WCR26-45 Executive Summary	
General Description	Wildlife Closure Review WCR26-45 reviews the closure to the harvest of caribou by non-federally qualified users on Federal public lands 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.
Current Regulation	**Unit 23—Caribou** *Unit 23, remainder—15 caribou, only one may be a cow by State registration permit as follows:* *Bulls may be harvested* — *Jul. 1—Jun. 30* *Cows may be harvested. However, cows accompanied by calves may not be taken July 31—Oct. 14* — *Jul. 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.* *Federal public lands are closed to caribou hunting from Aug. 1—Oct. 31 except by federally qualified subsistence users hunting under these regulations unless the Western Arctic Caribou Herd population estimate exceeds 200,000 caribou.*
OSM Preliminary Conclusion	**Retain the status quo**
Western Interior Alaska Subsistence Regional Advisory Council Recommendation	

WCR26-45 Executive Summary	
Seward Peninsula Subsistence Regional Advisory Council Recommendation	
Northwest Arctic Subsistence Regional Advisory Council Recommendation	
North Slope Subsistence Regional Advisory Council Recommendation	
Interagency Staff Committee Comments	
ADF&G Comments	
Written Public Comments	**None**

Draft Wildlife Closure Review
WCR26-45

ISSUE

Wildlife closure review WCR26-45 is a standard review of a Federal subsistence wildlife closure to the harvest of caribou by non-federally qualified users on Federal public lands within a portion of Unit 23 remainder (Map 1). It is the Federal Subsistence Board's (Board) policy that Federal public lands should be reopened when closures are no longer necessary, and that closures will be reviewed at least once every four years. This year-round closure applies to a limited area within Unit 23 remainder and predates the unit-wide closure to caribou hunting by non-federally qualified users from Aug. 1—Oct. 31, which was implemented in 2024. The unit-wide closure is not reviewed in this analysis.

Closure Location and Species: Unit 23 remainder—Caribou

This closure is located 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 (Unit 23 Noatak Corridor) (**Map 1**).

Closure Dates: Year-round

Current Federal Regulations

Unit 23—Caribou

Unit 23, remainder—15 caribou, only one may be a cow by State registration permit as follows:

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

***

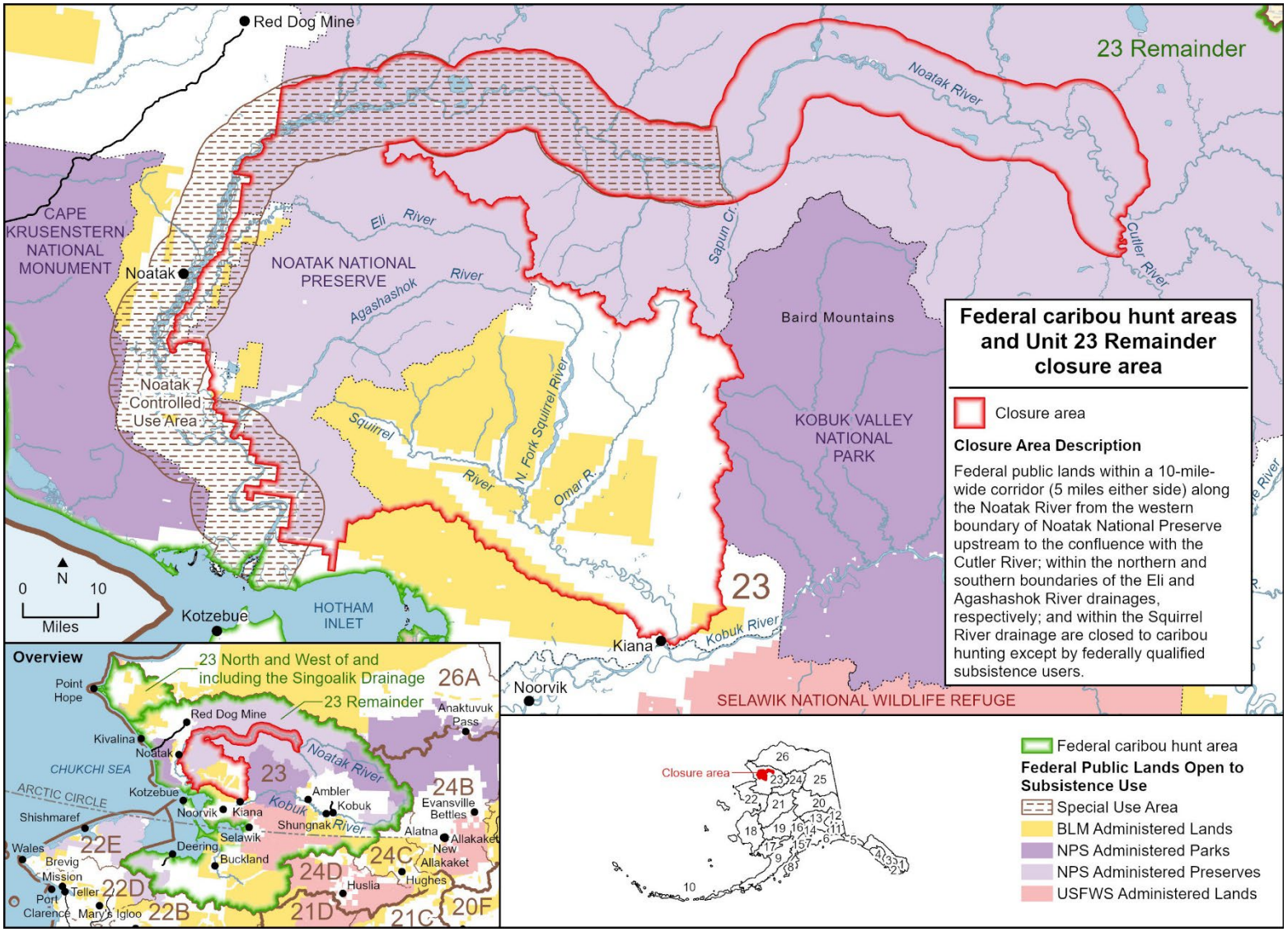
Federal public lands within a 10-mile-wide corridor (5 miles either side) along the Noatak River from the western boundary of Noatak National Preserve upstream to the confluence with the Cutler River; within the northern and southern boundaries of the Eli and Agashashok River drainages, respectively;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

Federal public lands are closed to caribou hunting from Aug. 1—Oct. 31 except by federally qualified subsistence users hunting under these regulations unless the Western Arctic Caribou Herd population estimate exceeds 200,000 caribou.

Current State Regulations

Unit 23—Caribou

23 remainder	*Residents— Fifteen caribou total, only one of which may be a cow 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 3.*	*Bulls*	*RC907*	*No closed season*
		Cows	*RC907*	*Sept 1— Mar 31*
	Nonresidents—One bull		*HT*	*Aug 1—Sept 30*



Map 1. Closure to caribou hunting by non-federally qualified users in Unit 23.

Regulatory Year Initiated: 2018

Closure last reviewed: 2022—WCR22-45

Justification for Original Closure

Section 815(3) of ANILCA states:

> *Nothing in this title shall be construed as – (3) authorizing a restriction on the taking of fish and wildlife for nonsubsistence uses on public lands (other than national parks and monuments) unless 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 Board adopted Proposal WP18-46 with modification to close caribou hunting by non-federally qualified users within the targeted closure area of Unit 23 (Unit 23 Noatak Corridor, **Map 1**) consistent with the recommendations of the Northwest Arctic and Seward Peninsula Councils, as well as the Western Arctic Caribou Herd (WACH) Working Group. The Board viewed the targeted closure as a reasonable compromise to a complex problem. While the Office of Subsistence Management (OSM) conclusion proposed closing lands north of the Noatak River, between and including the Kelly and Nimiuktuk Rivers, the Board stated that the western part of the proposed area was part of the NPS delayed entry zone. The NPS delayed entry zone already limited dates of access into the area by commercial big game transporters operating under NPS commercial use authorization permits (FSB 2018).

Council Recommendation for Original Closure

Western Interior Alaska Subsistence Regional Advisory Council

Support WP18-46 with modification to close all Federal public lands within Unit 23 Noatak Corridor to caribou hunting except by federally qualified subsistence users for the 2018/2019 and 2019/2020 regulatory years. The closure would extend through September 21st of each calendar year only. The Western Interior Alaska Subsistence Regional Advisory Council (Western Interior Council) indicated that a closure through September 21st would allow ample time for lead cow caribou to establish migration routes through Unit 23 while providing some hunting opportunity for non-federally qualified users.

Seward Peninsula Subsistence Regional Advisory Council

Support WP18-46 with modification to close all Federal public lands within Unit 23 Noatak Corridor to caribou hunting except by federally qualified subsistence users. The Seward Peninsula Subsistence Regional Advisory Council (Seward Peninsula Council) noted support for the Northwest Arctic Council and their recommendation.

Northwest Arctic Subsistence Regional Advisory Council

Support WP18-46 with modification to close all Federal public lands within Unit 23 Noatak Corridor to caribou hunting except by federally qualified subsistence users. The Northwest Arctic Subsistence Regional Advisory Council (Northwest Arctic Council) indicated that recent closures seem to have alleviated many of the user conflicts in the region and that as a result of the closures, caribou appear to be establishing migration routes unimpeded by non-federally qualified users. They recognized that hunting opportunities and experiences have improved for residents of Noatak as a result of the closures and that targeted closures, rather than a full closure of Unit 23, help to avoid the concentration and displacement of hunters to state managed lands, particularly along the Kobuk River and into Unit 26 and Unit 22. The Council noted that the targeted closure, coupled with the National Park Service's Special Commercial Use Area in Noatak National Preserve, would help to further alleviate threats to the continuation of subsistence uses in the region. Additionally, the Council recognized recent positive biological indices for the herd, but noted concern regarding population trajectories given a recent change in herd census technology.

North Slope Subsistence Regional Advisory Council

Support WP18-46 as written**.** As with comments on Proposal WP18-57, it was noted that the impact from aircraft used to bring in non-local hunters affects the migration and ability of locals to hunt. The Council felt that aircraft operators' desire to place paying clients in the path of caribou is diverting caribou and preventing local communities from being able to get caribou. The Council stressed that even though the closure may deflect non-federally qualified users to state lands, it was important to take steps to provide opportunity for subsistence users on Federal lands. The Council noted that this conflict had been ongoing in this area for many years and it seemed that transporters and guides had not shown any inclination to self-regulate to work with local users to resolve the conflict. It was noted that the Western Arctic Caribou Herd Working Group represents a broad variety of communities and user groups, and that this proposal is the voice of the people from the region. As such, the Council supported the request.

The Council recognized the work that went into evaluating the areas of most importance to local communities for harvest of caribou and the sites of the most intense user conflicts, but did not support the OSM modification because the full closure was the more dramatic effort needed to maximize subsistence opportunity. The Council felt that the local harvest was already consuming the harvestable surplus, communities were growing, and that it perhaps was time to go into preservation mode. It was noted however, that it appeared that the OSM modification reflected that those areas were the real "problem area" for user conflicts. Chair Gordon Brower commended the work that went into identifying the area that is most critical for subsistence hunters in the region and that had been at the heart of the user conflicts for so many years. He recognized the effort to find a solution that could be supported by all.

State Recommendation for Original Closure

Alaska Department of Fish and Game (ADF&G) opposed Proposals WP18-46 and WP18-47, stating "they will not improve the caribou herd's population status. Harvest by non-federally qualified users is minimal. Recent actions by the BOG were intended to reduce user conflicts in Unit 23 by modifying the Noatak Controlled Use Area and by collecting additional harvest information by establishing a new registration permit requirement in Units 22, 23 and 26A. Both of these changes were adopted following an extensive public process that included the input of Regional Advisory Councils, the WACH Working Group, Fish and Game Advisory Committees, and the BOG. Additional restrictions are not needed until the effects of these changes are better understood.

If changes are deemed to be necessary, then targeted closures would be preferred so non-federally qualified users are not concentrated on state and private lands. The WACH Working Group supported a 2-year partial closure that mirrors WSA17-03 and would be preferable to the alternate options proposed.

ADF&G has documented the reports of migration deflection due to harvest of animals leading migrations, changes in migration patterns, and other user conflict issues. Although caribou may be temporarily affected by hunters, deflections of herd migration have not been detected to date (Fullman et.al., 2017). Further research on these issues would be needed to quantify their effects on caribou populations and subsistence opportunity."

Extent of Federal Public Select Land or Water

Federal public lands comprise 76% of the Unit 23 Noatak Corridor closure area, and consist of 60% NPS administered lands and 16% BLM administered lands.

Customary and Traditional Use Determination

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

Regulatory History

In 2013, an aerial photocensus indicated significant declines in the Teshekpuk Caribou herd (TCH), 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 harvest limits for nonresidents from two caribou to one bull, reductions in bull and cow season lengths, the establishment of new hunt areas, and the prohibition of calf harvest—were adopted to slow or reverse the population decline. These regulatory changes took effect on July 1, 2015.

In 2015, the North Slope Subsistence Regional Advisory Council (North Slope Council) submitted four temporary special actions, WSA15-03/04/05/06, requesting restrictions to caribou regulations in Units 23, 24, 26A, and 26B, respectively. These temporary special actions were 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 5 caribou per day, the harvest season would be shortened for bulls and cows, and the take of calves would be prohibited. The Board did not establish a new hunt area, but it did approve the restrictions for all of Unit 23, and prohibited the take of cows with calves. The Board stated that the additional restrictions were necessary to support recovery of the caribou population.

Along with the State restrictions implemented in 2013, these Federal regulatory changes marked the first time that harvest restrictions had been implemented for the WACH in over 30 years. Five proposals (WP16-37, WP16-48, WP16-49/52, and WP16-61) concerning caribou regulations in Unit 23 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 with a snowmachine for harvest on BLM lands only. The Board stated that the use of snowmachines to position an animal for harvesting was a recognized customary harvest method presently allowed on State lands in Unit 23. However, BLM was the only Federal land-manager in the Unit with regulations that did not prohibit such methods.

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 5 caribou per day, restrict bull season during rut and cow season around calving, prohibit the harvest of calves and the harvest of cows with calves before weaning (mid-Oct.), and to create a new hunt area in the northwest corner of Unit 23. The Board stated that implementing these regulatory changes was consistent with the recommendations of the Councils, and brought Federal and State regulations into alignment. The Board took no action on the remaining proposals (WP16-49/52, and WP16-61) because of action taken on WP16-37.

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 (FSB 2016).

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 23 and 26A. A similar proposal had been passed for Unit 22 in 2016. The Alaska Department of Fish and Game (ADF&G) submitted Proposal 2 to better monitor harvest and improve management flexibility. 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 Noatak/Kivalina & Kotzebue Fish and Game Advisory Committee (AC) submitted the proposal to allow caribou to migrate through those areas with less disruption and barriers. The proposal failed as it would be difficult to enforce.

In March 2017, the Northwest Arctic Council submitted temporary special action request WSA17-03 to close caribou hunting on Federal public lands in Unit 23 to non-federally qualified users for the 2017/18 regulatory year. The Council 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 approved WSA17-03 with modification to close all Federal public lands within Unit 23 Noatak Corridor 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 uses.

Four proposals (WP18-32, WP18-45, WP18-46/47, and WP18-48/49) pertaining to caribou regulations in Unit 23 were submitted to the Board for the 2018-2020 wildlife regulatory cycle. In April 2018, the Board rejected Proposal WP18-32 as part of the consensus agenda. WP18-32 was submitted by the Western Interior Council, and requested changes to the caribou season dates on Federal public lands in multiple units, including Unit 23. The Board also rejected WP18-45 as part of the consensus agenda. WP18-45 was submitted by the Northwest Arctic Council, and requested that the caribou harvest limit in Unit 23 be reduced from 5 caribou per day to 3 caribou per day.

During the same regulatory meeting, the Board adopted Proposal WP18-46 with modification and took no action on WP18-47. Proposal WP18-46, submitted by the WACH Working Group, 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 to geographical scope as WSA17-03 (see above). 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. WP18-46 resulted in the closure reviewed in this analysis (Unit 23 Noatak corridor) (**Map 1**).

In April 2018 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. The Board stated requiring registration permits would improve herd management, which is

particularly important during periods of population decline. The Board took no action on WP18-49 due to action taken on WP18-48.

In January 2020, the BOG adopted Proposal 20 to open a year-round resident season for caribou bull harvest in Unit 23. The BOG also adopted Proposal 24 as amended to remove the restriction on caribou calf harvest in Units 22, 23, and 26A.

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, mirroring changes in State regulations. Creating a year-round season for bulls was intended to allow for harvest of younger bulls not in rut when caribou migration was delayed, thus 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. The Board took no action on Proposals WP20-43 and -45, which requested a year-round bull season in Unit 23, due to action taken on Proposal WP20-46. For the same reason, the Board took no action on Proposal WP20-44, which requested that calf harvest be permitted in Unit 23.

In August 2020, the Board approved a revised closure policy, which stipulates that all closures will be reviewed every four years. The policy also specifies that closures, similar to regulatory proposals, will be presented to the Councils for a recommendation and then to the Board for a final decision. Previously, closure reviews were presented to Councils who then decided whether to maintain the closure or to submit a regulatory proposal to modify or eliminate the closure.

In 2021, the Northwest Arctic Council submitted Temporary Wildlife Special Action WSA21-01, which requested closing Federal public lands in Units 23 and 26A to caribou and moose hunting by non-federally qualified users from Aug. 1—Sep. 30, 2021. The Council expressed concern about the late migration of caribou into and through Unit 23 and stated that the lack of fall harvest had resulted in empty freezers and stressed communities. The Council hoped a closure would reduce the impacts from transporters and non-local hunters on migrating caribou. In June 2021, the Board deferred action on this request and asked that OSM seek additional input on concerns related to caribou from the WACH Working Group, Federal land-management agencies, local Fish and Game Advisory Committees, ADF&G, Federal Subsistence Regional Advisory Councils, commercial guides and transporters, and subsistence users in the area.

In March 2022, the Board approved Wildlife Special Action Request WSA21-01a with modification to close Noatak National Preserve (including the Nigu River portion of the Preserve in Unit 26A) and BLM managed lands between the Noatak and Kobuk rivers in Unit 23 to caribou hunting by non-federally qualified users from Aug. 1—Sept. 30 during the 2022/23 and 2023/24 regulatory years. The Board stated this modification was a reasonable compromise that provides for the continuation of subsistence uses and the conservation of the WACH, while precluding unnecessary restrictions on non-federally qualified users. The partial closure targeted the areas of highest user conflicts and sought to minimize potential disruptions to caribou migration. The Board also expressed concern over the 24% WACH population decline over the past two years, which prompted the WACH Working Group to change the herd's management level to preservative declining.

The Unit 23 Noatak corridor closure was last reviewed in April 2022 (WCR22-45). The Board voted to maintain the status quo. The Board stated that the closure was originally enacted for the continuation of subsistence uses of the WACH, and the underlying factor leading to the closure, user conflict, had persisted. Furthermore, feedback from Noatak residents indicated that the closure had reduced user conflict, resulting in more successful caribou hunts for local subsistence users. The Board's decision was consistent with Council recommendations. The Northwest Arctic and North Slope Councils recommended maintaining the status quo in support of Noatak, to continue to reduce previously significant user conflict in the area, and because the targeted closure provides a needed priority for subsistence users "to put food on the table." The Seward Peninsula Council similarly recommended maintaining the status quo because the closure was still necessary to continue subsistence uses of the WACH, and due to the proximity of Unit 23 closure area to Unit 22. The Western Interior Council deferred to the affected region.

In January 2024, the BOG considered several proposals regarding WACH conservation. Proposal 2 requested reducing the caribou bag limit across the range of the WACH (Units 21D remainder, 22, 23, 24B remainder, 24C, 24D, and 26A) to four caribou per year, only one of which could be a cow. Proposals 36 and 37 requested the same bag limit reductions in Unit 23 only, and Proposal 37 requested closing the Unit 23 nonresident caribou hunt. The BOG adopted Proposal 2 and Proposal 36 as amended to reduce the caribou bag limit in Units 22, 23, and the southwestern portion of Unit 26A from 5 caribou per day to 15 caribou per year, only one of which may be a cow. The BOG deferred the remaining hunt areas in Units 21 and 24 to their March 2024 meeting, and took no action on Proposal 37. The BOG adopted the amended harvest limit reductions after much testimony from and discussion with subsistence users on workable solutions to balance conservation with reasonable opportunity, focusing on reducing cow harvest. The BOG adopted Proposal 38 as amended to establish a nonresident only drawing hunt with up to 300 permits for Unit 23, effective in the 2025 regulatory year.

In April 2024, the Board considered Proposal WP24-28/29, which requested a reduction in the caribou harvest limit across the range of the WACH to four caribou per year, only one of which may be a cow. The original request included Units 21D remainder, 24B remainder, 24C, 24D, and all caribou hunt areas within Units 22, 23, and 26A. In deference to the Northwest Arctic, North Slope, Seward Peninsula, and Western Interior councils, the Board adopted WP24-28/29 with modification to exclude the eastern portion of Unit 26A from the harvest limit reduction and to change the harvest limit to 15 caribou per year, only one of which may be a cow. The Board stated that the modification balanced the need for conservation of the declining WACH with subsistence uses and had support from a broad swath of local users. It also aligned with the recently adopted State regulatory changes.

Also in April 2024, the Board adopted WP24-30/31 with modification to close Unit 23 to caribou hunting by non-federally qualified users from Aug.—Oct. 31. The modification was to add a stipulation that the closure only applies if the WACH is less than 200,000 caribou. The Board stated that the ongoing precipitous decline of the herd warranted strong measures to aid in the recovery and conservation of the caribou population. This Board decision supported the recommendations of the

Northwest Artic and North Slope councils, while ensuring that the closure would not remain in effect longer than necessary.

See **Appendix 1** for the regulatory history of Federal and State Controlled Use Areas in and around the closure area.

Biological Background

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; Cameron et al. 2018). Weaning generally occurs in late October and early November before the breeding season (Taillon et al. 2011). Calves may 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 (Russell et al. 1991; Joly 2000; Holand et al. 2012, Rughetti and Festa-Bianchet 2014).

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).

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 2**; 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. 2021a). 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. 2021a). The winter range fluctuates year-to-year as the WACH demonstrate low fidelity to wintering grounds (Joly et al. 2021a). Rut occurs during fall migration (Dau 2011, WACHWG 2011). The fall migration is more variable and shows less fidelity to specific migration routes than the spring migration, when caribou still showed a fidelity to certain regions within the herd's range (Joly et al. 2021a).

In recent years, the timing of fall migration has been less predictable (Joly et al. 2021a). Reasons for changes in migration phenology are unknown. However, Cameron et al. (2021) found that WACH 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 2021b). Caribou migration distance and ranges are also closely related to the population size and density of the herd (Burch 1972, Joly et al. 2021b).

The proportion of caribou using certain migration paths also varies each year (**Figure 1**, Baltensperger and Joly 2019; Joly and Cameron 2020). Changes in migration paths are likely influenced by multiple factors including food availability, snow depth, rugged terrain, and dense vegetation (Nicholson et al. 2016; Fullman et al. 2017). 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 delayed the fall migration along the coast with some caribou turning around rather than crossing the road (Wilson et al. 2016, WACHWG 2021).

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, USFWS, 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 (WACHWG 2011, 2019). Revisions to recommended harvest levels under liberal and conservative management were made in 2015 (WACHWG 2015) and 2019 (WACHWG 2019a, **Table 1**).

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 2**). From 2003-2016, the herd estimates declined at an average annual rate of 7.1% from approximately 490,000 caribou to 200,928 caribou (Dau 2011, 2014; Caribou Trails 2014; Parrett 2016). In 2017, the herd increased to an estimated 259,000 caribou (Parrett 2017). 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 2019). No photocensus was completed in 2020. However, in 2021, the population estimate was 188,000 caribou with a 95% confidence interval of +/- 11,855 and a minimum count of 180,374. This represented approximately a 24% decline from the 2019 population estimate (WACHWG 2021). The 2022 population estimate was 164,000 caribou with a 95% confidence interval of +/- 7,271, and a minimum count of 161,034, representing an additional 12% decline (**Figure 2**, WACHWG 2022). The population declined an

additional 7.6%, to approximately 152,000 caribou in 2023 (WACHWG 2023). No photocensus was completed in 2024 due to weather limiting flights when caribou were sufficiently aggregated (WACHWG 2024).

Between 1982 and 2011, the WACH population was within the liberal management level prescribed by the WACH Working Group (**Figure 2, Table 1**). 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 (WACHWG 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 management level in 2021, 2022, 2023, and 2024 (WACHWG 2021, 2022, 2023, 2024).

Bull:cow ratios provide a measure of harvestable surplus and whether enough bulls are on the landscape for adequate breeding. Between 1970 and 2023, the bull:cow ratio exceeded Critical Management level of 30 bulls:100 cows identified in the 2019 WACH Management Plan (**Figure 3**). (Note: Previous management plans identified 40 bulls:100 cows as the critical management level). 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 and was 50 bull:100 cows in 2023 (**Figure 3,** WACHWG 2021, 2023). 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-present decline are not known with certainty, increased adult cow mortality, and decreased calf recruitment and survival played a role (Dau 2011, WACHWG 2022). Since the mid-1980s, adult mortality has slowly increased while recruitment has slowly decreased (**Figure 4**, Dau 2013). Prichard (2009) developed a population model specifically for the WACH using various demographic parameters and found adult cow 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 2017, the June calf:cow ratio averaged 72 calves:100 cows/year. 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, WACHWG 2021). The 5-year period from 2015-2019 had the highest (83%) parturition rate of any period since monitoring began. In 2023, the June calf:cow ratio was 77 calves:100 cows. The long-term average (1992-2023) is 70 calves:100 cows/year (**Figure 5**, WACHWG 2023, NWARAC 2023).

Decreased calf survival through summer and fall and recruitment into the herd may have 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 5**).

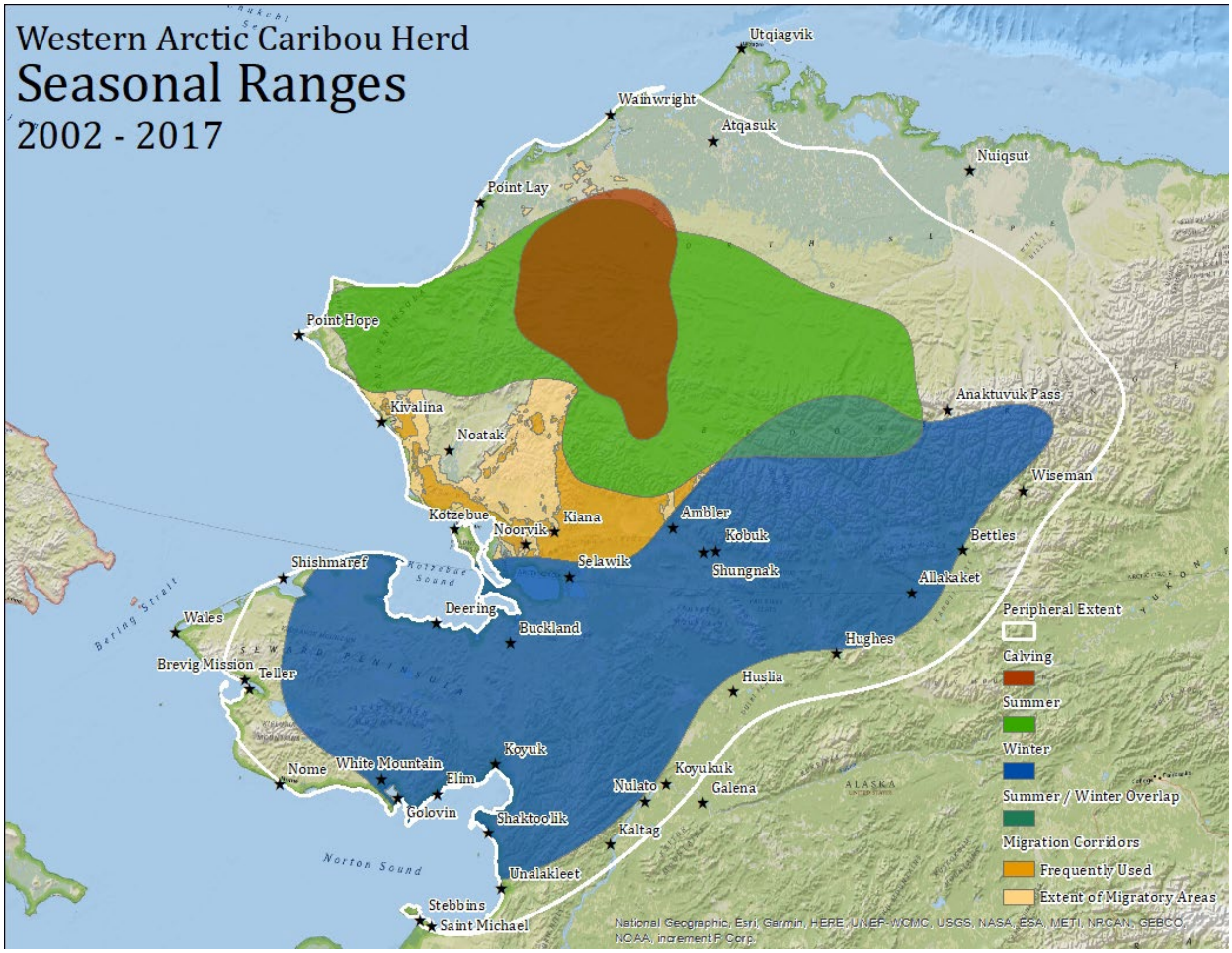
Similarly, the ratio of short yearlings (SY, 10-11 months old caribou) to adults provides a measure of overwintering calf survival and recruitment. Between 1998 and 2023, SY:adult ratios ranged from 9-26 and averaged 17 SY:100 adults/year (**Figure 5**). SY:100 adult ratios were high from 2016-2018, ranging from 21-23 SY:100 adults (Dau 2016b, NWARAC 2019, NWARAC 2023). The 2023 SY:100 adult ratio was on par with the long-term average at 17 SY:100 adults (WACHWG 2023). Over the past eight years the short yearling ratio has been at or above the long-term average. Thus, recruitment does not appear to be a major driver of herd decline.

Cow survival affects the trajectory of the herd (Dau 2011, 2013, Prichard 2009, NWARAC 2019a), and is likely the factor driving the herd's decline (WACHWG 2023). Prichard (2009) and Dau (2015) suggest that harvest levels and rates of cows can greatly impact population trajectory. The long-term survival rate of radio-collared adult cows averaged 80% from 1987-2024 (WACHWG 2024). The annual survival rate decreased from an average of 85% between 1987 and 2003 to 77% from 2004-2014 (**Figure 4,** Dau 2011, 2013, 2014, 2015). Survival rates increased in 2015 and 2016, but then declined sharply in 2017. However, the decreased survival rate in 2017 may have been due to a low and aging sample size as few caribou were collared in the previous two years (Prichard et al. 2012, NWARAC 2019) and/or difficult weather conditions (Gurarie et al. 2020).

Prior to 2019, ADF&G and NPS deployed collars on caribou at Onion Portage via boat in September. Only seven collars total were deployed in both 2017 and 2018 due to fewer caribou migrating through Onion Portage at predictable times. ADF&G and NPS began deploying collars using net gun techniques via helicopter in April 2019 (Joly and Cameron 2021). Since 2018, estimated mortality rates have remained above the long-term average, ranging from 23-36%. The mortality rate was high in 2023 at 31% (WACHWG 2023). Cow survival rates of > 80% and > 88% are needed for a stable and increasing population, respectively (Table 1).

Estimated mortality includes all causes of death including hunting (Dau 2011). Over half of cow mortality is attributed to predation, while 5-29% has been attributed to hunting each year since 2006 (WACHWG 2023). Dau (2015) states that cow mortality estimates are conservative due to exclusion of unhealthy (i.e. diseased) and yearling cows from collaring. These mortality estimates are influenced by the age at which individuals were collared (which is unknown), sample size and how long the collars have been on individuals (Dau 2015, Prichard et al. 2012).

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 (Joly et al. 2011; Dau 2014, 2015). 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).



Map 2. Western Arctic Caribou Herd seasonal range map, 2002-2017 (image from WACHWG 2019).

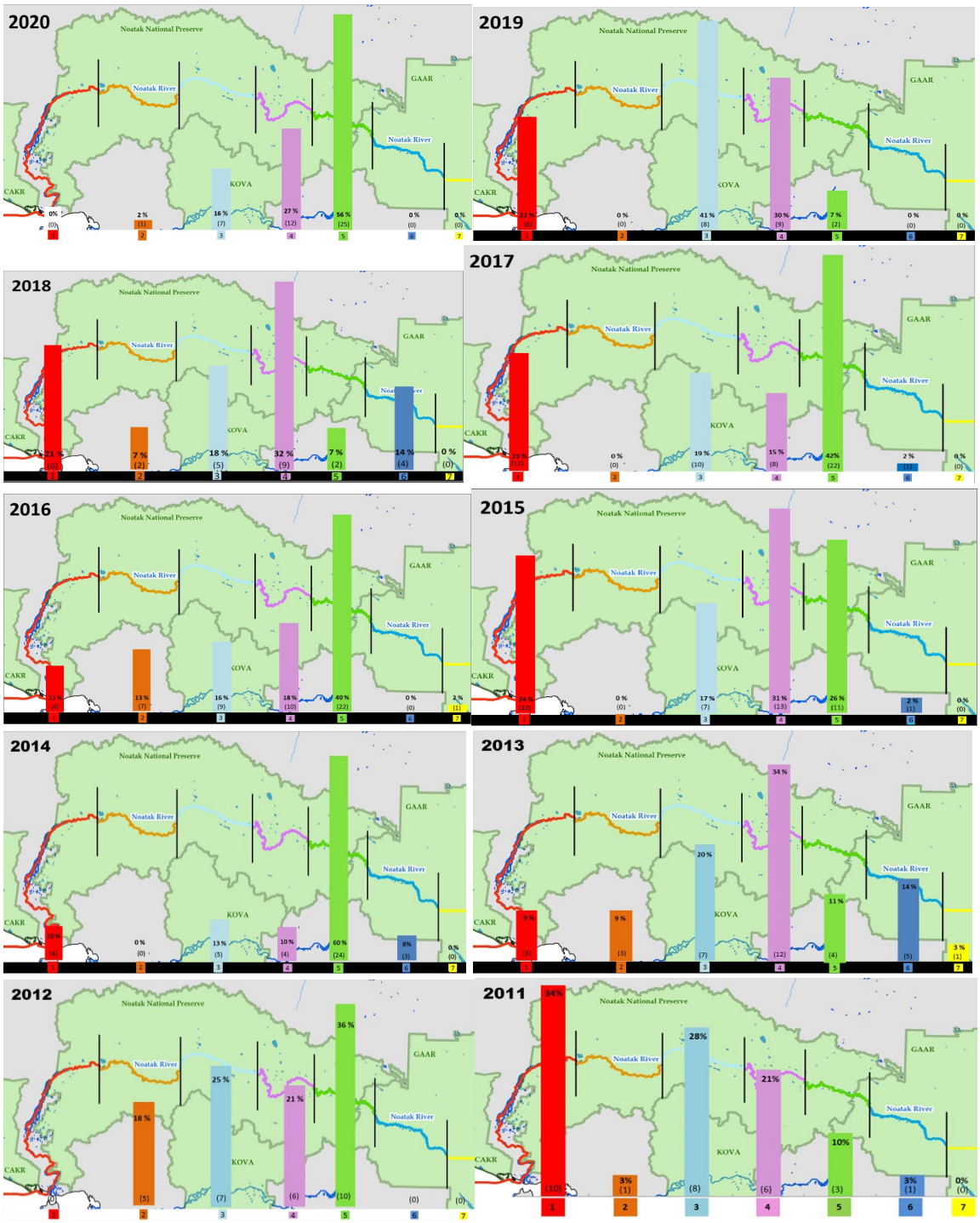


Figure 1. 2011–2020 distribution of caribou crossing the Noatak River during fall. Histograms depict where collared female caribou crossed the Noatak River, generally from north to south, on their fall migration. Relative percentages (top number) and the absolute number (middle number) of caribou are 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).

Table 1. WACH management levels using herd size, population trend, and harvest rate (WACHWG 2019b).

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

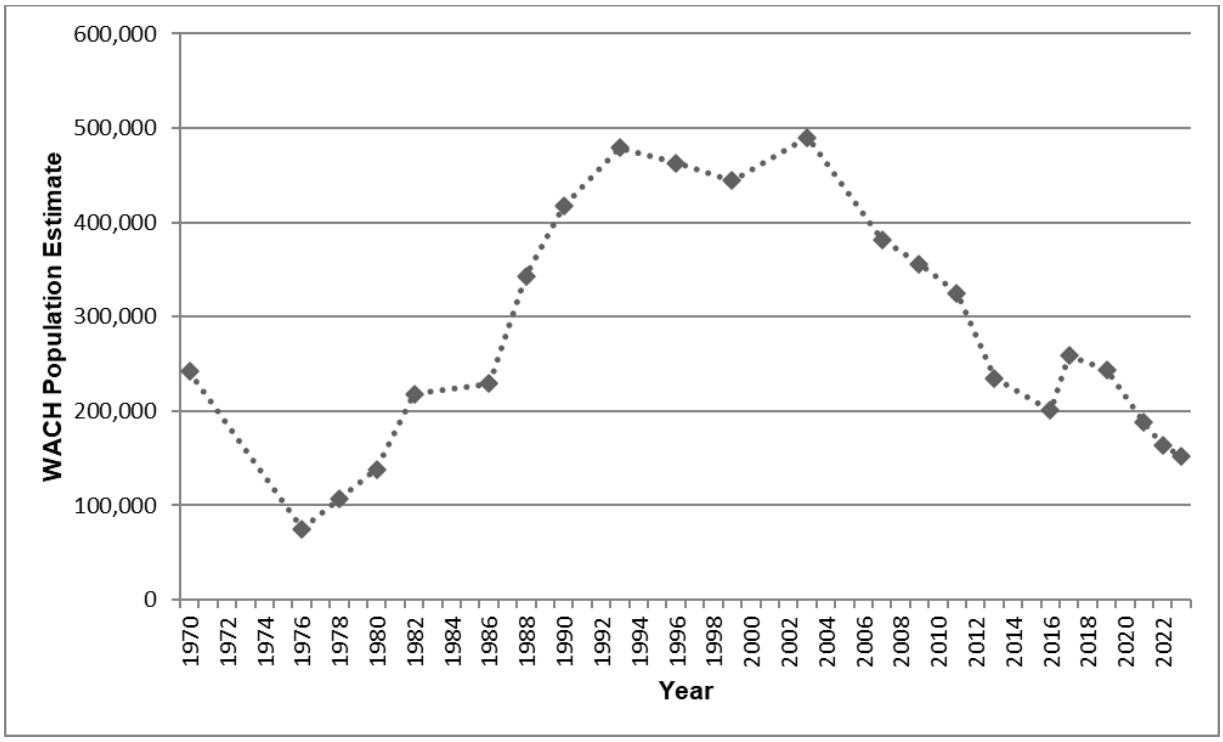


Figure 2. The WACH population estimates from 1970 to 2023. Population estimates from 1986 to 2023 are based on aerial photographs of groups of caribou that contained radio-collared animals (Dau 2011, 2013, 2014; Parrett 2016, 2017a; Hansen 2019; WACHWG 2023).

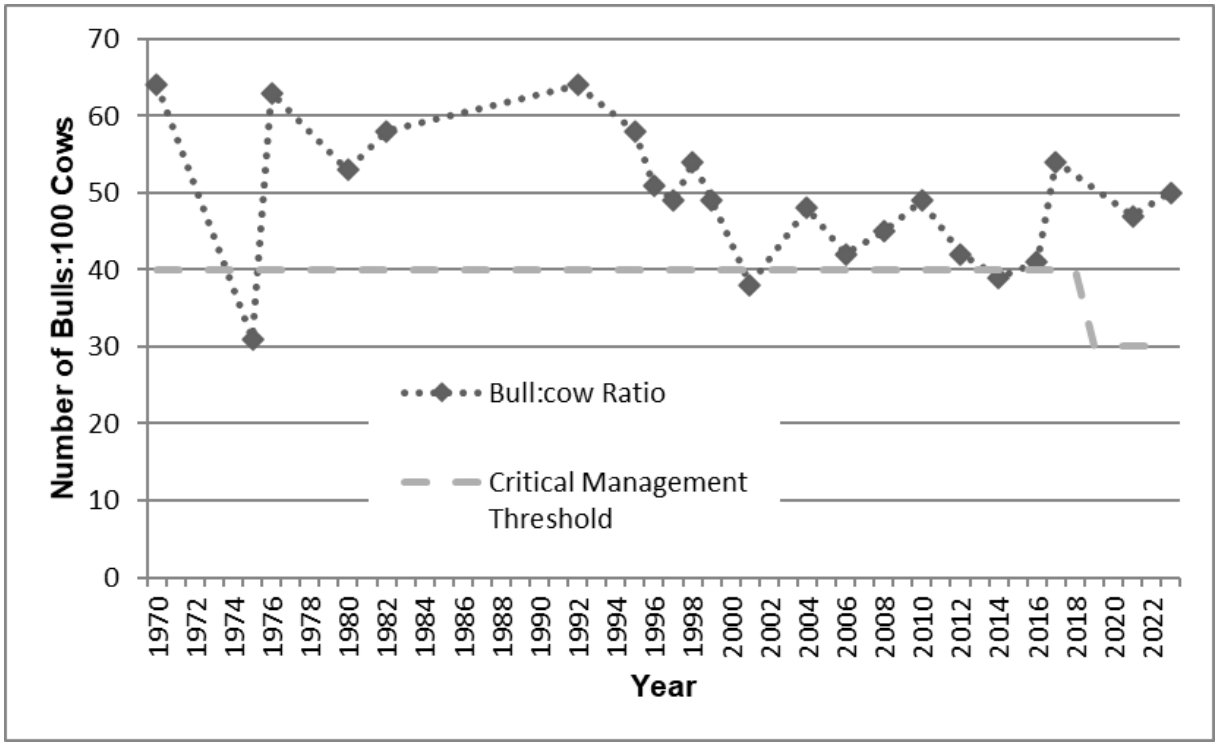


Figure 3. Bull:cow ratios for the WACH (Dau 2015, ADF&G 2017b, Parrett 2017, WACHWG 2023).

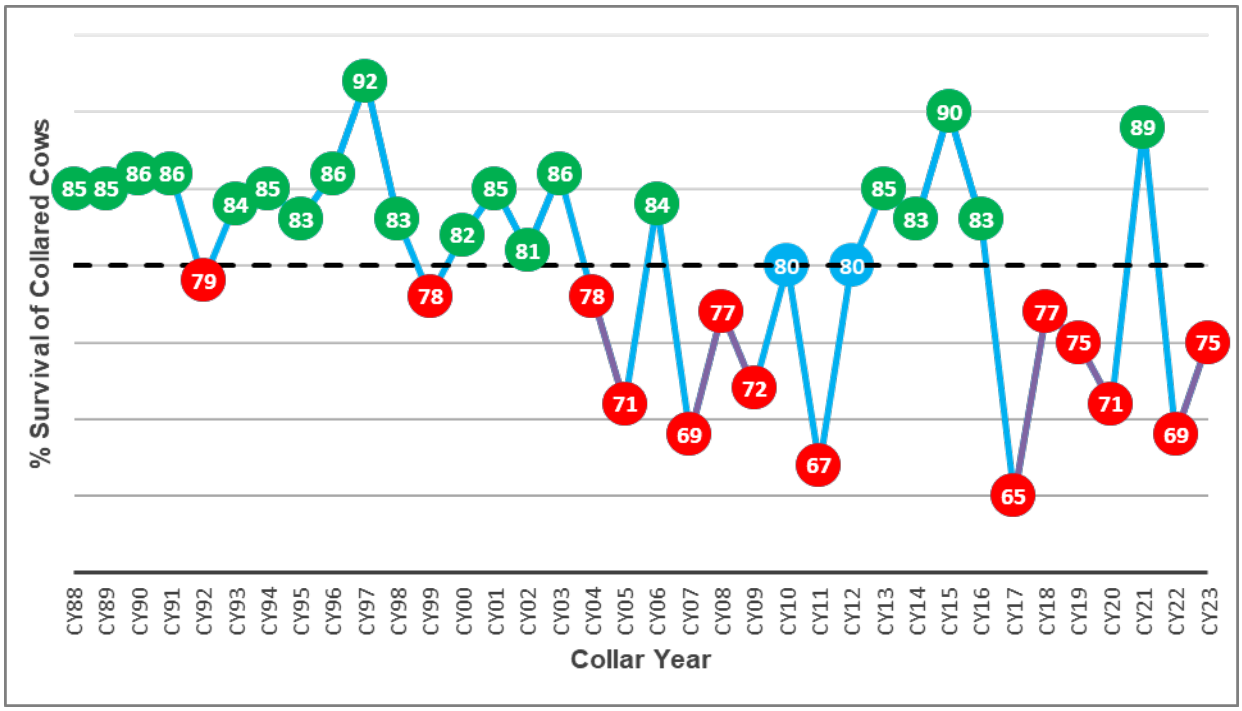


Figure 4. Survival rate of radio-collared cow caribou in the WACH (Dau 2013, 2015, 2016b; NWARAC 2019; WACHWG 2020, 2021, 2024). Collar Year = 1 Oct–Sep 30. Note: Prior to 2019, collars were deployed via boat in Onion Portage from September to October. Starting in 2019 collars were deployed via net gun techniques in spring (Joly and Cameron 2021).

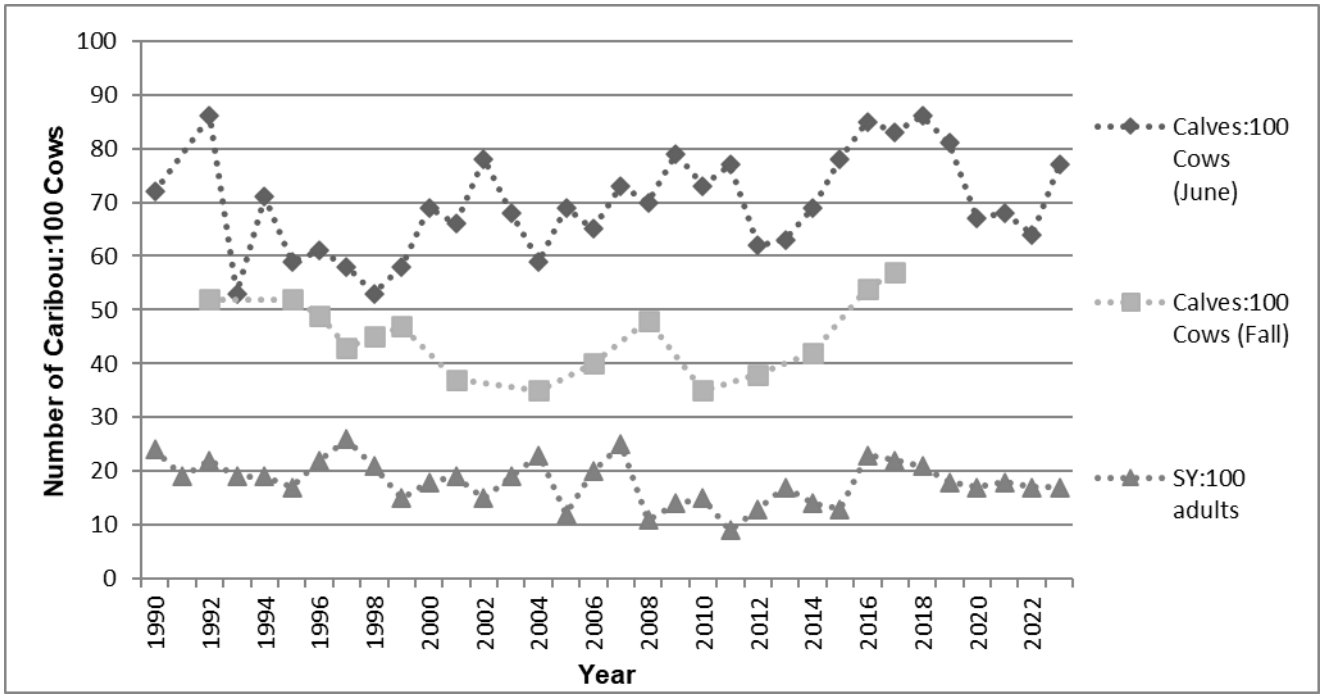


Figure 5. Calf:cow and short yearling (SY):adult ratios for the WACH (Dau 2013, 2015, 2016a; ADF&G 2017b; Parrett 2017; NWARAC 2019, 2023; WACHWG 2023). Short yearlings are 10–11 months old caribou.

Cultural Knowledge and Traditional Practices

Caribou have been a primary resource for the Iñupiat of the Northwest Arctic region 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). Caribou were traditionally harvested any month of the year they were available. Hunt timing changed—and continues to change—from year-to-year according to the availability of caribou and their migration paths (ADF&G 1991, Burch 2012). In Unit 23, caribou have historically been available during fall migration, but this has not been the case in recent years, as caribou migration has occurred later in fall. Later migrations have also resulted in subsistence harvest occurring later, which in turn contributes to food insecurity and increased cow harvests, as bulls are in rut.

Caribou continue to dominate subsistence harvest in most communities in the region (Braem et al. 2015, Braem 2017, pers. comm.). In household harvest surveys conducted between 1964 and 2021, caribou were often the most harvested species 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 2023).

The objective of the fall hunt has historically been to acquire large quantities of high-quality meat to freeze for winter (Burch 1984). 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 hunting areas. However, because of the variable range of the herd, the critical hunting sites changed each year. Noatak National Preserve is not only the hunting grounds of the people of the Noatak; it is also an alternative hunting site for people living on the Kobuk River, Selawik River, and Kotzebue Sound when caribou are unavailable closer to home (Deur et al. 2019). Residents of Selawik, Noorvik, and Kiana have hunted caribou on the Noatak River in recent years, reflecting local scarcity (CAKR SRC 2024).

Communities in Unit 23 harvest caribou in the spring, fall, and winter, but fall is the preferred season for harvest. Prior to freeze-up, bulls have traditionally been preferred because they are fatter than cows (Georgette and Loon 1993). Caribou can be harvested in large numbers, when available, and transported back to villages by boat before freeze-up. After freeze-up, cows are preferred, because bulls are typically skinnier and in rut by then; the meat smells bad and is often of poor quality (Braem et al. 2015).

Communities with a recent history of harvesting caribou in the Noatak closure area include Noatak (Georgette and Loon 1988, Braem and Kostick 2014, Mikow et al. 2014, Gonzalez et al. 2018), Kotzebue (Georgette and Loon 1993, Godduhn et al. 2014, Mikow and Kostick 2016, Braem et al. 2017), Kiana (Lamb et al. 2024), and Noorvik (Braem et al. 2017, Gonzalez et al. 2020). Subsistence surveys conducted by ADF&G Division of Subsistence provide important information about communities' patterns of caribou use. Noatak, Kotzebue, Kiana, and Noorvik have been surveyed

periodically between 1986 and 2021. Kiana is the only community that has been surveyed following implementation of this closure, for the 2021 study year (ADF&G 2024, Lamb et al. 2024).

Table 2 shows that on average caribou accounted for between 33% and 46% of the total wild food harvest of the four communities, 86%–95% of households used caribou, and that the average number of pounds of caribou harvested per person ranged between 92.1 pounds in Kotzebue to 158.5 pounds in Noorvik. Noatak's average per person harvest of caribou was 119 pounds (**Table 2**, ADF&G 2024).

User Conflicts

While residents of Unit 23 rely on caribou for the majority of their subsistence harvest, nonlocals are attracted to the region because of its extensive public lands and abundant wildlife. User conflict is defined as "persons competing for consumptive or non-consumptive uses of a finite resource" (Braem et al. 2015). User conflicts are likely to intensify when resources are scarce and when food security is threatened (Cohen and Pinstrup-Andersen 1999).

Conflicts between local and nonlocal hunters have been well documented in Unit 23, specifically in Noatak National Preserve, the Squirrel River area, and along the upper Kobuk River (Georgette and Loon 1988, Jacobson 2008, Harrington and Fix 2009, Halas 2015, NWARAC 2015b, 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). From 1999 to 2013, an average of about 72% of nonlocal hunters on average accessed the WACH by plane. Most nonlocal harvest (85—90%) occurred 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).

The perception that nonlocals and planes are impacting caribou migration is dominant among Noatak hunters. In a 2014 survey of 19 Noatak hunters, 78% and 92% of respondents perceived nonlocals and planes to impact caribou migration, respectively. Similarly, 63% and 81% of respondents reported that nonlocal hunters and planes reduced hunting success, respectively (Halas 2015). Noatak respondents attributed a decrease in harvest success primarily to aircraft associated with commercial transporters (Halas 2015). Halas (2015) asked Noatak respondents to map areas where negative encounters with non-local hunters had occurred. The highest occurrence of negative interactions with non-local hunters corresponded with areas where caribou cross the Noatak River in the fall (Halas 2015).

A long-held cultural practice in the region requires that lead adult female caribou be allowed to establish migratory paths unhindered by human activity. In the Northwest Arctic region, local hunters and the Council have consistently expressed deep concerns over aircraft and nonlocal hunters disrupting caribou migration by scaring caribou away from migratory pathways and river crossings, landing and camping along migration routes, and shooting lead caribou (Halas 2015; Fix and Ackerman 2015; NWARAC 2015a, 2015b, 2016a, 2016b, 2017a, 2017b, 2018a, 2018b, 2019a, 2019b, 2020, 2021a, 2021b; CAKR SRC 2024). According to a review of grey literature on aircraft-subsistence user conflict, "Specific reports or observations about aircraft activity harassing wildlife,

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

Incomplete geographical information regarding air traffic and hunting camp information has prevented a full quantitative assessment of caribou deflection or displacement associated with commercial operators and their hunting clients (Dau 2015). A study of WACH caribou response to transporter aircraft landings and hunter camps suggested that animal response is limited in temporal and spatial scale and that many factors contribute to larger scale shifts in migration (Fullman et al. 2017). However, observations made by others suggest that while this impact may not be herd-wide, it can directly thwart opportunity for subsistence users who are waiting for caribou (Loon and Georgette 1988).

The timing of caribou hunting has caused conflicts between user groups because historically, 85–95% of all caribou taken by nonlocal hunters have been harvested between Aug. 25 and Oct. 7, which coincides with intense subsistence hunting (Dau 2015:31). While hunt timing aligns among these user groups, methods of access do not. Most local hunters harvest caribou with snowmachines, boats, and 4-wheelers. Few local hunters use aircraft. In contrast, 76% of nonlocal hunters accessed hunt areas by plane in regulatory years 2012 and 2013 (Dau 2015:31). This mode of access can provide nonlocal users with a greater range of access and speed in reaching ideal hunting locations, placing them in front of the migrating herd, and enabling easier and earlier access than local subsistence users.

Writing in 2015, Dau noted that local WACH harvest had been relatively stable since the 1990s, but residents of some communities had to "greatly increase their expenditure of money and effort to maintain these harvest levels" (Dau 2015:14-30). They had to travel farther, more frequently, and for longer durations to find caribou (Halas 2015). Halas (2015) and Stinchcomb et al. (2019) note that aircraft activity can also lead to changes in harvesting behavior. Subsistence hunters avoid areas with air traffic; this displacement prevents continued use of traditional harvest areas and can 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).

Effects of the closure to date

Since implementation of this closure in 2017, first as a temporary special action (WSA17-03) and then in permanent regulation (WP18-46), members of the Northwest Arctic Council have repeatedly given testimony reflecting the positive impacts of the closure for Noatak residents (NWARAC 2018a, 2019a, 2020, 2021a). For example, in 2018, a 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" (NWARAC 2018a). 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).

During the last review of this closure in 2022, the Northwest Arctic Council voted to maintain the status quo in support of Noatak, to continue to reduce previously significant user conflict in the area, and because the targeted closure provides a needed priority for subsistence users "to put food on the table." These comments reflected the Council's ongoing belief that the closure is necessary for ensuring the continuation of subsistence uses in the Noatak River corridor. During the 2023 caribou hunting season, Council members reported that Noatak residents were able to harvest caribou (NWARAC 2023).

There are no new subsistence survey data available that would allow for a comparison of household caribou harvest in Noatak before and after implementation of this closure; the most recent subsistence survey of caribou harvest in Noatak dates to 2016—2017 (Gonzalez at al. 2018). However, a subsistence survey has been conducted for Kiana since the closure was put in place, for the 2021 study year. **Table 3** shows that all four measures of caribou use by residents of Kiana declined when survey results from 2021 are compared with those from 2009. For example, in 2009, caribou comprised 87% of Kiana's total wild food harvest, but in 2021, they made up only 28% (**Table 3,** ADF&G 2024). However, this reduction may reflect the WACH's population decline, as well as variable availability due to changing migration routes.

Table 2. Five measures of caribou use by residents of Noatak, Kotzebue, Kiana, and Noovik as documented by ADF&G Division of Subsistence surveys, averaged over all survey years between 1986 and 2021 (ADF&G 2024).

Community	Survey Years	Percentage of Surveyed Households Using Caribou	Percent of Surveyed Households Harvesting Caribou	Pounds of Caribou Harvested Per Person	Estimated Number of Caribou Harvested	Percentage of Total Harvest
Noatak	2016, 2010, 2007, 2002, 1999, 1994	88%	61%	119.0	425	46%
Kotzebue	2014, 2013, 2012, 1991, 1986	86%	42%	92.1	2094	26%
Kiana	2021, 2009, 2006, 1999	91%	60%	134.6	403	49%
Noorvik	2017, 2012, 2008, 2002	95%	60%	158.5	714	33%

Table 3, Four measures of caribou harvest by residents of Kiana, as documented in subsistence surveys between 1999 and 2021 (ADF&G 2024).

Year	Percent of Surveyed Households Harvesting Caribou	Pounds Harvested per Person	Estimated Number of Caribou Harvested	Percentage of Total Harvest Composed of Caribou
2021	43%	106.4	295	28%
2009	75%	149.2	414	87%
2006	57%	108.5	306	31%
1999	65%	174.1	488	No data
Average	**60%**	**134.6**	**403**	**49%**

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 per year (**Table 1**). The current recommended harvest rate at the preservative declining level is 5% at 200,000 and 4.6% at 130,000. As the 2023 population estimate was 152,000 caribou, the harvestable surplus is currently 7,296 caribou per year (4.8% of 152,000) (NWARAC 2023, WACHWG 2023).

Of particular concern is the overharvest of cows, which may have 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." During the 2023 WACH Working Group meeting, an ADF&G biologist suggested the current harvestable surplus of cows was close to zero and presented modeled estimates for the 2024 WACH population with and without cow harvest (140,000 vs. 146,000). He stressed the need to conserve cows because they are the reproductive potential of the herd (WACHWG 2023).

Currently, there are challenges to quantifying WACH harvest by local hunters. 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). Registration permits have been required to hunt caribou in Unit 23 under State and Federal regulations since 2017 and 2018, respectively, but compliance with the permit requirement by local hunters is thought to be low (WACHWG 2024). Until 2018, caribou harvest by local hunters was estimated from community harvest surveys, if available (**Table 2**), and from models developed by ADF&G's Division of Wildlife Conservation. These models incorporated factors such as community size, availability of caribou, and per capita harvests for each community, which were based on mean values from multiple community harvest surveys (Dau 2015). While these models accurately reflected harvest trends, they did not accurately reflect actual harvest numbers (Dau 2015). ADF&G has not estimated local caribou harvest for the WACH since 2018. Caribou harvest by nonlocal residents and nonresidents is based on harvest reports from harvest tickets and registration permits (Dau 2015).

From 1999 to 2018, the range-wide estimated total harvest from the WACH averaged 14,103 caribou/year, ranging from 11,729 to 16,219 caribou/year (Hansen 2020 and 2021a, pers. comm.), but was generally estimated at 12,000 +/- 1,750 caribou per year since 1996 (WACHWG 2019b, 2021). Additionally, yearly harvest estimates did not include wounding loss, which may have resulted in the loss of hundreds of caribou (Dau 2015). Between 1998 and 2015, ADF&G estimated that local hunters accounted 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 2017b). Year-specific harvest estimates have not been generated since 2018, in part because they are not very accurate (Hansen 2021, pers. comm., WACHWG 2021). While past harvest estimates are above the preservative harvest level specified in the WACH Management Plan, indicating unsustainable harvest levels, actual harvest is unknown and could be lower due to caribou being unavailable for harvest near local communities.

Comparison of caribou harvest by community from household survey data with **Figure 1** 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 the community harvested 685 caribou in 2012 when most of the WACH migrated through eastern Unit 23 (ADF&G 2024). Similarly, Noatak only harvested 66 caribou in 2010 when no GPS-collared caribou migrated through western Unit 23 (ADF&G 2024). 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 (Mikow et al. 2014).

Between 1998 and 2020, annual reported caribou harvest in Unit 23 ranged from 168 to 814 caribou (Hansen 2021, pers. comm.). Over the same time period, reported harvest by non-federally qualified users ranged from 131 to 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. Regardless, local compliance with reporting mandates is considered low but increasing. In 2017 and 2018, registration permits became required under State and Federal regulations, respectively, which is reflected in the greater number of reported caribou harvests by federally qualified subsistence users (**Figure 5**). However, compliance with the permit requirement remains too low to accurately estimate total caribou harvest. Between 2016, when Federal lands closures began, and 2020, reported harvest by non-local hunters in Unit 23 averaged 254 caribou (WinfoNet 2018, 2019; Hansen 2021, pers. comm.).

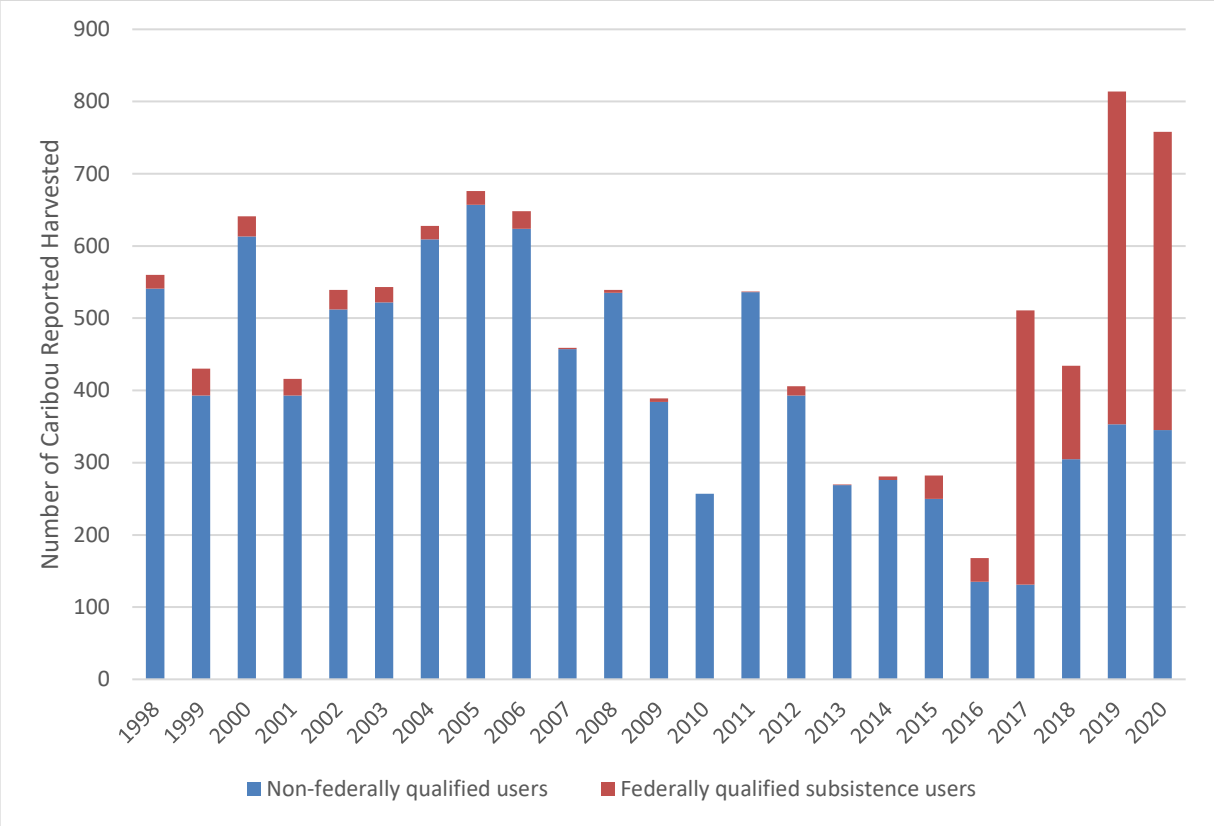


Figure 5. Reported caribou harvest in Unit 23 (WinfoNet 2018, 2019, Hansen 2020, 2021 pers. comm.). Under State regulations, registration permits have been required throughout the range of the WACH since 2017. Since 2018, those hunting caribou under Federal regulations have also been required to have a State registration permit, which has likely contributed to increased reporting by federally qualified subsistence users.

Effects

The Board enacted the current closure because it was necessary to continue subsistence uses of the WACH per §815(3) of ANILCA. Continued complaints about conflicts surrounding caribou hunting along the Noatak and Squirrel river drainages, and the apparent benefit of the 2016/17 Federal closure to Noatak residents as evidenced by letters and public testimony, supported the closure of Federal public lands along the Noatak, Eli, Agashashok and Squirrel rivers. Additionally, the short-term effects of aircraft on caribou behavior can negatively affect hunting success and harvest.

If the closure is lifted, non-federally qualified users would be able to hunt caribou on Federal public lands along the Noatak River and within the Squirrel, Eli, and Agashashok River drainages, except from Aug. 1 to Oct. 31, when a separate closure to caribou hunting by non-federally qualified users applies to all Federal public lands in Unit 23, as long as the WACH population remains under 200,000, effective July 2024.

If the Noatak corridor closure is lifted while the unit-wide closure remains in place, there would be no immediate effect from Aug. 1 to Oct. 31, because these Federal public lands would remain closed to

non-federally qualified users. However, from Nov. 1 to Jul. 31, there would be no specific closure to non-federally qualified users in place in the Noatak corridor, although competition and user conflicts would likely be small, as most nonlocal hunting activity occurs in early fall when the nonresident season is open. However, if the Noatak corridor closure is rescinded and the WACH population later exceeds 200,000, Federal public lands throughout Unit 23 would become open to non-federally qualified users year-round.

If the latter scenario occurred, it would result in more user conflicts and interfere with caribou harvest by federally qualified subsistence users. Feedback from Noatak residents indicates that the current closure has reduced user conflicts, resulting in more successful caribou hunts and allowing for the continuation of subsistence uses (NWARAC 2018a, 2019a, 2020, 2021a). However, additional feedback during the Northwest Arctic Council meeting would be useful and appreciated.

OSM PRELIMINARY CONCLUSION

☒ **Retain the Status Quo**
☐ **Rescind the Closure**
☐ **Modify the Closure to**
☐ **Defer Decision on the Closure or Take No Action**

Justification

The current closure is still necessary to continue subsistence uses of the WACH for federally qualified subsistence users, specifically Noatak residents. Since the closure has been enacted, user conflicts within the closure area have been reduced, and the hunt experiences and harvest success of federally qualified subsistence users have improved. While a unit-wide closure to caribou hunting by non-federally qualified users from Aug. 1 to Oct. 31 was implemented in 2024, this does not provide cause to remove the more geographically restricted Noatak corridor closure. The Noatak corridor closure reviewed in this analysis is year-round, whereas the unit-wide closure is limited to the fall. Furthermore, while the unit-wide closure contains a stipulation that it will not be in effect if the WACH population exceeds 200,000, the Noatak corridor closure contains no such condition. If the Noatak corridor closure is rescinded and the WACH population in turn exceeds 200,000, Federal public lands throughout Unit 23 would become open to non-federally qualified users year-round. This would result in more user conflicts and interfere with caribou harvest by federally qualified subsistence users.

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APPENDIX 1

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 to Sep. 20.

The Controlled Use Area was expanded in 1994 and modified in 2017 (Betchkal 2015, Halas 2015, ADF&G 2017a). From 1994 to 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 A1**, Betchkal 2015). The closure dates from 1994 to 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 2017a). 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 A1**, 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 A1)**.

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 (**Table A1**, Halas 2015, Fix and Ackerman 2015). Within this zone, transporters can only transport nonlocal caribou hunters after a pre-determined date unless otherwise

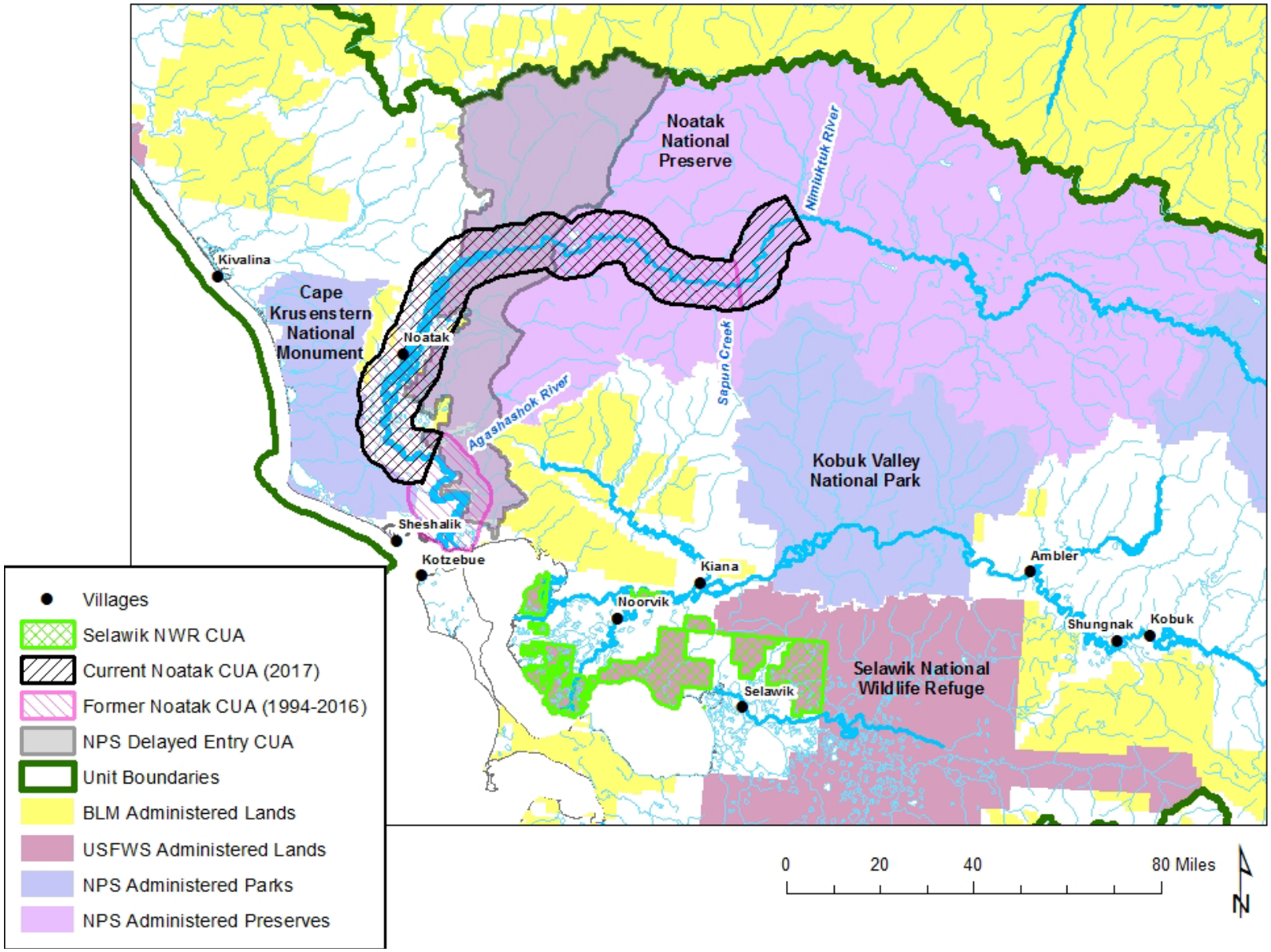
specified by the Western Arctic Parklands (WEAR) Superintendent in consultation with commercial operators, other agencies and local villages (Halas 2015). In 2020, the delayed entry end date was changed from September 15 to September 22 (NPS 2020) in response to requests from the Cape Krusenstern National Monument and Kobuk Valley National Park subsistence resource commissions (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 A1**, FSB 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.

Table A1. Summary of Controlled Use Areas pertaining to caribou in the closure area.

Controlled Use Area	**Time Period**	**Aircraft closure**
Noatak Controlled Use Area (State and Federal subsistence regulations)	Aug. 15—Sep. 30	To transportation of hunters or harvested **species.**
Noatak National Preserve Delayed Entry Controlled Use Area (National Park Service regulations)	Until after Sep. 22	To transportation of nonlocal **caribou** hunters



Map A1. Federal and State Controlled Use Areas in Unit 23.