure have expressed concerns that closure of Federal public lands in Units 23 and 26A may increase user conflict by concentrating users on State land around communities. This concern has primarily been raised by individuals and entities other than local residents (with the exception of an Ambler resident). This question was posed to the Northwest Arctic Council during their November 1-2 meeting. The Council Chair responded:

> The thing is at this point in time that's what would be preferable just in that if the non-local people are hunting the same area as local people, there, you're able to make sure that everyone is following kind of the same kind of community guidelines of, like has been brought up of different agencies, like staying on the south side of the river, of allowing the first group to pass. So in the event that this closure were to happen, conflicts, I feel, would be minimal just because they would be able to be resolved with local knowledge (NWARAC 2021b).

When OSM staff asked WACH Working Group members about potential side effects of the requested closure, two local members thought that a closure on Federal lands would push users onto other lands (Kobuk, Atqasuk). The member from Koyuk thought that the closure could create a domino effect in which other regions asked for closures.

During their November 3-4 meeting, the Chair of the North Slope Council said that one side effect of the closure would be the people who used to live in the region but now live in urban areas would not be able to hunt on Federal lands in the units. Another side effect would be that other areas that are not in the two units may get additional pressure from non-local hunters.

Tribal and ANCSA Corporation Consultations

Tribal and ANCSA corporation consultations were first held on April 28 and May 26, 2021 by teleconference. The April 28 and May 26 consultations were attended by representatives of the Native Village of Selawik, Naqsragmiut Tribal Council (Anaktuvuk Pass), the Inupiat Community of the Arctic Slope, the Native Village of Point Hope, the Native Village of Kiana, the Native Village of Kobuk, Kikiktagruk Inupiat Corporation (Kotzebue), NANA Regional Corporation, and the Arctic Slope Regional Corporation.

Representatives of Alaska Native Corporations and Tribes in the region expressed strong support for the closure in order to allow caribou migrations to return to their previous, typical route, and to support communities during a time when food security has been affected by the COVID-19 pandemic and high fuel prices. Caribou have provided vital sustenance for Iñupiaq people in the Northwest Arctic since "time immemorial," and the current lack of caribou during the traditional time of harvest has created great hardship for residents.

Participants clarified that they are concerned with the effects of low-flying, small aircraft on caribou, rather than the effects of commercial flights. When non-local hunters are dropped off right in front of caribou, this can create problems for subsistence hunters. One participant with experience as a reindeer herder and caribou hunter described the effects of human-caribou interaction as capable of diverting migration pathways. Disruption in migration was dated to 2017 by one Tribal representative from the lower Kobuk River region. Caribou are not only coming later; they are also less abundant in the region overall. Participants expressed the need for scientists to share caribou tracking data with communities. One participant explained that when the caribou migration is delayed, transportation to hunting areas becomes difficult. The cost of going further to get caribou is often prohibitive due to the extremely high fuel prices in the region. Additionally, when the migration is delayed, locals are forced to hunt more cows, rather than bulls.

When caribou are not available, the few taken are given to elders. When non-Federally qualified users share meat with locals, this is appreciated, but does not replace successful subsistence activities, which encompass traditional practices and transmission of culture. Moose are not traditionally the favored subsistence food in the Northwest Arctic and North Slope regions, and so cannot substitute adequately for lost caribou.

The fact that relatives living outside of the region would not be able to hunt on Federal public lands during a closure to non-Federally qualified users was discussed, but it was clarified that these individuals would still be able to hunt on Native Corporation land under State regulations.

Additional Tribal and ANCSA Corporation Consultations on WSA21-01 are scheduled for January 27, 2022.

Non-local Residents and Nonresidents/Non-Federally Qualified Users

The date and participation levels for three public hearings and a written comment period held by OSM are given in an earlier section (see page 56). Highlights of comments given during public hearings and the

written comment period by local subsistence users and transporters and guides—two groups from which the Board specifically requested additional input—are also detailed elsewhere in this section. Of note, some Federally qualified subsistence users expressed concern that non-local and non-resident hunters were being given a prominent voice in consideration of a closure request having to do with the food security of the region (e.g., the Council member from Point Hope, NSRAC 2021).

The majority of individuals who shared their opinions on the requested closure during public comment opportunities were in opposition. The reasons most frequently given for opposition in both written comments and at the public hearings can be broken down into the following categories: (1) decisions regarding wildlife management should always be science-based, and this closure is not supported by available [Western] science; (2) the WACH population is above management objectives and not a conservation concern; (3) there is not evidence that air traffic has delayed caribou migration; (4) subsistence harvest of caribou has remained high, while nonlocal caribou harvest is negligible; (5) Federal public land should be open to all; (6) local businesses and guides will be negatively affected; (7) non-local hunters have already booked expensive trips; (8) once-in-a-lifetime experiences will be lost, often involving family members; (9) distinguishing between sport and subsistence hunting is not fair or valid; and (10) this action would represent Federal overreach. One individual also argued that lead caribou are commonly known to be cows, while non-resident hunters are restricted to bulls only and therefore, could not be harvesting the lead caribou.

Transporters and Guides

The Big Game Commercial Services Board (BGCSB) submitted a written comment in opposition to the requested closure on April 20, 2021. The BGCSB regulates, licenses, and disciplines Big Game Guides and Transporters operating in Alaska. In their letter, the BGCSB expressed the opinion that WSA21-01 would cause "irreparable harm to licensees without justification based in conservation or legitimate threat to the continued subsistence use of these populations as required in the Alaska National Interest Lands Conservation Act (ANILCA)." According to the BGCSB, there are only four licensed Registered Guide Outfitters in Units 23 and four in 26A. In Unit 23, guides are registered in Guide Use Areas 23-01 and 23-02; for Unit 26A, guides are registered in Guide Use Areas 26-08, 26-11, and 26-12 (see linked map on page 38).

BGCSB indicated that the number of transporters is difficult to determine, as transporters are not required to register for their areas; however, there may be fewer transporter businesses than guides operating in the area. BGCSB argues that closures on Federal lands will concentrate operators onto State lands near communities. The BGCSB highlights its commitment to reducing conflicts between subsistence users and its licensed operators, and its willingness to engage with the Regional Advisory Councils and the Federal Subsistence Board on these issues. The letter also argues that the act would cause harm to the Wildlife Management Authority of the State of Alaska.

A representative of the Alaska Professional Hunters Association (APHA) called into to the April 23 public hearing to express opposition to the requested closure. APHA is a statewide organization representing hunting guides. APHA noted that most hunting guides operating in the area are Alaska residents with deep community roots. Guide businesses are small and vulnerable due to the impacts of the pandemic. Guides offset hunts for moose and caribou with hunts for bears and wolves. APHA stated that meat harvested under

guided hunts is shared with local communities. Finally, APHA expressed their belief that the closure would be an illegal reallocation of resources.

Additional transporters and guides also called in during the public hearings. At both the April 23 and November 17 public hearings, a transporter operating in Unit 23 expressed his opposition to the closure due to lack of biological justification. He also noted that the closure would not address air traffic into and between villages in the region or motorized boats used on the Noatak River. He continued: "We are aware of the impact of taking the leaders of the herd and we don't do that. By the time we start our hunting into the second week of August, the lead groups of caribou have already passed any [camps]" (OSM 2021b).

At both the April 23 and November 17 hearings, a guide operating in Unit 23 expressed the opinion that adequate protections are already in place for the caribou migration, aircraft have no impact and did not affect movement previously, and that caribou migration is always unpredictable. He also stated that in practice the two-month closure would be a year-round closure to non-local hunters.

During the November 17 hearing, two guides operating in Unit 26A expressed their opposition to the requested closure. The first noted that his clients harvest about the same number of grizzlies as caribou; as grizzlies may also impact caribou movement, he believes that overall he has a positive effect on caribou movement and availability. The second stated that a closure would displace users onto State land, increasing user conflicts.

At the December 2 hearing, one individual reporting to be a transporter called in, but it was unclear in which area he operates. He was opposed to the closure and stated that in the past Alaska Native people were nomadic, traveling to the caribou, whereas now they live in settled communities and do not have the option of being as mobile. He believes that if it were true that planes are having an effect on caribou, then the same would also be true for river boats.

A retired guide who used to operate in the Kotzebue area agreed that there has been a change in the caribou migration and attributed this not to non-local hunters, but to changing weather and to Red Dog Mine, which seems to have shifted caribou movement to the east. Changing wind directions may be a factor: "Normally, there'd be a north wind, but nowadays it seems like a south wind, and everybody knows that caribou doesn't like to walk in the south wind when it's warm" (OSM 2021c). Since he does not think the number of non-local hunters has increased, he doesn't see how they could be the problem now. He has donated good meat to elders. He also noted that there are already large areas closed or restricted.

One member of the WACH Working Group represents hunting guides, and another represents transporters, but is himself also a guide in Unit 23. Both of these individuals are opposed to the requested closure because they don't see any evidence that aircraft or transporters and guides are affecting caribou migration. One stated that the 2016 closure forced everyone onto State lands, which created more user conflict. The closure would also put the operators out of business.

In defining the problem in Unit 23, these individuals said that caribou migration is a poorly understood complex system, and that migration changes have to do with the falls being wet and windy instead of cold and clear like they used to be. Caribou may also be changing their migration due to predators. Both acknowledged that caribou movements have been unusual in recent years, and they themselves have had to

go further and expend more effort in recent years. In 2021, caribou were going north in August and September. The transporter representative said he saw a record low number of caribou in 2021. In terms of specific areas of concern, the transporter representative noted that most locals can't get to where NFQUs are hunting, so there is no conflict in the field.

Federal Land Managing Agencies

When deferring decision-making on WSA21-01 in June 2021, the Board asked that OSM seek additional feedback on the closure request and concerns related to caribou from multiple entities, including Federal land managing agencies. In Units 23 and 26, these include the National Park Service (Western Arctic National Parklands), BLM (Anchorage and Arctic Field Offices), and the USFWS (Selawik National Wildlife Refuge).

On September 23, 2021, OSM hosted an inter-agency meeting with these entities to discuss WSA21-01. Agency representatives stated that the scope of the initial request, spanning two species and units, made it difficult to address. For this reason, the analysis has now been divided into WSA21-01a (caribou) and WSA21-01b (moose).

Representatives from both the BLM Anchorage Field Office and the Selawik National Wildlife Refuge expressed concerns that closing all Federal lands in Units 23 and 26A would push non-Federally qualified users onto other lands, including State lands around communities. It was noted that the Northwest Arctic Council's request was an attempt to compromise through limiting the temporal scope of the request, but a further compromise could be made based on reduced geographical scope of the area proposed for closure.

Agency representatives emphasized that much has already been done to address this issue, but the extent of these past actions (e.g. Controlled Use Areas, educational requirements and stipulations for transporters and guides, and the targeted closure in Unit 23) may not be widely known at the local level. Selawik Refuge has been leading an effort to share information about these measures with the Regional Advisory Councils.

Representatives agreed that better data would be needed on where transporters, guides, and non-local hunters are going in Units 23 and 26A in order to create a framework for targeted restrictions on transporters and clients, if warranted. In addition, more comprehensive tracking and transparent reporting of transporter, guide, and non-local hunting activity could contribute to de-escalating tension between the different user groups. However, improved collection and reporting of this data depends on the internal practices of each agency. Improved data on transporters, guides, and non-local hunters could be an asset in management but may not be sufficient to prove deflection of caribou migration by air traffic and non-local hunters. Agencies agreed that the issues driving WSA21-01 are multi-dimensional, covering climate change, food security, indigenous self-determination, cultural conflicts, and trophy hunting.

Western Arctic Caribou Herd Working Group: Group Position on WSA21-01

At the December 9, 2020 meeting of the WACH Working Group Steve Oomittuk of Point Hope made a motion to support the North Slope Subsistence Regional Advisory Council if the Council were to submit a proposal to close Federal public lands in Unit 26A to non-Federally qualified subsistence users; this motion passed (WACH Working Group 2020). While the North Slope Regional Advisory Council did not formally

submit a request or proposal to close Federal lands in Unit 26A, it did support the Northwest Arctic Council in the current request to close Units 23 and 26A to hunting of caribou and moose by non-Federally qualified users Aug. 1-Sep. 30, 2021.

Following Board deferral of decision-making on WSA21-01, OSM sought comments on the proposed closure and concerns related to caribou from members of the WACH Working Group. The Executive Committee of the WACH Working Group asked that OSM staff speak directly to members. Staff spoke with 11 WACH Working Group members who reside within the range of the WACH and 5 members who do not reside within the range of the herd. Results were then compiled and returned to each member of the group. For simplicity, the individual comments from WACH Working Group members are presented in sections on feedback from local subsistence users and transporters and guides in this analysis. A summary of individual feedback from members was presented to the group at their December 15, 2021 meeting.

At their meeting, the WACH Working Group voted to change the management level of the herd to from "conservative declining" to "preservative declining" (WACH Working Group 2021). At this management level, one of the WACH Working Groups' management recommendations is: "Harvest restricted to residents only, according to State and Federal law. Closure of some Federal public lands to non-qualified users may be necessary." However, discussion of WSA21-01 focused on whether or not non-local hunters are deflecting caribou, rather than the new population estimate. In discussing future harvest restrictions, focus was placed on avenues for reducing cow harvest, rather than bull harvest by non-Federally qualified users. The group voted 11 to 3 in opposition to WSA21-01, in part due to that the moose and caribou closures were not independent.

Alaska Department of Fish and Game

ADF&G submitted a written memorandum opposing this special action request, stating that the proponent's objective of regulating the use of aircraft for caribou hunting would be more appropriately addressed by submitting a proposal to the Alaska Board of Game. Additionally, the State argued that this closure would have negative economic consequences for the State and would prevent non-Federally qualified users with ties to the area from hunting on Federal public lands. ADF&G also gave a comment during the April 23 and November 2 public hearings, which echoed their written memorandum.

State of Alaska Advisory Committees

OSM sent an email to the chairs of the Lower Kobuk, Upper Kobuk, Kotzebue Sound, Noatak/Kivalina, North Slope, and Northern Seward Peninsula Advisory Committees on October 18, 2021 inviting comment on WSA21-01 but did not receive any responses. Of note, none of these ACs held meetings during the summer or fall of 2021.

Law Enforcement

OSM sent a request to the ADF&G and Federal land managers seeking feedback on user conflict and caribou deflection in Units 23 and 26A from law enforcement agents operating in the area. On December 23, 2021 OSM received an emailed response from the Northern Detachment Commander of the Alaska Wildlife Troopers. The Commander wrote that "there are multiple deconflicting measures already in place

in Unit 23 which keep non-resident, fly-in hunters far from local hunters" (DeGraaf 2021, pers. comm.). Troopers spent almost every good-weather day during the last two years has been spent patrolling Unit 23, primarily by aircraft. During that time, patrollers did not observe any systematic user conflict or caribou deflection.

> We have received several complaints of low-flying aircraft during the last two summer hunting seasons. Of those complaints, none of them were found to be tied to any legitimate harassment or deflection of caribou. During our near-daily patrol flights, observations have been that caribou are, by and large, unresponsive to aircraft flying overhead. Occasionally they will startle and run for a few seconds until the plane passes, at which point they stop running and resume grazing (DeGraaf 2021, pers. comm.).

Alaska Wildlife Troopers "issued between one and two dozen citations per season to non-resident hunters over the last two seasons" (DeGraaf 2021, pers. comm.). Some of these citations pertained to taking cows during a closed season and several over-limit caribou citations were also issued. All citations were in response to self-reporting.

On January 4, 2022 OSM received an emailed response from the Chief Ranger of Western Arctic Parklands. In his response, the Chief Ranger wrote that the NPS employs two law enforcement rangers for the region, both of whom are based in Kotzebue. Noatak National Preserve is patrolled by air in August and September by the NPS rangers as well as by the Alaska Wildlife Troopers. Special patrol focus is placed on closed and restricted areas, including the NPS Delayed Entry Area, the Noatak corridor closure, and the State of Alaska Noatak Controlled Use Area. Additionally, the geographic focus of patrols moves from year-to-year as the caribou migration hunting activity shift. Direct user conflict is very rare, in the rangers' observation, as local and non-local hunters are spatially separated. Overall, the closures and restrictions as well as CUA stipulations for Noatak National Preserve are being adhered to, with limited violations.

The Chief Ranger described the NPS agents' experience with air traffic complaints in Unit 23:

> FQSUs from Noatak Village have complained of general airplane traffic over the Noatak River during their hunts…over the past two years, the NPS has received several complaints of a "white airplane on floats" flying low over the Noatak River daily, sometimes multiple times per day…it is unclear from these complaints if the airplane is in violation of any FAA regulations (Sample 2022, pers. comm.).

NPS rangers have observed that caribou are often unaffected by low-flying planes, but occasionally change direction when a plane is flying low in order to land. "In areas of relatively high concentration of hunting parties, caribou are regularly observed bypassing these parties and continuing south as would be expected during a migration, even if a hunter makes a successful kill" (Sample 2022, pers. comm.).

Alternatives Suggested in Feedback

Suggestions about alternative solutions to the concerns in Units 23 and 26A were given at Council and Commission meetings, by the WACH Working Group, and at public hearings. Some of these solutions were intended to augment, not replace the closure. The suggestions are given as bullet points below.

- If the problem is non-local hunters, **delay the non-resident hunting season to September 15 to October 15** to allow the first wave of caribou to pass through. A Northwest Arctic Council member from Kotzebue said: "This would…allow local people to be able to go hunt in their traditional areas that they've done in the rivers for many years. That way that's allowing the first group to come through unhindered and you're also allowing, you know, our customary hunting areas to be used again when they travel through there unhindered" (NWARAC 2021b).

- If the problem is climate change (as well as the effect of non-local hunters), **delay hunting dates under State regulations to reflect altered timing** and allow more caribou to pass through.

- "Just…**waiting for the animals to cross to the south side of the river** just allowing for that traditional knowledge of waiting for them to get to a certain point and letting X amount of animals pass by…waiting until the caribou have crossed some of the major rivers, whether it be the Noatak or the Kobuk, and then allowing outside hunters to hunt that would be our culture to allow the first ones to come by" (NWARAC 2021b).

- **Limit non-local hunting to the south side** of the Kobuk and Noatak Rivers

- **Close more river corridors**.

- Create "areas of influence" around communities, which would be closed to non-local hunters (these areas could include both State and Federal land depending on configurations around communities). The areas of influence would be approximately 30 miles in radius around a community.

- Expand **no-fly zones**

- **Reduce the number of transporters** allowed into the region, or **limit the number of clients** they can bring in.

- Instituting a **draw permit** (under State regulations)

- Drop hunters off in the villages and let the local residents guide them

- **Increase education** of non-local hunters, transporters, and guides about traditional rules for hunting caribou.

- Support **inter-community sharing** of caribou during times of scarcity.

- Create a better system for **non-local hunters to share their meat with Elders**. It has been noted by many local residents that meat donations from sport hunters are usually not processed properly, and thus are usually not edible by local residents.

Some solutions had to do with increasing data transparency and availability:

- **Improve information sharing** between ADF&G and subsistence hunters **about caribou location** (this would reduce the need to waste fuel on looking for caribou). There could be a WACH hotline (similar to the 40-mile caribou hotline) for hunters to call to find out where the caribou are, so they don't waste valuable fuel, money and time.

- Make **information about flights** within the caribou migration corridor available in a transparent fashion.

Effects of the Proposal

According to Section 815(3) of ANILCA, public lands may be temporarily closed to the harvest of a specified wildlife population for nonsubsistence uses if "necessary for the conservation of healthy populations of fish and wildlife, for the reasons set forth in section 816, to continue subsistence uses of such populations, or pursuant to other applicable law." The Code of Federal Regulations 50 CFR 100.19(b)(1) further specifies that for temporary special actions, such closures should not be "an unnecessary restriction on nonsubsistence users" or "be detrimental to the long-term subsistence use of fish or wildlife resources."

If this special action request is approved, Federal public lands in Unit 23 and Unit 26A will be closed to the harvest of caribou by non-Federally qualified users from Aug. 1-Sep. 30, 2022. Only Federally qualified subsistence users—those with a customary and traditional use determination for caribou in Units 23 and Unit 26A—would be able to harvest caribou on Federal public lands in these units.

Communities in the southwest portion of Unit 23 are experiencing severe hardship and food insecurity due to a reduction in local caribou availability. Approving this request may result in increased subsistence opportunity for Federally qualified subsistence users. The entirety of Unit 23 was closed to caribou hunting by non-Federally qualified subsistence users during the 2016/17 regulatory year. Testimony from the Northwest Arctic Council in the fall of 2016, following implementation of this closure, indicated that the action had a positive effect on the availability of caribou for local communities. Council members also stated that the closure allowed communities to carry out subsistence practices without tension from conflicts with non-local hunters (NWARAC 2016a).

As discussed throughout this analysis, Traditional Ecological Knowledge indicates that interacting with caribou in particular ways, such as flying low, not letting the leader pass, or simply creating excessive noise can change caribou migration routes. When this occurs far upstream of traditional harvest areas, this may prevent caribou from reaching those areas. However, Traditional Ecological Knowledge also indicates that changes in weather patterns are contributing to alterations in caribou migration, which is likewise indicated in emerging scientific research. In one study, Western Arctic caribou migrated in response to deep snow and cold temperatures but paused migration when they encountered snow free areas or warmer temperatures (Cameron et al. 2021).

There is agreement between knowledge passed down to residents of the Northwest Arctic region by elders and the scientific literature that changes in temperature, wind direction, snow depth, and vegetation shape the trajectory of caribou migration. In addition, research suggests that industrial roads, such as the Red Dog Mine Road, may delay or deflect migration for at least a portion of the herd (Wilson et al. 2016, WACH

Working Group 2021). Finally, there was agreement across stakeholder groups that high levels of predation are likely to be affecting caribou in Unit 23.

Delay in migration appears to be occurring between the Noatak and Kobuk Rivers (see "Biological Background"). Since 2017, substantially fewer GPS-collared caribou have also crossed the Kobuk and Selawik Rivers (and the Noatak River, but to a lesser extent). This is also supported by local testimony that residents in Kiana and Kotzebue are not getting caribou in the fall due to delays (see "Current Events and Outreach: Local Subsistence Users") as well as by GPS-collared caribou data (**Figure 1, Table 6**). To date, scientific research has not been able to demonstrate large-scale or long-term impacts of air traffic alone on caribou migration (Dau 2015, Fullman et al. 2017). The gap between scientific research and Traditional Ecological Knowledge on this subject may result from differences in the scale of observation. Even minor, short-term disruptions to caribou movement can have significant effects for the hunting success of local residents. The disparity between Traditional Ecological Knowledge and scientific research on this subject also derives very different cultural assumptions about the relationship between human action and caribou behavior (Spaeder et al. 2003).

It is unknown whether closing Federal public lands to non-Federally qualified subsistence users in either Unit 23 or Unit 26A, or both, will contribute to restoration of historic migration routes and phenology. To the extent that air traffic and non-local hunting activity may be having an effect on local caribou availability for communities in the region, it is likely one of multiple factors considered in this analysis, including changing weather, the presence of an industrial road, and overall reduced herd size. Non-local hunting activity has occurred in Unit 23 for decades and the caribou migration timing and routes have only recently changed, suggesting that other factors, including changing weather conditions, are responsible for the delayed migration rather than non-local hunters alone. There are undoubtedly cumulative, interactive effects of these multiple factors. Of all these factors, non-local hunting activity and associated air traffic is the most visible and provides the most straightforward avenue for regulatory intervention.

Approving this request may increase hunting pressure on State or private lands. State lands comprise 19% of Unit 23 and also encompass many of the villages in the unit (**Map 1)**. If this proposal is adopted, user conflicts and concern about the effects of non-local hunters on caribou migration may increase on State lands, particularly along the upper Kobuk River. If only Unit 23 is closed to non-Federally qualified users, these users may be displaced onto both State and Federal public lands in adjacent units (i.e., Unit 26A), which could impact hunting and harvest there. Ambler residents have expressed concern over closure of all Federal public lands due to the potential to concentrate non-local hunters around the Upper Kobuk villages, which are surrounded by State lands.

If this special action request is approved, those with a history of residency and family connection in Unit 23 who are now residing in nonrural areas would not be able to harvest caribou on Federal public lands in Units 23 and 26A Aug. 1-Sep. 30, 2022, as they are not Federally qualified users. Non-Federally qualified users who are Native corporation shareholders would still be able to hunt on Native Corporation, State, and private lands under State regulations.

While the number of people and planes on Federal public lands may decrease, user conflicts involving planes would not be fully eliminated since other users (i.e. hunters seeking species other than caribou, photographers, recreational boaters, private planes) would still be able to fly over and access Federal public

lands. Additionally, non-Federally qualified users would still be able to access and harvest caribou on gravel bars below the mean high-water mark within Federal public lands as these areas are under State management jurisdiction. Reports from law enforcement and nonlocal hunters indicate caribou are commonly harvested on such gravel bars, which may suggest limited impacts of a closure. As the rationale for this request focuses on the effect of non-local aircraft activity on caribou migration, closure of Federal public lands could represent an unnecessary restriction on the approximately 28% of non-Federally qualified users who do not access the WACH by plane (Dau 2015).

If approved, this special action request would reduce air traffic related to transporter caribou hunters in Noatak National Preserve. However, because there are already several Controlled Use Areas in place for Units 23 and 26A, closure to non-Federally qualified users would likely not reduce hunting-related air traffic in areas already covered by Controlled Use Areas specific to caribou. It could, however, reduce other forms of non-local hunter presence and associated activity and noise on areas already covered by Controlled Use Areas, as well as all Federal public lands. This proposal would also likely reduce air traffic over areas and during times not currently covered by Controlled Use Areas.

While conservation of a wildlife population is reason to close Federal public lands to non-Federally qualified users under ANILCA, OSM does not consider the recent population decline to meet this threshold due to the still relatively large size of the herd (188,000 caribou), the small number of caribou harvested each year by non-Federally qualified users as well as the opinion of the ADF&G biologist that cautious optimism for the herd's trajectory is warranted due to adequate calf recruitment (WACH WG 2021).

A new population estimate for the WACH was released by ADF&G in December 2021, and it is appropriate to consider this new data in analysis of the current closure request. The estimated population of the WACH declined from 244,000 in 2019 to 188,000 in 2021. Simultaneously, testimony from local subsistence users residing in the region indicates that they have been unable to continue their subsistence for caribou due to lack of local availability. These two lines of evidence converge; although the proponent's original rationale for WSA21-01 is based on concern about herd deflection, a declining herd is also likely contributing to lack of caribou availability in Unit 23.

Although harvest by non-Federally qualified users in Units 23 and 26A represents a small percentage of harvest from the WACH, the harvestable surplus is likely being exceeded overall. Therefore, reducing harvest by closing caribou hunting to non-Federally qualified users on Federal public lands may contribute incrementally to both conservation of the herd and continuation of subsistence uses during a time of herd decline.

OSM PRELIMINARY CONCLUSION

Neutral on Temporary Special Action Request WSA21-01a.

This analysis has demonstrated valid arguments for both approving with modification and rejecting WSA21-01a. Ultimately, the Board's decision will be guided by the objectives of Title VIII of ANILCA to provide a subsistence priority on Federal public lands while conserving a healthy caribou population and ensuring the continuation of subsistence uses of this resource.

There are two main actions the Board may wish to consider in response to WSA21-01a.

Approve WSA21-01a **with modification** to close caribou hunting to non-Federally qualified users in Noatak National Preserve and-BLM managed lands between the Noatak and Kobuk Rivers only August 1 to September 30, 2022.

Reject WSA21-01a, resulting in maintenance of the status quo.

Arguments addressing the conservation of healthy populations of caribou and continuation of subsistence uses of caribou in relation to WSA21-01a have been compiled below.

Approve WSA21-01a with Modification: Points to Consider

When deferring WSA21-01, the Board requested that OSM gather feedback from multiple stakeholders on concerns related to caribou in Units 23 and 26A. Extensive testimony gathered during this process shows that Federally qualified subsistence users in most communities in Unit 23 have been unable to continue their subsistence for caribou in recent years. In 2021, residents of Kotzebue, Noorvik, Kiana, Selawik, and Buckland all reported being unable to meet their subsistence needs for caribou, while the Upper Kobuk River communities harvested caribou only very late in the season. Lack of caribou availability is resulting in significant hardship, uncertainty, and food insecurity for Federally qualified subsistence users in Unit 23.

Testimony about lack of local caribou availability in the Northwest Arctic converges with recent evidence of WACH population decline. The most recent population estimate for the WACH indicates that the herd has declined 24% from 244,000 caribou in 2019 to 188,000 caribou in 2021. The herd population decline may be contributing to lack of caribou availability in Unit 23. The herd is now being managed at the "preservative declining" level, and under the WACH Working Group's management plan, management recommendations at this level include closure of the non-resident season under State regulations as well as possible closure of some Federal public lands to non-Federally qualified users.

Furthermore, the best available data suggest that the harvestable surplus may be exceeded. At 6% of the population estimate, the current harvestable surplus is 11,280 caribou. From 2014 through 2018, the annual estimated total harvest from the WACH averaged 14,699 caribou. While more precise estimates are not available from ADF&G after 2018, the baseline estimated harvest used for the WACH is 12,000 +/- 1,750 (WACH Working Group 2021). If this number is taken as the current estimated harvest, the harvestable surplus is likely being exceeded. While there is uncertainty around the size of the local caribou harvest, which has likely declined due to delayed caribou migration and lack of local availability in much of Unit 23, these harvest estimates constitute the best available data.

Non-local harvest accounts for a small percentage (~5%) of overall harvest from the WACH. From 2014 through 2018, non-local hunters harvested an average 328 WACH caribou. However, in a situation in which the WACH is declining, the harvestable surplus may be exceeded, and Federally qualified subsistence users are unable to meet their subsistence needs, restrictions to non-Federally qualified users may be necessary as specified in §815.3 of ANILCA, regardless of the magnitude of their harvest. While the unavailability of caribou to local Unit 23 communities due to changes in WACH migration routes and timing is likely caused by many factors such as weather, climate change, roads, and caribou forage/lichen availability, and while

the effect of non-local users on caribou migration remains uncertain, the onus is on the Board to provide for a subsistence priority through regulating the factors over which it has authority.

Under this alternative, OSM recommends closing Noatak National Preserve and BLM-managed lands between the Noatak and Kobuk Rivers only to caribou hunting by non-Federally qualified users from August 1 to September 30, 2022, based on both continuation of subsistence uses and conservation of the WACH population. This represents a geographical compromise in relation to the Northwest Arctic Council's original request.

Although the decline in the WACH affects the herd throughout its range, closing Noatak National Preserve and BLM-managed lands between the Noatak and Kobuk Rivers would have the most direct benefit for those communities in Unit 23 who have been unable to continue their subsistence hunting for caribou as well as for the WACH itself. Specifically, the delay in caribou migration has primarily occurred between the Noatak and Kobuk Rivers based on local testimony and GPS-collared caribou data. Therefore, closing the Federal public lands between these rivers may aid in increasing caribou availability for the communities of southwestern Unit 23 (e.g. Kiana, Kotzebue, Selawik, and Buckland). Closing lands north of the Noatak River within Noatak National Preserve may be necessary for the conservation of healthy caribou populations as this is where much of the non-local harvest is concentrated as well as where potential herd diversions may occur, as asserted by numerous local residents. These Federal public lands are also where most user conflicts are reported to occur. One concern for this alternative would be possible concentration of non-local hunters on gravel bars below the mean high-water mark and on State lands surrounding the Upper Kobuk communities.

OSM considers a full closure of Federal public lands in Units 23 and 26A an unnecessary restriction on nonsubsistence users and does not support a full closure. Non-federally qualified users rarely harvest caribou in the portions of Bering Land Bridge National Preserve and Gates of the Arctic National Preserve within Unit 23, on the other scattered BLM lands in the unit, or in Selawik National Wildlife Refuge. Additionally, closing hunting to non-Federally qualified users on Federal public lands in Unit 26A is not warranted. Testimony gathered through the analysis process shows that Federally qualified subsistence users in Unit 26A are meeting their subsistence needs for caribou and are not facing the same challenges as those in Unit 23.

Reject WSA21-01: Points to Consider

While the scientific literature and local testimony indicates that aircraft and non-local hunting activity can affect caribou behavior in the short-term, they have not been shown to have long-term impacts on caribou migration. The extent, timing, and routing of caribou migration is likely affected by multiple factors, including weather, climate change, the Red Dog Mine Road, and lichen/forage availability. Currently, it cannot be demonstrated that the requested closure alone would result in the desired effect of restoring the historical timing and extent of WACH migration. Non-federally qualified users have been hunting caribou in Units 23 and 26A for decades, and caribou continued to migrate past Unit 23 communities in the fall. Thus, it is unclear why non-local hunting activity would be having an undue effect on caribou migration timing and routing in recent years.

The Board has already closed areas of historically high user conflicts around Noatak village in Unit 23 to caribou hunting by non-Federally qualified users, while national parks and monuments (CAKR, GAAR, KOVA) in the unit are always closed. Testimony from subsistence users and data from GPS-collared caribou indicate delays in caribou crossing the Kobuk River, but not the Noatak River. Therefore, closure of the Federal lands south of the Kobuk River, including Selawik NWR, BELA, and some BLM lands would not affect the timing of caribou migrating between the Noatak and Kobuk Rivers, while most Federal lands north of the Kobuk and south of the Noatak River in Unit 23 (other than the eastern portion of Noatak National Preserve which is north of the upper Kobuk River communities, which are immediately surrounded by State lands) are already closed. Additionally, closure of lands in Unit 26A are not expected to prevent delays in fall migration as these lands are all located north of the Noatak River.

If Units 23 and 26A are closed to the harvest of caribou by non-Federally qualified subsistence users for August and September 2022, user conflicts and disruption of caribou movement may increase on State lands, particularly on those State lands surrounding upper Kobuk River villages. Additionally, non-Federally qualified users would still be able to access and harvest caribou on gravel bars below the mean high-water mark and in navigable waters within Federal public lands as these areas fall under State jurisdiction.

While the Northwest Arctic Council submitted this special action based on concerns over the continuation of subsistence uses rather than conservation concerns, new information became available since the Council's submission in February 2021. Specifically, the 2021 WACH population estimate (188,000 caribou) indicates a 24% decline in the population since the last photocensus in 2019 (244,000 caribou), resulting in the WACH working group voting to reclassify the herd from "conservative" to "preservative" management at their December 2021 meeting. While the WACH working group's management plan recommends possible closure of Federal public lands to non-Federally qualified users under this management level, the WACH working group members did not think immediate regulatory action was necessary (in part due to sufficient calf recruitment). Additionally, non-Federally qualified user harvest accounts for only 5% of the total estimated WACH harvest, and they could still harvest caribou on State managed lands if Federal lands were closed.

Additional Options for Board Consideration

Alternative Geographically Targeted Closure

Expanded Closure Corridor on North Side of Noatak River

During outreach efforts by OSM following deferral of WSA21-01 in 2021, staff asked local subsistence users to weigh in on areas of greatest concern for caribou deflection by transporters and non-local hunters. Although local subsistence users observe aircraft activity and non-local hunting that may be interfering with caribou movement, in general this activity occurs at a distance from communities and local hunting activity. However, responses that were received indicate that any non-local hunting activity on the north side of the Noatak and Kobuk Rivers is considered problematic. Traditional hunting rules dictate that caribou should only be hunted on the south side of rivers and should only be targeted once they have crossed the middle of the river, rather than being shot immediately upon entering the water.

Gravel bars and the rivers themselves would not be affected by a closure, because navigable waters and the area below the "ordinary high-water mark" are under State jurisdiction. The portion of the north side of the Kobuk River occurring on Federal public lands is already protected, as Kobuk Valley National Park is only open to hunting by local resident zone communities. Additional protection of the Kobuk River corridor on State lands would necessitate action through ADF&G's regulatory system.

A targeted closure is already in place along the lower Noatak River within Noatak National Preserve, with a corridor of five miles on either side of the river, but this corridor could be extended on the north side of the upper river. However, it is not known how large a corridor would be considered adequate for protection of herd movement and traditional hunting rules. Furthermore, testimony indicates that concern about the effects of non-local hunters extend to a wider use area than river corridors alone. Future input from Regional Advisory Council members may provide better information on this option. This option would not be adequate for conservation of the WACH. Additionally, GPS-collared caribou data indicate caribou crossings of the Noatak River have not been delayed in recent years.

Close only the Western portion of Noatak National Preserve and Adjacent BLM lands

During OSM outreach efforts, the voices of residents of southwestern Unit 23 communities (Kotzebue, Noorvik, Kiana, Selawik, Buckland, and Deering) were much more prominent than those of residents of the Upper Kobuk River communities of Ambler, Shungnak, and Kobuk. Local subsistence users from the upper Kobuk River communities have indicated that they are having difficulty continuing their subsistence uses for caribou. However, when feedback from upper Kobuk River communities was received (e.g., at public hearings, during phone calls with WACH Working Group members, and in discussion with SRC members), opinions on the closure were mixed.

As upper Kobuk River communities are surrounded by State-managed lands, historically they have been more concerned over possible concentration of non-Federally qualified users near their communities if Federal land are closed. The Board may want to consider closing only the western portion of Noatak National Preserve and BLM-managed lands between the Noatak and Kobuk Rivers in order to avoid closing lands immediately north of the upper Kobuk River communities. However, non-Federally qualified users hunt for caribou throughout Noatak National Preserve (and in recent years, especially in the eastern portion as that is where much of the herd has occurred during the fall hunting season), suggesting that the entire Preserve should be closed for the purpose of conserving the WACH and continuing subsistence uses.

Close Key Migration Corridors

Areas of greatest caribou migration density may provide an avenue for identifying candidate Federal public lands for a targeted closure. However, caribou migration pathways shift over time and are shaped by factors such as weather and changing herd size. **Figure 2b** shows fall migration pathways of collared cows from 2002 to 2017. This map shows higher usage by migrating caribou (green) near most of the Unit 23 villages, which aligns with Traditional Ecological Knowledge that caribou have historically passed through the area surrounding villages, and that these villages were in fact established along historical caribou migration routes (e.g., OSM 2021b). One resident of Shungnak identified Howard Pass, on the Northeast edge of Noatak National Preserve, as an area key to the passage of caribou through the region, which is also an area of relatively high hunting activity for non-locals; this also appears to correspond with an area of

concentrated migration in **Figure 2b**. However, **Figure 2b** suggests that caribou are *successfully passing through* (or were during the study period 2002-2017) despite non-local hunting activity. An updated map of areas of high migration use is not available at this time.

Since 2017, there has been a geographically targeted closure for caribou hunting by non-Federally qualified subsistence users along the Noatak River, and within the Eli, Agashashok, and Squirrel River drainages. Attempts were made during outreach to local subsistence users to identify key areas of concern for a similar targeted closure. However, the concerns behind the current closure request, deflection and interruption of caribou movement by non-local hunters, transporters, and associated air traffic, are more diffuse in geographic scope, and may not lend themselves to a targeted closure in the same model as the Noatak targeted closure.

Delegate Authority to Land Managers to Open to Non-Federally Qualified Users After the Lead Caribou Have Passed Through Communities

Another option that the Board may want to consider is delegating authority to the NPS and BLM to open Federal public lands in Unit 23 to non-Federally qualified users only after the lead caribou migration has passed or communities have been able to harvest a certain amount of caribou. The lands to be included in this delegated authority could include all Federal public lands in Units 23, or only Noatak National Preserve and BLM-managed lands between the Noatak and Kobuk Rivers only (excluding the current Noatak corridor closure), or only the western portion of Noatak National Preserve and BLM-managed lands between the Noatak and Kobuk Rivers (excluding the current Noatak corridor closure). This option would have the advantage of responding to yearly variability in caribou migration timing and avoiding keeping Federal public lands closed unnecessarily after caribou have become available to Federally qualified subsistence users in the southwestern portion of Unit 23.

Challenges to this alternative include development of criteria for determining what the threshold for opening would be, and how to determine when this threshold has been met. Furthermore, the NPS already has a Delayed Entry Zone in the western portion of Noatak National Preserve, which is in place until September 22 (see page 17 and **Map 4**). The Delayed Entry Zone prohibits transportation of non-local caribou hunters into this area prior to this date. The end date for the delayed entry zone was extended in 2020 in response to requests from the Cape Krusenstern National Monument and Kobuk Valley National Park SRCs and the Native Village of Noatak, to accommodate later caribou migration dates. However, NPS staff have indicated this zone has not always worked as intended due to migration variability.

Non-Regulatory Alternatives

Regardless of the course of action selected, the Board may want to consider supporting land managing agencies as they seek to improve collection, accessibility, and sharing of data regarding where and when Federal public lands are used by transporters, guided clients, and non-local hunters. This would in turn contribute to ongoing evaluation of any correlation and causation between this activity and herd deflection, as tracked through collaring data. Increased transparency about where and when aircraft are traveling for hunting could also significantly de-escalate tension between user groups.

In Northwest Arctic Council testimony, and during OSM's outreach to local subsistence users, the issue of lack of respect for traditional rules for hunting caribou was repeatedly raised. These rules include letting the leader pass and hunting on the south side of rivers only. Additional concerns centered on disrespect for caribou, disrespect for local residents and hunters, and a focus on trophy hunting in a time of food scarcity and insecurity for local communities. Traditional hunting rules could be encoded in land manager regulations but may be difficult to enforce. NPS already has stipulations pertaining to Commercial Use Authorizations for Western Arctic Parklands (**Appendix 1**).

ADF&G already requires that any pilot transporting parts of big game with an aircraft in Unit 23 have a certificate of successful completion of training regarding acceptable practices for hunting and transporting meat in the unit. They also provide *optional* Unit 23 hunter orientation materials. ADF&G pilot training and hunter orientation materials are included in **Appendix 3**. Individual Federal land-managing agencies could require transporters, guides, and non-Federally qualified users to undergo training in traditional hunting rules before being allowed to hunt on the land they administer, if found to be within their authority. This training could be developed in cooperation with the Northwest Arctic Council, or could build on the pilot training and hunter orientation already available through ADF&G.

Attempts to mitigate user conflicts in Unit 23 have already been implemented by Federal land managers, ADF&G, and the Federal Subsistence Board. These include: the NPS Delayed Entry Zone in Noatak National Preserve and stipulations on Commercial Use Authorizations (**Appendix 1**), ADF&G Noatak Controlled Use Area and Unit 23 required pilot training and optional hunter orientation (**Appendix 3**), Selawik NWR "Area not Authorized for Commercial Transporters and Guides," and the Board's targeted Federal lands closure in Unit 23. Controlled Use Area dates have been extended to accommodate the delayed caribou migration under both State and Federal regulations: in 2009 the Noatak Controlled Use Area dates were changed to Aug. 15-Sep. 30, and in 2020 the Noatak National Preserve Delayed Entry Zone date was changed to Sep. 22.

However, more can still be done by individual Federal agencies as well as ADF&G to further address user conflicts. Other possible agency actions include establishing new Controlled Use Areas in zones where caribou migration may be deflected, modifying the dates or extent of the NPS Delayed Entry Zone, further restricting the number and activities of permitted transporters and guides, increased enforcement of existing stipulations, and additional education and outreach.

A non-resident caribou hunt remains open in Units 23 and 26A. At the current preservative declining management level, the WACH Working Group management plan recommends that "Harvest [be] restricted to residents only, according to state and federal law" (**Table 5**). The Board could encourage the Northwest Arctic Council to submit a proposal to the Alaska Board of Game to close the State hunt in Unit 23 to non-resident hunters. An additional proposal could be submitted to adjust and expand limitations to air traffic in Unit 23. The Board could also encourage ADF&G to improve information sharing with subsistence hunters about known progress of the migration on a real-time basis. This would mitigate wasted fuel and time spent (as well as risks to personal safety incurred) looking for caribou before they are in the area. Finally, the Board could encourage the Northwest Arctic Council to submit a proposal to the Board of Game to improve the optional hunter orientation and make it mandatory for all non-local hunters operating in Unit 23.

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APPENDIX 1

Stipulations and special conditions for operating on Federal public lands in Units 23 and 26a

WESTERN ARCTIC NATIONAL PARKLANDS

Cape Krusenstern National Monument
Kobuk Valley National Park
Noatak National Preserve

(These Stipulations do not apply to Bering Land Bridge National Preserve)

Park-Specific Stipulations 2021

MANAGEMENT FEE

1. A $100 per year management fee will be applied for use of one or more units of Western Arctic National Parkland. Management Fees are non-refundable and due at the time of application for each year of the authorization.

GENERAL

2. Commercial activities are limited to a maximum party size of ten (10) persons, including CUA holders' employees, unless authorized by the Superintendent

3. CUA holders shall inform clients about traditional hunting practices in the park, preserve and monument and the importance of respecting these local traditions utilizing educational materials provided by the NPS.

4. Do not interfere with people engaged in subsistence activities. Do not disturb camps, allotments and/or subsistence gear.

5. Archeological, Cultural and Paleontological resources, including human remains, are protected under the Archeological Resource Protection Act (ARPA) and Paleontological Resource Protection Act (PRPA). Disturbing, defacing and unpermitted excavation or removal is illegal.

    a. *If human remains are encountered, do not disturb them. If possible, note the location with GPS coordinates or on a map. Contact WEAR at (907) 442-3890 as soon as possible.*

6. Except in case of emergency, the use of ranger patrol cabins or other shelter cabins in support of commercial activities is prohibited.

WILDLIFE

7. The CUA holder must take adequate precautions to prevent wildlife (especially bears) from associating humans with food, pursuant to the Superintendent's Compendium and Title 36 of the Code of Federal Regulations, 2.10(d).

WASTE MANAGEMENT

8. The CUA holder must remove all trash and garbage generated by their activities within the park.

LANDS / CAMPING

9. Permanent or semi-permanent camps are not allowed. All camp improvements must be dismantled and removed after each client.

10. Dead wood on the ground may be used for campfires. Except in the case of life threatening emergency, no wood may be cut from living plants.

AVIATION/TRANSPORTING

11. Holder is prohibited from dropping off or picking up non-Federally qualified subsistence caribou hunters within the *Restricted Commercial Use Area* in the western Noatak National Preserve in accordance with attached map prior to September 22nd, unless otherwise authorized by the Superintendent.

12. Each CUA holder's clients/groups present in the park units at the same time must be at least five miles apart from each other and attempt to stay five miles from other transporter camps.

13. Utilization of landing areas or airstrips is at the pilot's discretion. No improvements to or enlargements of existing landing sites and gravel bars are allowed. The construction of new landing areas is prohibited.

14. When transporting hazardous materials, the CUA holder will use a USDOT approved container and packaging and follow the hazmat guidelines for safe handling, transportation and storage. The CUA holder must carry a spill kit onboard each aircraft that includes absorbent pads, a shovel and doubled plastic bags to remove and transport contaminated material when transporting hazardous material.

15. Loading or unloading passengers or cargo from aircraft must be done only when engine(s) are completely shut down. "Hot loading" or "hot unloading" of passengers or cargo is prohibited.

REPORTING

16. All licensed Big Game Transporters must submit copies of their State of Alaska Big Game Commercial Services Board Transporter Activity Reports (Form #08-4349). Location coordinates must be included on each report. Reports must be submitted via email to akr_activityreports@nps.gov on or before November 15th.

17. Activity reports must be completed using the Excel spreadsheet available on the Alaska Region CUA website: https://www.nps.gov/locations/alaska/activity-reporting.htm. Air Taxi Operators, Big Game Transporters, and Incidental Hunt Transporters must report on the National Park Service (NPS) Activity Report, all transportation, including transportation provided to hunters, their equipment or game. Operators must list the GPS coordinates and minor drainage of drop off and pick up locations for all clients, and the number of each species harvested (if applicable).

    a. All reports must be submitted electronically to akr_activityreports@nps.gov by November 15th.
    b. If the CUA holder did not operate in Western Arctic National Parklands, an Activity Report stating **"did not operate"** must be submitted. Exceptions to this requirement must be requested in writing from the Superintendent.

18. Aircraft incidents and accidents must be reported immediately to the NPS.

SPECIAL CONDITIONS (SELAWIK NATIONAL WILDLIFE REFUGE)

Air Taxi/Big Game Transporter Services

Special Use Permit No. 75625-2102

1. The Permittee is responsible for accurate record keeping throughout the permit period and shall provide the permitting agency with a comprehensive report by **December 31**. The report will contain:
    - The phone number, names, and addresses of clients guided; dates; number of client days; and game animals taken.
    - The drop-off and pickup locations must include latitude and longitude along with description (e.g. 67º 12.50' N 159 º34.300W, on the NE corner of the unnamed lake.)

    The permittee may submit his/her State of Alaska Transporter Activity Report as long as longitude and latitude coordinates are included to meet this permit condition.

2. The use of off road vehicles is prohibited with the exception of snowmobiles. Snowmobiles may be used when adequate snow cover exists to prevent scarring of underlying vegetation.

3. One fuel cache of up to 30 gallons for emergency use may be established on Federal lands. Secondary containment is required. The name, address and contact phone number of the permittee must be marked on each fuel container. Any deviations from this requirement must be pre-approved by the issuing official.

4. Use of refuge lands in close proximity to or intermingled with, private lands in the northwest portion of the refuge (west and north of latitude 66 degrees 28.63 minutes and longitude 159 degrees 24.67 minutes) is not authorized. A map of the area is provided with the approved permit and the legal description of the area is available upon request.

5. The operation of aircraft at altitudes and in flight paths resulting in disturbance to subsistence hunters and other users of the refuge is prohibited. It is recommended that all aircraft, except for take-off and landing, maintain a minimum altitude of 2,000 feet above ground level (AGL).

Failure to abide by any part of this special use permit; violation of any refuge related provision in Titles 43 (Part 36), (2930) or 50 (Subchapters B and C), Code of Federal Regulations; or violation of any pertinent state regulation (e.g., fish or game violation) will, with due process, be considered grounds for immediate revocation of this permit, could result in denial of future permit requests for lands administered by the permitting Federal agency, and may result in the issuance of a notice of violation and fines. This provision applies to all persons working under the authority of this permit (e.g., assistants).

1. Failure to abide by any part of this special use permit; violation of any refuge related provision in Titles 43 (Part 36) or 50 (Subchapters B and C) Code of Federal Regulations; or violation of any pertinent state regulation (e.g., fish or game violation) will, with due process, be considered grounds for immediate revocation of this permit and could result in denial of future permit requests for lands administered by the U.S. Fish and Wildlife Service. This provision applies to all persons working under the authority of this permit (e.g., assistants). Appeals of decisions relative to permits are handled in accordance with 50 Code of Federal Regulations 36.41.

2. The permittee is responsible for ensuring that all employees, party members, aircraft pilots, and any other persons working for the permittee and conducting activities allowed by this permit are familiar with and adhere to the conditions of this permit.

3. NA

4. Any problems with wildlife and/or animals taken in defense of life or property must be reported immediately to the refuge manager and Alaska Department of Fish and Game, and be salvaged in accordance with State regulations.

5. The permittee and permittee's clients do not have the exclusive use of the site(s) or lands covered by this permit, except for the authorized camp facilities.

6. This permit may be cancelled or revised at any time by the refuge manager in case of emergency (e.g., high fire danger, flooding, unusual resource problems, etc.).

7. NA

8. The permittee shall maintain comprehensive general liability insurance ($300,000 each occurrence, $500,000 annual aggregate) throughout the use period specified on the permit, with the Fish and Wildlife Service named as coinsured.

9. NA

10. The permittee is responsible for accurate record keeping. By December 31 each year, the permittee must provide the refuge manager with a client use report showing the number of

clients; the dates each client was on the Refuge; the species each client hunted; and the number of each species harvested. The permittee must also provide a legible copy of the State's "Hunt Record" for each client. This report shall be certified by the permittee as being complete and accurate.

11. The Permittee will remit all required annual fees (e.g., client use day, reserved land site) within 30 days after receiving a bill for collection.

12. This permit authorizes use on State selected lands. If any of these lands are conveyed during the term of this permit, the permittee will no longer be authorized to use those State lands, and must seek authorization from the Alaska Department of Natural Resources. For permits issued for multiple years, it is the responsibility of the permit holder to re-check land status with the permitting office to ensure selected lands authorized for use under this permit continue to remain under the jurisdiction of the U.S. Fish and Wildlife Service.

13. This permit authorizes use of the Native selected lands. If any of these selected lands are conveyed during the term of this permit, the permittee will no longer be authorized to use those lands. For permits issued for multiple years, it is the responsibility of the permit holder to re-check land status with the permitting office to ensure selected lands authorized for use under this permit continue to remain under the jurisdiction of the U.S. Fish and Wildlife Service.

14. In accordance with the Archaeological Resources Protection Act (16 U.S.C. 470ee), the removal or disturbance of archeological or historic artifacts is prohibited. The excavation, disturbance, collection, or purchase of historical or archaeological specimens or artifacts on refuge lands is prohibited.

15. Permittees shall maintain their use areas in a neat and sanitary condition. Latrines must be located at least 150 feet from springs, lakes, and streams to avoid contamination of water resources. All property (except cabins and/or tent frames) and garbage associated with the permitted activity must be removed from refuge lands upon departing for the season.

16. The construction or clearing of landing strips or pads is prohibited. Incidental hand removal of rocks and other minor obstructions may be permitted.

17. The use of off-highway vehicles is prohibited unless specifically authorized in writing in this permit.

18. The operation of aircraft at altitudes and in flight paths resulting in the herding, harassment, hazing, or driving of wildlife is prohibited. It is recommended that all aircraft, except for take- off and landing, maintain a minimum altitude of 2,000 feet above ground level (AGL).

19. Aircraft use must be conducted in accordance with the authorized plan of operation, and in compliance with FAA regulations. All aircraft being used in a commercial guiding operation must have 12 inch identification numbers in easily visible contrasting colors.

20. Construction of cabins or other permanent structures is prohibited.

21. The permittee's operation plan, as amended and accepted by the U.S. Fish and Wildlife Service, is hereby incorporated in its entirety as a special condition. All deviations from the operations plan must receive prior written approval by the Refuge Manager or his designee.

22. Any action by a permittee or the permittee's employees which unduly interferes with or harasses other refuge visitors or impedes access to any site is strictly prohibited. Examples of prohibited acts include, but are not limited to, low flights over camps or persons at less than 500 feet (unless landing), parking aircraft or placing other objects (rocks, tents, etc.) on any

area so as to restrict landing use by other aircraft or persons, and the placement of ghost camps (i.e., unoccupied tents) to falsely indicate the use of an area.

23. Fuel storage sites must be approved in advance by the Refuge Manager. Preparations to prevent and respond to a fuel spill must be fully adequate at all sites for the amount of fuel stored on site.

24. All food and garbage will be secured in a manner that minimizes attraction to wildlife and must be removed from the field before vacating the site for the season.

25. As soon as practicable, but in no case to exceed 30 days, the permittee shall notify the refuge manager of any state or federal fish or wildlife related violations by the permittee or persons employed by the permittee as a guide or assistant guide (if known to the permittee), who have been convicted, pled nolo contendere, forfeited collateral, or had a guiding license suspended or revoked. Notification is required for violations without regard to where they occurred.

26. As soon as practicable, but in no case to exceed 30 days, the permittee shall notify the refuge manager of any accidents or other safety related incidents associated with permitted activities on the refuge. Reportable incidents include those that result in a death or physical injury requiring immediate medical attention beyond basic first aid, or that involve significant property damage or loss.

APPENDIX 2

Transporter and Guide Activity on Federal Public Lands in Units 23 and 26A: National Park Service, continued

Number of Commercial Use Authorization Flights

At times, the NPS has reported on the estimated number of Commercial Use Authorization flights into NPS-managed lands. However, there are limits to what the reported data can tell us. Currently, Commercial Use Authorization holders generally report one entire party of clients transported to and from the same location on one form: the form only accounts for one drop-off and one pick-up roundtrip flight. The NPS staff estimate of flights are based on the inference that two round-trip flights took place (one for drop-off and one for pick-up) no matter the size of the specific party.

Complicating matters, many "drop-off" flights, may stop during their return flight and pick up other clients from different parties that are leaving the field; this is common practice. In such cases, this "pickup" flight would be reported separately, but may in fact not be an entirely separate flight, thus having an impact on these numbers whereby fewer actual flights occurred. The actual numbers of flights cannot be determined without further research. In order to report a more accurate number of flights, further analysis of TARs and NPS Activity Reports and discussions with individual Commercial Use Authorization holders to better understand their flight practices is required.

Estimated Number of Animals Harvested via Clients Transported to Field by Commercial Use Authorization holders and Concessionaire: Noatak National Preserve only

This data does not apply to CAKR or KOVA, as only resident zone communities are allowed to hunt in those park units. These users are not permitted to be transported by aircraft to parks or monuments for hunting purposes. This data does not include animals harvested by Federally qualified subsistence users.

Because reporting forms since 2014 require the species and estimated weight to be reported rather than the actual number of animals, a preliminary attempt to more accurately account for total number of animals harvested was inferred based on the reported transported weight of each species. In many cases, transporters and guides actually list the number of animals transported in lieu or in addition to the weight. In such cases, the actual number count that was reported was used. This inference only applied to caribou, as grizzly, wolf, and moose taken were negligible in comparison and more obvious as individual counts, either by directly reporting the individual animal or by the residency status present in the group.

It is acknowledged that this method of number count inferred by transported weight has a margin of error, and that a more accurate capture of these numbers can be achieved by comparing TARs against individual hunts and Harvest Reports, available only by request through the State of Alaska. This is planned but will take further effort to investigate.

Species	2018	2019	2020
Wolf	2	2	1
Moose	1	5	1
Caribou	99	154	216
Grizzly	4	6	3

Estimated animals harvested by non-Federally qualified users: Commercial Use Authorization holder-transported. Derived from reported game weight (Atkinson 2022, pers. comm.).

Species	2018	2019	2020
Wolf	2	2	1
Moose	1	5	1
Caribou	99	154	216
Grizzly	4	6	3

Estimated animals harvested by non-Federally qualified users: guided hunters (Atkinson 2022, pers. comm.). Derived from reported game weight (Atkinson 2022, pers. comm.).

APPENDIX 3

Alaska Department of Fish and Game

Unit 23 Pilot Orientation

Regulation (5 AAC 92.003)

In Game Management Unit (GMU) 23, a pilot may not transport parts of big game with an aircraft without having, in actual possession, a certificate of successful completion of a department-approved education course regarding big game hunting and meat transportation in this Unit. However, this provision does not apply to the transportation of parts of big game between state-maintained airports.

Purpose of This Requirement

As noted in the Unit 23 Hunter Orientation, fall caribou hunting in GMU 23 has been contentious since the early 1980s. The Board received numerous proposals to expand or add new controlled use areas to further prohibit the use of aircraft associated with hunting activities. The GMU 23 Working Group proposed this pilot orientation requirement as an alternative to increased restrictions on non-local hunters. With your cooperation, this program will succeed. If conflicts are not reduced, more restrictive regulations may be required.

The Unit 23 Pilot Orientation and Quiz were designed to minimize user conflicts among local subsistence hunters, visiting hunters, guides and transporters. The purpose of these materials is to minimize the disturbance that aircraft may impose on the landscape, wildlife, and local people. Educating pilots who are either hunting or transporting hunters about ethics for operating aircraft, establishing camps, and hunting game animals is an important step in decreasing conflicts in GMU 23. This orientation deals only with the use of airplanes in off-airfield operations conducted for the purpose of hunting big game animals. It does not address Federal Aviation Administration requirements regarding flight operations.

Pilots who are not transporting big game are not required to obtain certification. However, pilots and anyone else visiting GMU 23 for any outdoor activity are encouraged to complete this orientation. The information we provide here ensures people are knowledgeable about customary practices in GMU 23 and are familiar with ways to minimize user conflicts.

What Do I Have to Do?

The law requires every pilot transporting big game by aircraft outside of state-maintained airports in GMU 23 pass the quiz found on this website with a score of 90% or higher. Once you pass, you will be able to download and print a certificate from a computer. You must sign and date this certificate. The certificate of completion must be on your person when transporting big game by aircraft in GMU 23. Once you have passed the quiz, you will not be asked to take it again. The certification will not expire.

Enforcement

This regulation will be enforced by Alaska Wildlife Troopers and by Federal law enforcement officers. Hunting on federal lands requires hunters to have all necessary licenses and tags required by the State of Alaska. NANA/Purcell security officers enforce trespassing and land use permit requirements on NANA and Borough lands.

Enforcement staff members routinely check licenses, tags, salvage of meat, antlers, cleanliness of camps, land use permits for commercial operators, and trespassing. They can also issue citations for harassment of wildlife or interfering with other hunts.

Next

Land Information

Alaska Department of Fish and Game

Land Information

Maps and Land Status Categories in GMU 23

Land status in GMU 23 is a patchwork of requirements applied by federal, state, borough, and private land managers in this portion of Alaska. To view summaries of land status in GMU 23, please refer to the Bureau of Land Management (BLM) Geospatial PDF maps below. You may print these from your home computer or download them to your mobile device. Depending on the mobile device and the viewer application, you may be able to access special geospatial features. Alternatively, you may contact the BLM office in Fairbanks at 1-800-437-7021 or 907-474-2200 to receive CDs.

- Guide Use Area 1 (*PDF 453 kB*)
- Guide Use Area 2 (*PDF 592 kB*)
- Guide Use Area 3 (*PDF 506 kB*)
- Guide Use Area 4 (*PDF 552 kB*)
- Guide Use Area 5 (*PDF 584 kB*)
- Guide Use Area 6 (*PDF 516 kB*)
- Guide Use Area 7 (*PDF 608 kB*)

More information is available from:

- **Federal:** US Fish and Wildlife Service
  http://alaska.fws.gov/recreation.htm
- **State:** Alaska Department of Fish and Game
  http://www.hunt.alaska.gov
  Alaska Department of Natural Resources (DNR)
  http://dnr.alaska.gov/
- **Borough:** Northwest Arctic Borough Planning Department office (907-442-2500)
  http://www.nwabor.org/planning.html
- **Private:** NANA Regional Corporation, Lands Department
  http://www.nana.com/regional/lands/
  http://www.nanalands.com/plotfiles/regional/trespass.pdf *(PDF file 2.1 MB)*
  http://www.nanalands.com/website/nanalands/viewer.htm

Hunting on Federal Lands

If you will be hunting on federal lands, you must consult the federal regulations for the harvest of wildlife on federal public lands in Alaska.

Bureau of Land Management (BLM) and US Fish and Wildlife Service (USFWS) lands are generally open to all (i.e., local and nonlocal) hunters. Please contact the Kotzebue office of each agency (BLM 907-442-3430; USFWS 907-442-3799) to see if current hunting restrictions exist and to get any needed federal permits.

National Park Service (NPS) land consists of parks, preserves and monuments. Hunting is generally allowed by resident (local and Alaska) and nonresident (out of state) hunters on national preserves; however, hunting is controlled by both state and federal regulations. Contact the Kotzebue NPS (907-442-3890) or ADF&G (907-442-3420) for information on hunting in the Noatak National Preserve. NPS parks and monuments are closed to hunting by the general public and are open only to federally qualified subsistence users, defined as residents of:

> Communities and areas near a national park or monument which contain significant concentrations of rural residents who, without using aircraft as a means of access for purposes of taking fish or wildlife for subsistence uses, have customarily and traditionally engaged in subsistence uses within a national park or monument.

Please check the current regulations for communities and areas that qualify for the subsistence resident hunts.

Guides, Air Taxis and Transporters

The Squirrel River area is of special interest to BLM and has been identified as a "Special Recreation Management Area". Commercial aircraft must obtain a transporter permit to land on BLM-managed lands in the Squirrel River Special recreation Management Area. Guides must obtain a permit from the BLM for any use of BLM lands.

USFWS requires permits for all guides, air taxis and transporters operating in the Selawik National Wildlife Refuge. You can download the permit application off of the USFWS website. All pilots should be aware that large tracts of private land exist within the refuge boundary and that these lands are not open to the public.

NANA Regional Corporation and Kikiktagruk Inupiaq Corporation (KIC) Land Use Policies

NANA lands are closed to all non-shareholders for any purpose. However, non-shareholders whom have lived in NANA communities for a minimum of five years may apply for a permit to use NANA lands. For more information on land use policies, contact NANA at 907-442-3301 or read about NANA Regional Corporation Land Use Policies.

KIC Land Department has land-use policies in place to protect the corporation's resources and regulate use by non-shareholders. To obtain more information about shareholder and non-shareholder land-use policies, please contact the KIC Land Department in Kotzebue at 907-442-3165.

Noatak Controlled Use Area

The Noatak Controlled Use Area (CUA; 5AAC 92.540 [9]) consists of that portion of Unit 23 in a corridor extending five miles on either side of, and including the Noatak River, beginning at the mouth of the Noatak River, and extending upstream to the mouth of Sapun Creek. The Noatak CUA is closed from August 15 through September 30 to the use of aircraft in any manner for big game hunting, including the transportation of big game hunters, their hunting gear, or parts of big game; however, this provision does not apply to the transportation of big game hunters, their hunting gear, or parts of big game to and between publicly owned airports. Pilots and passengers not hunting big game may utilize the CUA for other purposes.

The big game species affected by the Noatak CUA include: bear (brown or black), caribou, moose, muskox, sheep, wolf and wolverine. Aircraft access is only allowable to and from the state-maintained airport at the village of Noatak when hunting these species. During the aircraft closure period, hunters can fly into or out of the Noatak airport then access the CUA by any means other than aircraft.

Introduction

Aircraft Use

Alaska Department of Fish and Game

Aircraft Use

Airstrips: Landing and Takeoff

The construction of landing strips or pads is prohibited, unless properly permitted by the Northwest Arctic Borough (NWAB) under its zoning ordinance Title 9 and federal (USFWS, NPS, BLM) or state (DNR) landowner agencies. Incidental removal of rocks and other minor obstructions may be allowed for existing landing areas, with landowner permission.

In order to reduce noise and nuisance, aircraft pilots are advised to not take off, land or drop off clients within 1.5 miles of other camps or on lakes where camps are already established. The permittee is encouraged to notify adjacent camps of activities to reduce potential user conflicts.

The GMU 23 User Conflict Working Group also recommends all pilots use measures to minimize noise, nuisance, safety, health and user conflicts affecting surrounding residential and camp properties, including minimizing excessive noise, fumes, odors, smoke, vibration, dust, litter, and waste.

Aircraft Minimums

To minimize disturbing residential and camp properties, aircraft operators should maintain a minimum altitude of two thousand (2000) feet in the vicinity of such properties unless required by weather, emergencies, or if taking off or landing.

Pilots should use flight measures to avoid or minimize disruption to caribou (especially lead animals in groups), birds, and other wildlife groupings or migrations. Recommended flight measures include: providing adequate lateral separation distances from herds and flocks, not circling herds or flocks, flying at altitudes high enough to reduce noise and disturbance, limiting the number of flights per day, and temporarily suspending flight operations to stop disturbances to wildlife.

Archaeological Resources

The pilot and passengers must not disturb any archaeological, prehistoric, historic or cultural resources during the flying/landing activities. In the event that such resources are disturbed, the pilot shall immediately contact the Planning Director at the Northwest Arctic Borough or the National Park Service.

Fueling

Fuel storage and fueling operations are regulated by state, federal and private land management authorities. It is your responsibility to be aware of all legal requirements and to ensure that fuel is not spilled or leaked into waterways or other natural areas. All fuel/oil/hazardous substance storage servicing and fueling operations are prohibited within one hundred (100) feet from any shoreline, river, drainage channel, slough and/or lake. Float planes are encouraged not to fuel away from established fueling stations. If a spill does occur, it must be reported immediately to the Alaska Department of Environmental Conservation.

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Land Information

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Reducing User Conflicts

Alaska Department of Fish and Game

Reducing User Conflicts

Residents and subsistence users of GMU 23 have long had concerns about hunting traffic and aircraft operations during fall migration hunting. These concerns revolve around four major themes: noise, diverting animals from traditional migration routes, campsites that are not kept clean, and camp locations that compete with local users. The following section lists some of these concerns and recommends actions pilots can take to help minimize these problems.

1. **Concern:** Residents of Kotzebue find the constant noise from many take-offs each day objectionable.
   Suggested Action: Whenever possible avoid early morning and late evening departures and use arrival and departure routes that best avoid homes and businesses.
2. **Concern:** Local hunters who live or have camps between Kotzebue and high airplane use areas, e.g. the Squirrel, Agashashok (Aggie), or lower Selawik rivers, object to the high number of overhead flights during the fall.
   Suggested Action: Fly routes that avoid established camps and other hunters.
3. **Concern:** Pilots fly low over the main stem of major rivers and tributaries during fall migration. At this time, local hunters are restricted to large rivers in their boats. Local hunters object to the noise and feel that it scares animals away from the river corridors where they hunt.
   Suggested Action: As safety permits, fly high or around major river corridors.
4. **Concern:** Pilots circle animals or other hunters at low altitudes to get a better look, scaring animals away from hunters on the ground and diverting animals from traditional migratory routes.
   Suggested Action: Do not circle groups of animals or "scout" for animals with aircraft.
5. **Concern:** Pilots focus their efforts on migration corridors. Local hunters feel this can disrupt the migration and divert caribou away from traditional hunting areas.
   Suggested Action: Avoid flying low on migration corridor routes. Also, during fall migration, avoid flying on the northern side of rivers that run east and west; this allows animals to cross the river without diverting migration.
6. **Concern:** Pilots do not allow the vanguard (lead animals) of the caribou migration to establish trails through subsistence hunting areas before starting to hunt animals for themselves and their clients. This diverts caribou away from local users.
   Suggested Action: Avoid flying around or near the first animals in a group or herd. Allow the leaders to establish a trail and the migrating herd will follow.
7. **Concern:** Commercial operators using aircraft insert camps into available landing sites in specific areas, thus precluding access by other users.
   Suggested Action: Avoid high concentrations of hunters and maintain a distance of at least 1.5 miles between camps.
8. **Concern:** Hunters being flown in to hunt are not advised about the need to leave camp sites clean, and transporters put too many clients in the same camp locations. This results in trash being left behind and other evidence of heavy use.
   Suggested Action: Leave no trace.
   - Leave a clean camp
   - Remove all garbage
   - Burn toilet paper and bury human waste in holes six to eight inches deep at least 200 feet from water and camps; cover and disguise hole when finished.
   - Don't leave "extra" plastic tarps in the field
   - Dismantle fire rings, field table, game poles, and all site modifications
9. **Concern:** Pilots compete with local residents for choice hunting areas along major rivers especially when caribou are scarce.
   Suggested Action: Fly routes that avoid established camps and other hunters.
10. **Concern:** Non-shareholders trespass on native lands and allotments.
    Suggested Action: Land status maps should accompany hunters and guides in the field, information regarding landownership should be obtained prior to going into the field, and all permits need to be in possession of the transporters and hunters.
11. **Concern:** Hunters are not properly taking care of meat in the field.
    Suggested Action: Hunters should follow procedures to appropriately care for their meat. In the event weather conditions change and meat care becomes difficult, consider carrying a satellite phone. Satellite phones help ensure safety but also provide an opportunity to arrange for meat pick-up without having to wait until the end of a hunt.
12. **Concern:** Unwelcomed meat is left in Kotzebue.
    Suggested Action: Have a plan for what you will do with your meat once you leave the field and make this plan prior to hunting.

If you are taking meat home with you, make arrangements ahead of time for how it will be shipped and have the proper storage containers ready. If you plan on donating your meat to a resident in one of the villages or Kotzebue, make arrangements prior to hunting and fill out a transfer of possession form in the back of the ADF&G hunting regulations book.

To best avoid conflicts, be respectful and considerate of others using the outdoors, respect local customs and traditions, avoid unnecessary noise and garbage pollution, and hunt and fly in an ethical manner.

For more information on how to have a successful and enjoyable hunt, and ensure that your actions and meat care, including any intended meat donations, meet the requirements of the law, see our general information on hunting and information specific to hunting in Unit 23.

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Unit 23 Pilot Orientation Quiz

1: To minimize transport disturbance to surrounding residential and camp properties, it is recommended that aircraft maintain a minimum altitude of ___ feet in the vicinity of camps or communities unless required by weather, emergencies, or if taking off or landing.

A. ☐ 5000 feet
B. ☐ 2000 feet
C. ☐ 1000 feet
D. ☐ 500 feet

2: Low-flying aircraft may disturb caribou and alter migration routes. How can a pilot best avoid user conflicts and disturbing animals?

A. ☐ Fly high or around major river corridors, as safety permits.
B. ☐ Do not circle groups of animals or scout animals with aircraft.
C. ☐ Avoid flying low on migration corridors or on the north side of rivers that run east and west.
D. ☐ Do not fly around or near the first group of animals you see.
E. ☐ All of the above.

3: Which of the following lists shows the species for which hunting is restricted within the Noatak CUA?

A. ☐ Caribou, bear, moose, fish, ptarmigan, and ducks
B. ☐ Caribou, bear, moose, muskox, sheep, wolf, and wolverine
C. ☐ Caribou, bear, moose, muskox, sheep, wolf, wolverine, and birds
D. ☐ Caribou, bear, and moose

4: If a fuel spill occurs, it must be

A. ☐ Reported immediately to the Alaska Department of Environmental Conservation
B. ☐ Reported immediately to the U.S. Environmental Protection Agency
C. ☐ Ignored and covered up with rocks
D. ☐ Cleaned up as best as possible with no need to tell the land owner/manager

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5: To avoid trespassing on Native allotments and lands, it is a good idea to:

A. ☐ Carry land status maps with you while transporting hunters and while hunting.
B. ☐ Become familiar with and ask questions about the land status in the area you plan to hunt prior to going in the field.
C. ☐ Be certain to have all proper permits for the areas you wish to hunt.
D. ☐ All of the above choices are good ways to avoid trespassing.

6: The construction of landing strips is prohibited, unless properly permitted by the Northwest Arctic Borough under Title 9 or by federal or state landowners.

A. ☐ False
B. ☐ True

7: In the event that a pilot disturbs any archaeological, prehistoric, historic or cultural resources during the flying/landing activities, the pilot shall immediately contact the:

A. ☐ Alaska Department of Fish and Game
B. ☐ Historical Society
C. ☐ Planning Director at the Northwest Arctic Borough and the National Park Service
D. ☐ None of the above

8: What are the best practices to follow when vacating a camp site?

A. ☐ Leave some supplies for the next group; they would appreciate the donation.
B. ☐ Don't worry about leaving some types of biodegradable items.
C. ☐ Leave no trace: Leave a clean camp, remove all garbage, burn toilet paper, bury human waste, and dismantle all site modifications.
D. ☐ Don't worry too much: When the river rises in the spring, all garbage will be carried away.

9: Which of the following statements is true?

A. ☐ Pilots transporting parts of big game other than between state-maintained airports in GMU23 are required to obtain certification by passing this test prior to flying in the region.
B. ☐ Every pilot flying in GMU 23 is required to obtain certification by passing this test prior to flying in the region.

10: All fuel/oil/hazardous substance storage servicing and fueling operations are prohibited within ___feet from any shoreline, river, drainage channel, slough and/or lake.

A. ☐ 1000 feet
B. ☐ 500 feet
C. ☐ 100 feet
D. ☐ 50 feet

11: What is the appropriate minimum distance to maintain for camp separation?

A. ☐ 0.5 miles
B. ☐ 1.5 miles
C. ☐ 2.0 miles
D. ☐ 4.0 miles

12: Which of the following represent ways in which a pilot can minimize disrupting other hunters?

A. ☐ Minimize activity close to established camps or migratory areas.
B. ☐ Utilize measures to avoid noise and nuisance to local properties and other hunters in the field.
C. ☐ All of the above
D. ☐ None of the above

13: What are the major land status categories that occur in GMU 23?

A. ☐ Native lands
B. ☐ State lands
C. ☐ Federal lands- USFWS (National Wildlife Refuge System), National Park System- parks, monuments, or preserves; Bureau of Land Management
D. ☐ Private lands
E. ☐ All of the above

14: The Noatak Controlled Use Areas is closed for the purposes of hunting big game species with aircraft; what is the timing window for this closure?

A. ☐ August 1 to September 30
B. ☐ August 15 to September 30
C. ☐ At all times
D. ☐ August 15 to October 15

15: What Federal lands are open to hunting for the general public?

A. ☐ BLM and USFWS
B. ☐ BLM, USFWS, NPS (parks, preserves, and monuments)
C. ☐ BLM, USFWS, NPS (preserves)
D. ☐ None of the above

16: As a pilot and hunter in GMU 23 it is important for me to remember:

A. ☐ To use my airplane in any way necessary to increase hunting success for myself and others.
B. ☐ To be respectful and considerate to the land and people in GMU 23 when operating an aircraft or hunting; this includes minimizing disturbance around camps, subsistence users and animals to avoid user conflicts.

17: In order to reduce noise and nuisance when taking off, it is recommended that airplanes be at least how far away from existing camps?

A. ☐ 500 feet
B. ☐ 1 mile
C. ☐ 1.5 miles
D. ☐ 5 miles

18: To avoid leaving unwelcomed meat in Kotzebue, you are advised to:

A. ☐ Leave it at the airport; someone will come and get it.
B. ☐ Have a plan, prior to hunting, of what you will do with your meat. This includes planning ahead for how to ship your meat home, or fill out a transfer of possession form with the specific local individual who will take your donated meat.
C. ☐ Eat what you can and leave the rest in the field.
D. ☐ Ship it all home, no exceptions.

19: What Federal lands are only open to local subsistence hunters?

A. ☐ BLM and USFWS
B. ☐ NPS parks and monuments
C. ☐ BLM, USFWS, NPS (parks, preserves, and monuments)
D. ☐ None of the above

20: After passing this test, where should your certificate be located and when should you have it available?

A. ☐ The certificate should be with the pilot (i.e, on your person), and be available when transporting parts of big game animals.
B. ☐ The certificate should be located in my aircraft and available when hunting.
C. ☐ As long as I have the certificate, I do not need to carry it with me.

21: Where can you learn about the land status for an area you wish to hunt?

A. ☐ BLM Alaska website
B. ☐ PDF maps in this pilot orientation
C. ☐ Federal and State regulations booklets online or in a local office
D. ☐ NANA regional corporation website
E. ☐ All of the above

22: Which of the following represents a better operating practice to avoid or minimize disrupting wildlife?

A. ☐ Flying low to get a better view of migrating herds or groups of animals and landing close to migration routes to increase accessibility to animals.
B. ☐ Avoiding circling around herds or flocks, flying at altitudes high enough to reduce noise and disturbances, limiting the number of flights per day, landing away from migration routes, or temporarily suspending transport operations if necessary.

23: NANA and KIC lands are:

A. ☐ Closed to all non-shareholders, no exceptions
B. ☐ Closed to all non-shareholders not obtaining a land use permit
C. ☐ Open to shareholders and non-shareholders

24: The following is a suggested course of action to avoid creating constant noise disturbance when operating aircraft.

A. ☐ Whenever possible, avoid early morning and late evening departures and use arrival and departure routes that best avoid homes and businesses.
B. ☐ Fly routes that avoid established camps and areas where people are hunting.
C. ☐ Both answers a and b

Submit Answers

Unit 23 Hunter Orientation

Fall caribou hunting in Game Management Unit (GMU or Unit) 23 in northwest Alaska has been the subject of conflict since the early 1980s, particularly between local hunters, non-local hunters and commercial operators (e.g., guides, transporters). Currently no conservation concern exists for the area's wildlife; the caribou population is healthy and hunting regulations have been modified to protect other species such as moose and sheep, which now occur at low densities and cannot sustain liberal hunts. Even so, local hunters and other residents have been concerned about high numbers of visiting hunters, the perception that they may be affecting hunting success in some areas, and the need for visiting hunters to respect traditional values and practices. Non-local hunters want access to public land and to have quality hunting experiences. Meanwhile, commercial guides and transporters want to be able to offer quality experiences to clients and operate profitable businesses.

Over the years, the Alaska Board of Game (Board) and Alaska Department of Fish and Game (ADF&G) listened to concerns from local subsistence hunters about the disruption of customary hunting practices by non-local hunters and associated aircraft activities. Together, these entities have undertaken several actions to try to alleviate conflicts.

The Board supported formation of a multi-stakeholder Unit 23 Working Group and planning process. One result of the process was a Board-passed regulation which requires pilots transporting parts of big game to take a pilot orientation and quiz, and carry a certificate with them while operating in Unit 23.

At the Board's request, ADF&G provides nonlocal hunters with orientation materials to help them hunt with minimal conflict in Unit 23. One of these is an article describing some of the conflicts and their history. ADF&G also provides a wealth of valuable online information designed to promote safe hunting, an understanding of local access issues, and good meat care for all hunters. Besides this general hunting information, we recommend that you read our additional information specific to hunting in Unit 23.

Our hope is that an informed public and proactive actions by transporter/pilots will reduce tensions, prevent conflicts, and preserve a premier hunting opportunity for all.

Alaska Department of Fish and Game

Game Management Unit (GMU) 23 Hunting Information

Meat Salvage

For general information regarding legal meat salvage, please refer to the Alaska Hunting Regulations. The following are some regulations with particular relevance to GMU 23.

- In GMU 23, prior to October 1, you are required to leave the meat on the ribs, front quarters and hindquarters of moose and caribou until it is brought out of the field. Meat may be boned-out once it has been transported to a state-maintained airport or may be boned-out in the field after October 1.
- You cannot hunt or help someone else take big game until after 3:00 a.m. the day following the day of flight. This does not apply if you have flown on a regularly scheduled commercial or commuter flight to a state-maintained airport.
- Weather can cause delays in field pick-up times. Caring for your meat in the field and ensuring it remains in good condition is your responsibility. Some hunters who plan to be in the field more than four or five days arrange to have their pilot check on them part way through their hunt and take the meat back to Kotzebue. If you have already taken an animal, it would be advisable for you to fly out with the meat, package it and ship it out, or donate it as quickly as possible.
- If you are sending meat to Kotzebue prior to leaving the field, be sure to fill out the 'Transfer of Possession' form, located in the back of the Alaska Hunting Regulations booklet and available through your transporter. Meat left unattended in Kotzebue is subject to dust, dogs, flies, warm temperatures and possible citation for meat salvage violations.

Prepare for Shipping and Processing Meat

- There are no commercial facilities such as a coolers, freezers or meat processing plants in Kotzebue.
- Many meat care items may not be available in Kotzebue, especially during the busy fall hunting season. Be sure to bring game bags, tarps, coolers, and shipping materials with you.
- Air cargo carriers will not accept meat that might leak blood, and they require meat to be securely packaged for shipping. If you plan to ship meat out on a wooden pallet, you will need to provide a clean tarp and have your meat bagged in plastic. The only time meat should be wrapped in plastic is when it is being shipped on an airline, not out in the field.
- Alaska Airlines may be able to sell you waterproof 'wetlock' boxes, but they often run out of them in the Kotzebue terminal.
- Check with your guide or transporter to clarify if they will provide shipping materials for you or if they can store these items for you while you are out in the field. Plan ahead for how you will get your meat home, and arrive in Kotzebue prepared.
- To contact shipping agents in Kotzebue and learn about hours of operation, call
  - Alaska Airlines: (907) 442-3477
  - Ryan Air: (907) 442-3347
  - Northern Air Cargo: (907) 442-2744
  - Everts Air Cargo: (907) 442-3702
  - ERA Aviation: (907) 442-3020
  - Bering Air: (907) 442-3187
- Be sure to schedule enough time in Kotzebue prior to flying home to process and pack your meat for shipping. Once again, there are no meat processing facilities in Kotzebue and it is your responsibility to take care of preparing, shipping, or donating your meat.

Donating Meat

Please be aware that not everyone may welcome the offer of meat, even if it has been well cared for and is in good condition. If you are unable to donate your meat, you are still legally responsible for keeping it from spoiling and should be prepared for taking it home with you.

- Consider taking your meat home instead of donating meat locally. Alaska wild game meat is lean, healthy, and organic. When compared with the cost of shipping a trophy, as well as the cost of high quality meat in the store, the price for shipping your game meat home is quite reasonable.
- Make local contacts in advance.
- Giving questionable meat away is illegal and offensive. It is the hunter's responsibility to keep meat in good condition and suitable for human consumption. If you give away spoiled meat to be used as dog food, both you and the recipient may be cited for waste.
- Your guide or transporter may have a means of getting your meat donated, but you must still fill out the 'Transfer of Possession' form when you transfer meat to your guide, transporter, or local recipient.

- In smaller villages, you can also try to contact the Tribal or City office, village store, or the post office. Again, not everyone may respond positively to the offer of meat. You must still complete the meat transfer form.
- Specifics on meat care for different species:
  - As caribou bulls go into rut, hormonal changes give their meat a strong odor and flavor. This generally occurs in early October. At that time subsistence hunters shift from taking bulls, especially large bulls, to cows or small bulls. Although there is no closed season on bull caribou, it is considered poor practice to harvest a large bull during the rut. It would be considered offensive and disrespectful to offer local people meat from a rutty bull caribou.
  - Although the rut does not affect the flavor or odor of meat from bull moose, large bulls almost stop eating at this time and quickly use up their fat reserves. At the same time, fighting and antler thrashing makes their meat tough. Additionally, moose dig rutting pits in which they urinate and wallow, and their hair becomes saturated with urine-soaked mud. It is difficult to avoid transferring the urine on the hair to the meat while butchering a rutty bull. For these reasons, most Inupiaq hunters do not harvest bull moose during the rut, and as with bull caribou, it would be considered offensive and disrespectful to offer local people meat from a rutty bull moose.
  - Meat and fat from both brown and black bears is prized by residents of some inland villagesin Unit 23. The law requires that only the hide and skull be salvaged from brown bears taken under general season or drawing hunts; you must salvage the meat if hunting under the brown bear subsistence registration hunt RB700. From June 1 through December 31, either the hide or the meat of black bears must be salvaged and removed from the field. However, some local residents consider it disrespectful and wasteful to leave bear meat in the field.

Respecting the Land and the Locals

While the wilderness of northwestern Alaska may feel vast and empty, it has been the homeland of the local Inupiat Eskimos for thousands of years. Each bluff, ridgeline, mountain, and bend in the river likely carries an ancient name and has seen thousands of years of seasonal use. Some of these lands are now privately owned by individuals or local and regional Native corporations. Please respect the rights of private landowners and don't trespass on private lands or subsistence camps, even if they do not appear to be in use. For maps and specific information regarding hunting on state, federal, and private lands please read the 'Land Information' section in the Pilot Orientation materials.

A few things to keep in mind:

- As discussed, the fall hunting season is a critical time for local subsistence hunters and their families to harvest meat. They hunt mainly using boats along major rivers and tributaries. In contrast, most visiting hunters charter airplanes to access hunting sites. Although large, smooth gravel bars make attractive landing areas for small airplanes, be aware that most good hunting locales along major rivers have probably been used by Inupiat hunters for generations. Ask your pilot-transporter not to locate you near areas used by subsistence hunters, and to avoid flying low over all hunting camps.
- There is concern by local people that the increased frequency of small planes and number of hunter camps may be altering the traditional migration patterns of the caribou. The location of villages and subsistence campsites have been chosen based on these historic routes and people fear that increasing camps and hunter numbers on the herd's routes may affect local hunters' ability to harvest their yearly meat. Once again, asking your pilot-transporter or guide to place you far from other hunters and local subsistence camps and away from other camps will help ease this tension.
- If hunting along rivers crossed by migrating caribou, camp and hunt on the opposite side from which the caribou enter the water. This helps prevent disruption of their normal movements, and keeps you from deflecting animals away from other hunters and disturbing migration patterns.

Solitude

Most hunters who come to northwest Alaska are seeking the remoteness and solitude of a wilderness hunt. Local families who have been hunting here for generations expect to hunt in a wilderness free of competition for subsistence resources. It is important to respect space and avoid close proximity to established camps and local hunters.

Guided hunters employ a guide, pay a premium price for personal and experienced guidance on where and how to hunt, and how to care for their meat and trophy. Long-time guides typically have established areas in which they drop their hunters.

'Drop-off' hunters have arranged and paid only for transportation and possible gear rental, and have the option of identifying where they would like their pilot to drop them off. Please be aware that as more air and boat transporters have entered the drop-off market in GMU 23, numbers of hunters in GMU 23 are increasing. The success and quality of everyone's wilderness hunt will be improved if transporters locate you far from all other hunters; at least 1.5 miles of camp separation are recommended.

Keeping Camp Clean

While there are established camps used year after year by local families, all temporary camps should be left as if no one had ever been there. This may mean cleaning up someone else's mess.

Please refer to the 'Leave no trace' practices described in the general hunting information and the pilot orientation for details on camp cleanliness.