



SEWARD PENINSULA
SUBSISTENCE REGIONAL
ADVISORY COUNCIL

Meeting Materials

*October 26-27, 2021
via teleconference*



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NPS photo by Neal Herbert

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SEWARD PENINSULA SUBSISTENCE REGIONAL ADVISORY COUNCIL

by teleconference only
October 26-27, 2021, 9:00 a.m. daily

TELECONFERENCE: call the toll free number: **1-866-617-1525**, then when prompted enter the passcode: **54006314**.

PUBLIC COMMENTS: Public comments are welcome for each agenda item and for regional concerns not included on the agenda. The Council appreciates hearing your concerns and knowledge. Time limits may be set to provide opportunity for all to testify and keep the meeting on schedule.

PLEASE NOTE: These are estimated times and the agenda is subject to change. Contact staff for the current schedule. Evening sessions are at the call of the chair.

AGENDA

*Asterisk identifies action item.

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15. Adjourn (*Chair*)

To call into the meeting, call the toll free number: **1-866-617-1525**, then when prompted enter the passcode: **54006314**.

Reasonable Accommodations

The Federal Subsistence Board is committed to providing access to this meeting for all participants. Please direct all requests for special accommodation needs to Karen Deatherage, 907-474-2203 or karen_deatherage@fws.gov or 800-877-8339 (TTY), by close of business on October 19, 2021.

REGION 7
Seward Peninsula Regional Advisory Council

Seat	Yr Apptd Term Expires	Member Name & Community
1	2018 2021	Lloyd S. Kiyutelluk Shishmaref
2	2022	VACANT
3	2010 2022	Louis H. Green, Jr. Chair Nome
4	2003 2022	Tom L. Gray Vice-Chair Nome
5	2017 2023	Deahl Douglas Katchag Unalakleet
6	2016 2023	Leland Harris Oyoumick Unalakleet
7	2020 2023	Martin Abel Aukongak Golovin
8	1994 2021	Elmer K. Seetot Jr. Secretary Brevig Mission
9	2012 2021	Charles Franklin Saccheus Elim
10	2015 2021	Ronald D. Kirk Stebbins

SEWARD PENINSULA SUBSISTENCE REGIONAL ADVISORY COUNCIL

Meeting Minutes

Via Teleconference Due to Covid-19
March 11, 2021

Invocation

Elmer Seetot, Jr. gave an invocation.

Call to Order, Roll Call and Quorum Establishment

The meeting was called to order Thursday, March 11, 2021 at 9:04 a.m. Council members Louis Green, Jr., Tom Gray, Elmer Seetot, Jr., Leland Oyoumick, Deahl Katchatag, Lloyd Kiyutelluk and Martin Aukongak, were present via teleconference. Ron Kirk (excused) and Charles Saccheus (excused) were absent. The Council has one vacant seat. A quorum was established with seven of the nine seated Council members present.

Attendees:

Via teleconference

- Karen Deatherage, Office of Subsistence Management (OSM), Fairbanks
- Brent Vickers, Karen Hyer, Hannah Voorhees, Tom Kron, OSM, Anchorage
- Glenn Chen, Bureau of Indian Affairs (BIA), Anchorage
- Jeanette Koelsch, Ken Adkisson, Nicole Braem, Letty Hughes, Bering Land Bridge National Preserve (BELA), Nome
- Kim Jochum, Victoria Florey, National Park Service (NPS), Anchorage
- Tom Sparks, Brian Uberlaker, Bureau of Land Management (BLM), Nome
- Chris McKee, Bruce Seppi, Bonnie Million, Walker Gusse, BLM, Anchorage
- Diana Stram, National Oceanic and Atmospheric Administration (NOAA)
- Jim Menard, Kevin Clark, Bill Dunker, Alaska Department of Fish and Game (ADF&G), Nome
- Sabrina Garcia, ADF&G, Anchorage
- Mark Burch, ADF&G, Palmer
- Charlie Lean, Northern Norton Sound Advisory Committee, Nome
- Austin Ahmasuk, Nome

Review and Adopt Agenda

Motion by Mr. Gray, seconded by Mr. Seetot, to adopt the agenda as read with the following changes:

- Move Red King Crab issue under New Business
- Add BLM Anchorage Field Office Update

- Add NPS Individual Customary and Traditional Permit Update
- Add Fisheries Resource Monitoring Program (FRMP) Call for Funding Opportunity

The motion passed unanimously.

Elections

Louis Green, Jr. was elected Chair by a unanimous vote

Tom Gray was elected Vice-Chair by a unanimous vote

Elmer Seetot, Jr. was elected Secretary by a unanimous vote

Review and Approve Previous Meeting Minutes

Motion by Mr. Seetot, seconded by Mr. Aukongak, to approve the fall 2020 meeting minutes. The motion passed unanimously.

Council Member and Chair Reports

Mr. Seetot of Brevig Mission reported that snow has been minimal up to this point. There is patchy open tundra, with recent fresh snow on the ground. Caribou were harvested at Kougarok Mountain and Davidson Landing, northeasterly of Brevig Mission. There were prevailing eastern winds all winter. Mr. Seetot stressed that the Federal Subsistence Board (Board) and OSM give residents the opportunities to participate in Regional Council meetings. It's difficult to recruit people to serve on the Councils. He asked to keep the pressure up through the media to encourage participation so that the Councils can continue to give guidance to the Board.

Mr. Oyoumick of Unalakleet reported lots of snow and cold, though the weather was variable with big warm-ups. He stated you never know what is going to happen with the weather anymore. Some Unalakleet residents went north for caribou but had mixed results. Moose season was good. Mr. Oyoumick said he finally got some smelt, but when the ice blows away, the smelt goes away. People have been getting trout and whitefish.

Mr. Kiyutelluk of Shishmaref reported good caribou and moose hunting. There were quite a few wolves catching moose this year. *Oogruk* hunting was limited because of ice conditions. There were seventeen boats hunting *oogruk* in a 5-mile radius until the ice broke up. After Mr. Kiyutelluk got his walrus, he enjoyed a good berry picking season.

Mr. Aukongak of Golovin reported that there was very little snow last winter so there were hardly any berries. There have been plenty of bears; however, since the mid-nineties. Mr. Aukongak believes the wildfires in the south caused the bears to move into his area and now they have a bear problem. Mr. Aukongak would like to get rid of the bears to help the moose and caribou. There's beluga whales and plenty of wolves as well. Mr. Aukongak was recently appointed to the Council and believes that community members need to adapt by understanding regulations. He believes that people are getting

loans to get crab boats and other equipment, and it is hurting the crab population. When he was growing up there were plenty of crabs for everyone. Mr. Aukongak expressed his appreciation for getting on the Council.

Mr. Gray of Nome reported that salmon berries were terrible in the Nome area, and even blueberries had a tough year. All of the ocean weather has changed spring and fall hunts. While freezers are getting filled, it is a challenge to get a beluga whale or *oogruk* landed in current conditions. The moose populations seem to be increasing, but the moose hunts happen so fast because there are only so many animals they can take. If you blink your eye, moose season is over. A two week moose hunting season now only lasts five days. Everyone is having to go a long way to Buckland or Serpentine Hot Springs for caribou. We are in changing times. Mr. Gray spoke to the issue of Red King Crab in Norton Sound. He said that in 2020, subsistence crabbing was a total waste of time. After spending four or five days checking pots, there would only be 1-3 crabs. Mr. Gray grew up on crab and caught huge crabs in the winter. Commercial fishing came in and changed what subsistence users are now catching. Locals were used to a certain class of crabs, and over the past few years they haven't got them. Mr. Gray responded to Mr. Aukongak's discussion on bears and wolves. Mr. Gray believes wolves are doing more to impact the moose populations than bears. He believes they cause moose to move around.

Mr. Green of Nome shared that he was unable to go marine mammal hunting this past spring because of boat motor issues. During the summer months, he picked up some Pink Salmon, but heard a lot of complaints about the lack of Silver and Chum Salmon. Subsistence users are trying to target Chum Salmon and throwing Pink Salmon back into the water. Mr. Green agreed that there are only so many moose in Unit 22 and the hunting season is over in a flash. He believes you have to have certain equipment to be able to access the moose. He reported that his family had a successful moose hunt this year, but there were a lot of hunters who did without. Mr. Green was glad to hear that hunters are targeting bears and wolves, as predation on moose is high. Beluga whales were present, and his family was fortunate to get two. Mr. Green took his son hunting for seal but they were not successful. He also spent days targeting whitefish on the Kuzitrin River, which seem to have up and down cycles these days. Growing up in the old days, Mr. Green could sit by the river and listen to the whitefish jump. Mr. Green is hoping to do a snowmachine trip from Big Lake to Nome. He thinks the wood bison would be something to see along the way. Mr. Green is hearing that subsistence crabbers are not very successful. Before commercial fishing started, you would have to check your lines quick enough or you would lose your crabs. You didn't have time to sit around, and Mr. Green only spent a few hours getting what he needed. Mr. Green believes that Bering Sea fishers really slammed populations down and the crabs have never recovered. Hopefully the Alaska Board of Fisheries (BOF) will take action to turn things around. After commercial fishing started, subsistence has had a tough time getting crabs.

10. Public and Tribal Comment on Non-Agenda Items (available each morning)

Austin Ahmasuk of Nome spoke on the Norton Sound Red King Crab issue. Mr. Ahmasuk shared about approaching the North Pacific Fisheries Management Council (NPFMC) with concerns for the Norton Sound Red King Crab fishery. The NPFMC establishes the Allowable Biological Catch for this region.

Mr. Ahmasuk believes that the NPMFC has the most unfriendly public process in the State of Alaska. The public is frustrated with how the NPMFC works, and believes they do not care about local subsistence users. Mr. Ahmasuk was at the last NPFMC meeting where they instructed subsistence users to go to BOF with problems. Mr. Ahmasuk believes that the NPFMC is very commercial fishery oriented, and that it does not question data from the State of Alaska. He noted that motions pass the NPFMC with very little discussion.

New Business.

ADF&G Reports

- Jim Menard, Kevin Clark, ADF&G, 1) Norton Sound Red King Crab Update, 2) Emergency Order Petition to BOF requesting Red King Crab Fishery 2021 Season Closure and 3) Unit 22 Salmon Updates.
- Bill Dunker, ADF&G, Unit 22 Wildlife Updates
- Rick Merizon, ADF&G, Small Game Updates

(ADF&G was asked to report under New Business due to the Call for Wildlife Proposals and a Council member's schedule)

Call for Wildlife Proposals

Hannah Voorhees, OSM, presented the Call for Wildlife Proposals. The Council did not have any proposals to submit, but did remark they would be making recommendations on proposals submitted by other proponents.

Council Charter Review and Approval

Karen Deatherage, OSM, presented the Council Charter for review and/or amendment.

Motion by Mr. Aukongak, seconded by Mr. Katchatag, to add the following language to the Council's Charter: "Any member of this Advisory Council may serve after the expiration of the member's term until a successor is appointed." The motion passed unanimously.

Finalize FY2020 Annual Report

Karen Deatherage, OSM, presented the Council's draft FY2020 Annual Report.

Motion by Mr. Katchatag, seconded by Mr. Seetot, to finalize the Annual Report as written.

The motion passed unanimously.

Agency/Tribal/Organization Reports:

- Diana Stram, NOAA Bycatch Update
- Sabrina Garcia, ADF&G, Bering Sea Juvenile Salmon Ecology
- Letty Hughes, BELA, Fisheries Resource Monitoring Program (FRMP) Project and BELA Updates
- Victoria Florey, NPS, Individual Customary and Traditional Use Permit Update
- Bonnie Million, BLM, Bering Sea Western Interior Resource Management Plan and Anchorage Field Office Updates
- Tom Sparks, BLM, Veterans Land Act and Big Game Hunting Guide Permit Updates
- Brent Vickers, OSM, Staff/Activity Update and FRMP Notice of Funding Opportunity

Future Meeting Dates:

Fall 2021 meeting to be held October 26-27 in Nome

Winter 2022 meeting to be held March 3-4 in Nome

Karen Deatherage, Designated Federal Officer
USFWS Office of Subsistence Management

Louis Green, Jr., Chair
Seward Peninsula Subsistence Regional Advisory Council

These minutes will be formally considered by the Seward Peninsula Subsistence Regional Advisory Council at its fall, 2021 meeting, and any corrections or notations will be incorporated in the minutes at that meeting.

A more detailed report of this meeting, copies of the transcript, and meeting handouts are available upon request. Call Karen Deatherage at 1-800-478-1456 or 907-474-2203, email karen_deatherage@fws.gov



FISH and WILDLIFE SERVICE
BUREAU of LAND MANAGEMENT
NATIONAL PARK SERVICE
BUREAU of INDIAN AFFAIRS

Federal Subsistence Board

1011 East Tudor Road, MS 121
Anchorage, Alaska 99503 - 6199



FOREST SERVICE

OSM 21052.KD

AUG 26 2021

Louis Green Jr., Chair
Seward Peninsula Subsistence Regional Advisory Council
c/o Office of Subsistence Management
1011 E. Tudor Road, M/S 121
Anchorage, AK 99503-6199

Dear Chairman Green:

The Federal Subsistence Board (Board) met on January 26-29, 2021 via teleconference to consider proposed changes to Federal subsistence management regulations for the harvest of fish and shellfish on Federal Public lands and waters in Alaska, fisheries closure reviews, and a nonrural determination proposal. This letter is to provide a report on the actions taken by the Board on proposals and closure reviews affecting Federally qualified subsistence users.

Section 805(c) of the Alaska National Interest Lands Conservation Act (ANILCA) provides that the Board will accept the recommendations of a Subsistence Regional Advisory Council (Council) regarding take unless, (1) the recommendation is not supported by substantial evidence, (2) the recommendation violates recognized principles of fish and wildlife management, or (3) adopting the recommendation would be detrimental to the satisfaction of subsistence needs. When a Council's recommendation is not adopted, the Board is required by Secretarial regulations to set forth the factual basis and reasons for the decision.

Out of 14 fisheries proposals submitted, one proposal (FP21-04) was withdrawn by the proponent. The Board agreed with the recommendations of the Regional Advisory Councils, in whole or with modifications, on 9 proposals. The Board deferred its decision on Proposal FP21-10 until the next fisheries cycle to allow conflicting user groups to meet and attempt to reach a compromise. The Board reviewed 12 fisheries closure reviews and accepted the recommendations of the Regional Advisory Councils on 10 of 12 fisheries closure reviews. The Board voted to maintain status quo on 2 of them (FCR21-01 and FCR21-22) and to eliminate one of the closures (FCR21-06). The Board deferred 7 of 12 fisheries closure reviews (FCR21-08, -09, -11, -13, -16, -18, and -19) until next fisheries cycle to allow the Council to meet with communities and discuss the closures. The Board deliberated one rural determination proposal RP19-01 and agreed with the Southcentral Alaska Subsistence Regional Advisory Council recommendation with modification.

Details of these actions and the Boards' deliberations are contained in the meeting transcriptions. Copies of the transcripts may be obtained by calling toll free number 1-800-478-1456 and are available online at the Federal Subsistence Management Program website, <https://www.doi.gov/subsistence>.

The Board uses a consensus agenda on those proposals and closure reviews where there is agreement among the affected Regional Advisory Council(s), a majority of the Interagency Staff Committee, and the Alaska Department of Fish and Game concerning a proposed regulatory action. These fisheries proposals and closure reviews were deemed non-controversial and did not require a separate discussion. The consensus agenda contained one fisheries closure review affecting the Seward Peninsula Region, which the Board deferred to the Seward Peninsula Council's (Council) recommendation as follows: The Board maintained the status quo under **FCR21-01**, which closed the Unalakleet River upstream of the confluence of the Chirosky River to the taking of Chinook Salmon for all users.

The remaining closure reviews affecting the Seward Peninsula Region appeared on the non-consensus agenda. The Board's actions on two proposals were inconsistent with the Council's recommendations and are therefore outlined in the attached report.

The Federal Subsistence Board appreciates the Seward Peninsula Council's active involvement in and diligence with the regulatory process. The ten Regional Advisory Councils continue to be the foundation of the Federal Subsistence Management Program, and the stewardship shown by the Regional Advisory Council chairs and their representatives at the Board meeting was noteworthy.

If you have any questions regarding the summary of the Board's actions, please contact Karen Deatherage, Council Coordinator, at 907-474-2203 or karen_deatherage@fws.gov.

Sincerely,



Anthony Christianson,
Chair

Enclosure

cc: Federal Subsistence Board
Seward Peninsula Subsistence Regional Advisory Council members
Sue Detwiler, Assistant Regional Director, Office of Subsistence Management
Amea Howard, Deputy Assistant Regional Director and Acting Fisheries Division Supervisor
Office of Subsistence Management
Robbin La Vine, Policy Coordinator, Office of Subsistence Management
George Pappas, State Subsistence Liaison, Office of Subsistence Management
Katerina Wessels, Council Coordination Division Supervisor
Office of Subsistence Management
Karen Deatherage, Subsistence Council Coordinator, Office of Subsistence Management
Interagency Staff Committee
Administrative Record

FEDERAL SUBSISTENCE BOARD 805(c) REPORT

January 26-29, 2021

Anchorage, Alaska

Section 805(c) of the Alaska National Interest Lands Conservation Act provides that the “Secretary ... shall consider the report and recommendations of the regional advisory councils concerning the taking of fish and wildlife on the public lands within their respective regions for subsistence uses.” The Secretary has delegated authority to issue regulations for the take of fish and wildlife to the Federal Subsistence Board (Board). Pursuant to this language in Section 805(c), the Board defers to the Council’s recommendations. However, Section 805(c) also provides that the Board “may choose not to follow any recommendations which [it] determines is not supported by substantial evidence, violates recognized principles of fish and wildlife conservation, or would be detrimental to the satisfaction of subsistence needs.” The purpose of this report is to detail how the Board’s action differed from the Council’s recommendations based on these criteria.

YUKON NORTHERN AREA FISHERIES CLOSURE REVIEWS

Fisheries Closure Review FCR21-04 – Jim River: All Fish

DESCRIPTION: Closure to the harvest of all fish in the Jim River drainage by Federally qualified subsistence users.

COUNCIL RECOMMENDATIONS:

Seward Peninsula Subsistence Regional Advisory Council – In concurrence with the WIRAC(WIRAC), **support** eliminating the Jim River subsistence closure and modifying regulations to allow rod and reel only, and an Arctic Grayling harvest and possession limit of 10 per day.

Western Interior Alaska Subsistence Regional Advisory Council– **Support** eliminating the Jim River subsistence closure and modifying regulations to allow rod and reel only, and an Arctic Grayling harvest and possession limit of 10 per day.

Eastern Interior Subsistence Regional Advisory Council – **Defer** to WIRAC

North Slope Subsistence Regional Advisory Council – **Defer** to WIRAC

Yukon Kuskokwim Delta Subsistence Regional Advisory Council – **Defer** to WIRAC

BOARD ACTION: Support maintaining closure (status quo).

JUSTIFICATION: During the January 26-29, 2021 Federal Subsistence Board meeting, the Solicitor's office expressed concern that any actions taken by the Board beyond simply eliminating or maintaining the closure would not allow appropriate notice and opportunity for public comment. Further, the Solicitor's Office recommended that changes to the harvest limits and allowable gear types that were recommended by this Council be addressed in the short term by a special action request and in the long term by a proposal that would be submitted during the next regulatory cycle. Based on this advice from the Solicitor's office, the Board voted to maintain the closure in the Jim River drainage with the expectation that a special action request could be submitted by this Council.

The WIRAC can submit a temporary special action requesting that the Board rescind the closure to the harvest of all fish in the Jim Creek drainage by Federally qualified subsistence users and modify regulations to allow rod and reel only, and an Arctic Grayling harvest and possession limit of 10 per day.

Fisheries Closure Review FCR21-07 - Nome Creek: Arctic Grayling

DESCRIPTION: Closure to the harvest of Arctic Grayling in Nome Creek of the Yukon River drainage by Federally qualified subsistence users.

COUNCIL RECOMMENDATIONS:

Eastern Interior Alaska Subsistence Regional Advisory Council (EIRAC) – **Modify the closure** by closing the Nome Creek drainage to the harvest of Grayling by all uses and users.

Western Interior Alaska Subsistence Regional Advisory Council – **Defer** to EIRAC

Seward Peninsula Subsistence Regional Advisory Council – **Defer** to EIRAC

Yukon Kuskokwim Delta Subsistence Regional Advisory Council – **Defer** to EIRAC

North Slope Subsistence Regional Advisory Council – **Defer** to EIRAC

BOARD ACTION: Support maintaining closure (status quo).

JUSTIFICATION: During the January 26-29, 2021 Federal Subsistence Board meeting, the Solicitor's office expressed concern that any actions taken by the Board beyond simply eliminating or maintaining the closure would not allow appropriate notice and opportunity for

public comment. Further, the Solicitor's Office recommended that changes to the harvest limits and allowable gear types recommended by the EIRAC be addressed in the short term by a special action request and in the long term by a proposal submitted during the next regulatory cycle. Based on this advice from the Solicitor's office, the Board voted to maintain the closure in the Nome Creek drainage with the expectation that a special action request could be submitted by the EIRAC. The current sport catch and release fishery does not represent a conservation concern and such concern is not supported by substantial evidence.

The EIRAC can submit a temporary special action requesting that the Board rescind the closure to the harvest of all fish in the Nome drainage by Federally qualified subsistence users, and modify regulations as stipulated above to conserve Arctic grayling. This would provide an opportunity for subsistence harvest and a subsistence priority not currently in regulation.



Federal Subsistence Board

1011 East Tudor Road, MS 121
Anchorage, Alaska 99503 - 6199



FISH and WILDLIFE SERVICE
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FOREST SERVICE

AUGUST 04 2021

OSM 21021.KW

Louis Green, Chair
Seward Peninsula Subsistence
Regional Advisory Council
c/o Office of Subsistence Management
1101 East Tudor Road, MS 121
Anchorage, Alaska 99503-6199

Dear Chairman Green:

This letter responds to the Seward Peninsula Subsistence Regional Advisory Council's (Council) fiscal year 2020 Annual Report. The Secretaries of the Interior and Agriculture have delegated to the Federal Subsistence Board (Board) the responsibility to respond to these reports. The Board appreciates your effort in developing the Annual Report. Annual Reports allow the Board to become aware of the issues outside of the regulatory process that affect subsistence users in your region. We value this opportunity to review the issues concerning your region.

1. Norton Sound Red King Crab Fishery

At its fall meeting held October 27–28, 2020 via teleconference, the Council heard from multiple individuals regarding updated biological data for Red King Crab in Norton Sound. Council members shared their concerns over dwindling subsistence harvests and the long term conservation of Red King Crab in Norton Sound.

Council members and other subsistence users are extremely frustrated with their inability to harvest this important traditional resource, despite the fact that the subsistence crab fishery is open 365 days a year with no size or catch limit. Users reported either a complete absence of crab altogether, or that any good size crab were extremely difficult to locate. One subsistence crabber noted he only caught 20–30 crabs when 200 was the customary harvest needed to feed his family.

Alaska Department of Fish and Game (ADF&G) reported that subsistence harvest of Norton Sound Red King Crab peaked this past decade. Sizable decreases in harvest began in 2017 and 2018, with only 4,000 Red King Crab harvested by Norton Sound subsistence users in 2019. In 2020, there was a marginal subsistence take of just 1,200 Red King Crab in Norton Sound, representing the lowest subsistence harvest in twenty years. Effort was also low, either because some users thought the season was closed to subsistence harvest or users were not interested in small crabs and throwback females. Only 80 permits for subsistence crab fishing were issued in 2020. This is a result of low harvest success.

The current commercial Red King Crab fishery closure sunsetted in December 2020. ADF&G explained that a commercial harvest goal for next season is already in place, with the crab fishery beginning through the ice in February and continuing through the summer. State managers were informed by a recent trawl survey conducted by the ADF&G, which showed that the female cohort and clutch size were larger and closer to normal than the past few years. ADF&G believes that many male Red King Crab increased in size this past year and were able to successfully mate with mature females. ADF&G representatives believe that although the population of legal size crab is currently at a low point, some younger crab will or are molting, and are expected to grow to legal size this coming year.

Based on ADF&G's trawl survey, described above, the Crab Planning Team's recommendations to the North Pacific Fishery Management Council (NPFMC) will be an Allowable Biological Catch of close to 400,000 crab, up nearly 200,000 from last year. The Guideline Harvest Level (GHL) may go up 100,000 pounds from last year's GHL of 170,000. The Council is deeply concerned with the increased GHL recommendation, particularly given that commercial crabbers were only able to harvest 80,000 pounds of the 170,000 GHL for legal sized Red King Crab in 2020.

Charlie Lean, Chair of the Northern Norton Sound Fish and Game Advisory Council, cited that the ADF&G trawl survey only observed three-quarters of the legal sized males compared to the previous year. He stated there is still concern that approximately one-third of mature males are failing to molt and grow because they are spending physical resources breeding. There continues to be a significant lack of mature males to mate with females. This discrepancy, combined with last season's reduced rate of egg fertilization and a market demand for larger than legal size crab, will likely result in a limited commercial opportunity in the near future. Mr. Lean also shared that while some recruitment will occur this year, the bulk of legal size crab readiness will occur in 2022 and thereafter.

The Council believes that allowing both a winter and summer commercial fishery at these levels could harvest most legal sized crab and result in the mortality of many of the sub-legal crab that will be handled during sorting. Handling mortality during winter months is particularly high since frost injury is likely to occur before undersized crab are returned to the water. Additionally, the market for Norton Sound Red King Crab requires crab to be 5 inches across the carapace rather than the legal requirement of 4.75, meaning half of legal size recruitment could be subject to handling mortality. Both subsistence and commercial users of this resource are opposed to this marginal fishery with the vast majority of crab being sub-legal and unmarketable.

The Council is also very disturbed that ADF&G is only “speculating” that the current population of sub-legal crabs will molt this year and become legal during the upcoming fishing season. This is a dangerous gamble for an already depleted resource, and should not be the driving factor behind opening up the crab fishery in 2021 to commercial use. The Council is convinced that years of overharvest have resulted in the collapse of this fishery, and strong conservation measures are necessary to ensure its viability for future use. If commercial harvest is allowed to continue, it could result in the loss of Red King Crab for many years to come. Last year’s reduced reproduction will also contribute to poor recruitment within seven or eight years. The Council also believes there may be environmental impacts to the population from warming ocean temperatures and contamination, in addition to acquiring reliable 2021 Red King Crab population data.

Recommendation:

The Council highly recommends that managers review actual crab statistics in 2021, and based upon that review, recommend whether or not to open the commercial fishery in 2022. The Council is also requesting that research be conducted to further understand how these changes to the ocean environment may be adversely affecting the resource.

The Council is strongly opposed to opening the Norton Sound Red King Crab commercial fishery in 2021. The Council has requested in a letter to the NPFMC that they work with ADF&G, the Alaska Board of Fisheries (BOF) and others to close the Red King Crab fishery in Norton Sound, while encouraging continued research and data gathering to monitor the recovery of this population before opening to any commercial use. The Council believes that commercial fishing for Red King Crab in Norton Sound should only be open when there is verifiable evidence that legal size crab populations have reached sustainable levels. Most importantly, successful subsistence harvest based on historic use and needs should unequivocally be an indicator of

when commercial fishing should resume. Otherwise, failure by ADF&G and the BOF to provide adequate subsistence opportunities for Red King Crab is contrary to management for a subsistence priority for this resource.

Response:

During both the October 27-28, 2020 and March 11, 2021 Council meetings, a significant amount of time was invested in discussing local subsistence users' concerns about the Red King Crab population with managers and experts in this field. The Board appreciates the Council's work in building a public record on the Red King Crab issue while communicating their concerns to the regulatory bodies and managers responsible for management of fisheries targeting this marine species. The Council's transcripts for the meeting will be a valuable resource for those interested in understanding the full discussion.

The Council is encouraged to attend the NPFMC Pacific Northwest Crab Industry Advisory Committee meetings and the Bering Sea/Aleutian Islands Crab Plan Team public meetings and voice their concerns. Meeting information can be found at <https://www.npfmc.org/fishery-management-plan-team/bsai-crab-plan-team/> and <https://www.npfmc.org/pnciac/> and by contacting NPFMC staff Jim Armstrong at 907-271-2805 and Sarah Murrinan at 907-271-2814. Additionally, the Board will request that the USFWS representative on the NPFMC relays Council concerns to the NPFMC.

To change the management of the Norton Sound Red King Crab fisheries, the Council is encouraged to become or continue to be involved with both the State Local Advisory Committee process and the Alaska Board of Fisheries process. Both bodies are the avenue to changing management of the fisheries under both State and Federal (non-ANILCA) jurisdiction. Both of these bodies can also be invited to submit reports or attend the Council's meetings in-person or via teleconference.

2. Seward Peninsula Salmon

Council members are reporting seeing or harvesting very few Silver and Chum Salmon this past summer and fall. One member observed "millions" of Pink Salmon, which may be competing with Silver, Chum and Chinook Salmon for resources. The lack of healthy populations of Silver, Chum and Chinook Salmon are negatively affecting subsistence users throughout the region. Research on these species is lacking due to funding ineligibilities, as well as the motivation to determine what is happening to this critical subsistence resource.

This needed research is not eligible for Fisheries Resource Monitoring Program (FRMP) funding on most tributaries, drainages and rivers in the Seward Peninsula because they are not situated within and adjacent to Federal conservation units. Regardless, the Council expressed the need for salmon research on the Niukluk and Kuchablock Rivers, as well as Bear Creek. Unfortunately, the State of Alaska does not see salmon research or management on these important waters as a priority and have even removed a Chinook Salmon escapement goal for Boston Creek. Despite the fact that fish coming from marine waters migrate largely through State lands, the Council would like to see the type of inventory currently underway in the northern part of the Seward Peninsula occur down in the Nome area and surrounding communities. The Council requested research 10 years ago, but it never materialized. Subsistence users rely on these fish resources, regardless of whether or not they are in State or Federally managed waters.

Recommendation:

The Council would like the Board to encourage the State of Alaska to conduct research on Chinook, Silver and Chum salmon on multiple river drainages in the region that currently do not qualify for research funding under the FRMP. The Council would like the Board to stress that although these drainages do not currently qualify as a Federal nexus for management or research funding, they are critical to subsistence users in the region. The Council would also like the Board to reassess the Federal qualifications for waters in this region. The Council strongly supports a conservative approach to management of these resources, including minimal harvest by local subsistence users, particularly for Chinook Salmon.

Response:

The Board understands the importance of salmon to the residents of the Seward Peninsula as an irreplaceable subsistence resource. To confirm what was stated in your FY20 annual report, the total available FRMP funding is finite and must be focused on projects in waters with a direct nexus to Federal public lands so that it is used effectively to inform Federal subsistence management regulatory decisions. The FRMP Technical Review Committee looks closely at Federal land ownership and the waterway's eligibility for FRMP when it reviews this and all other FRMP proposals.

There are other funding opportunities that may provide funds for research of Chinook salmon such as the Arctic-Yukon-Kuskokwim Sustainable Salmon Initiative (AYK SSI). While the Council cannot apply as a body, the Council can also make recommendations to others to apply and/or suggest funding recommendations to the AYK SSI. There may be other opportunities

through Tribal and non-governmental organizations also working in the area that we encourage the Council to consider.

The Board provides the State with all Councils reports, which include all recommendations pertaining to State research and management of the anadromous salmon systems in your region. The information available to the State from your Council meetings includes discussions with local managers, meeting transcripts, and all information provided during the meetings. This information, in addition to local residents' and some Council members' participation in the State's local AC meetings, provides the State with a robust set of information documenting people's concerns about the status of salmon and their recommendation that the State elevate the priority of these drainages in its research plans.

In closing, I want to thank you and your Council for your continued involvement and diligence in matters regarding the Federal Subsistence Management Program. I speak for the entire Board in expressing our appreciation for your efforts and am confident that the subsistence users of the Seward Peninsula Region are well represented through your work.

Sincerely,



Anthony Christianson
Chair

cc: Seward Peninsula Subsistence Regional Advisory Council
Federal Subsistence Board
Sue Detwiler, Assistant Regional Director, Office of Subsistence Management
Amee Howard, Deputy Assistant Regional Director, Office of Subsistence Management
Robbin La Vine, Subsistence Policy Coordinator, Office of Subsistence Management
Katerina Wessels, Council Coordination Division Supervisor
Office of Subsistence Management
Lisa Grediagin, Wildlife Division Supervisor, Office of Subsistence Management
George Pappas, State Subsistence Liaison and Acting Fisheries Division Supervisor
Office of Subsistence Management
Jonathan Vickers, Anthropology Division Supervisor, Office of Subsistence Management
Karen Deatherage, Council Coordinator, Office of Subsistence Management
Interagency Staff Committee
Benjamin Mulligan, Deputy Commissioner, Alaska Department of Fish and Game
Mark Burch, Special Project Coordinator, Alaska Department of Fish and Game
Administrative Record

Presentation Procedure for Proposals and Closure Reviews

- 1. Introduction and Presentation of Draft Staff Analysis**
- 2. Report on Board Consultations:**
 - a. Tribes
 - b. ANCSA Corporations
- 3. Agency Comments:**
 - a. ADF&G
 - b. Federal
 - c. Tribal
- 4. Advisory Group Comments:**
 - a. Other Regional Advisory Council(s)
 - b. Fish and Game Advisory Committees
 - c. Subsistence Resource Commissions
- 5. Summary of Written Public Comments**
- 6. Public Testimony**
- 7. Regional Council Recommendation (motion to adopt)**
- 8. Discussion/Justification**
 - Is the recommendation consistent with established fish or wildlife management principles?
 - Is the recommendation supported by substantial evidence such as biological and traditional ecological knowledge?
 - Will the recommendation be beneficial or detrimental to subsistence needs and uses?
 - If a closure is involved, is closure necessary for conservation of healthy fish or wildlife populations, or is closure necessary to ensure continued subsistence uses?
 - Discuss what other relevant factors are mentioned in OSM Draft Staff Analysis
- 9. Restate final motion for the record**
- 10. Council's Vote**

WP22-45 Executive Summary

<p>General Description</p>	<p>Wildlife Proposal WP22-45 requests to create specific harvest regulations for Alaska hare (<i>Lepus othus</i>) in Units 18, 22, and 23. <i>Submitted by: Alaska Department of Fish and Game.</i></p>
<p>Proposed Regulation</p>	<p>Unit 18— Hare</p> <p><i>Hare (Snowshoe and Tundra): No limit</i> <i>July 1 – June 30</i></p> <p><i>Alaska Hare: 2 hare per day / 6 per season</i> <i>Sept. 1 – April 15</i></p> <p>Unit 22— Hare</p> <p><i>Hare (Snowshoe and Tundra): No limit</i> <i>Sept. 1 – April 15</i></p> <p><i>Alaska Hare: 2 hare per day / 6 per season</i> <i>Sept. 1 – April 15</i></p> <p>Unit 23— Hare</p> <p><i>Hare (Snowshoe and Tundra): No limit</i> <i>July 1 – June 30</i></p> <p><i>Alaska Hare: 2 hare per day / 6 per season</i> <i>Sept. 1 – April 15</i></p>
<p>OSM Preliminary Conclusion</p>	<p>Support Proposal WP22-45 with modification to shorten the season to Aug. 1 – May 31 and to modify the definition of hare in Federal regulations.</p> <p>The modified regulations should read:</p> <p>§100.25(a) Definitions:</p> <p><i>Hare or hares collectively refers to all species of hares (commonly called rabbits) in Alaska and includes snowshoe hare and tundra or Alaska hare.</i></p> <p>Unit 18— Hare</p> <p><i>Hare (Snowshoe and Tundra): No limit</i> <i>July 1 – June 30</i></p> <p><i>Alaska Hare: 2 hare per day / 6 per season</i> <i>Aug. 1 – May 31</i></p>

	<p>Unit 22— Hare</p> <p><i>Hare (Snowshoe and Tundra): No limit Sept. 1 – April 15</i></p> <p><i>Alaska Hare: 2 hare per day / 6 per season Aug. 1 – May 31</i></p> <p>Unit 23— Hare</p> <p><i>Hare (Snowshoe and Tundra): No limit July 1 – June 30</i></p> <p><i>Alaska Hare: 2 hare per day / 6 per season Aug. 1 – May 31</i></p>
Yukon-Kuskokwim Delta Subsistence Regional Advisory Council	
Seward Peninsula Subsistence Regional Advisory Council	
Northwest Arctic Subsistence Regional Advisory Council	
North Slope Subsistence Regional Advisory Council	
Interagency Staff Committee Comments	
ADF&G Comments	
Written Public Comments	None

DRAFT STAFF ANALYSIS WP22-45

ISSUES

Proposal WP22-45, submitted by Alaska Department of Fish and Game (ADF&G), requests to create specific harvest regulations for Alaska hare (*Lepus othus*) in Units 18, 22, and 23.

DISCUSSION

The proponent states that, the once (as recently as the 1980s) abundant Alaska hare in Units 18, 22, and 23 is now at a very low density and has a patchy distribution throughout the Yukon-Kuskokwim Delta (YKD), Seward Peninsula, and Northwestern Alaska region. In Alaska, the species resides only throughout the extreme western and southwestern portions of the state. Very little is known about the Alaska hare, but the apparent decrease in abundance may have been caused by changes in habitat, predation, human harvest, or other natural cyclical events. Although seemingly more abundant in Units 22 and 23, there are infrequent observations of Alaska hare throughout the YKD and Seward Peninsula. Alaska hares are not highly productive; they have only one, relatively small-sized litter of young per year. The proponent believes that the limited-management approach of the last 50 years no longer sufficiently addresses appropriate conservation of this species. This proposal would reduce hunting opportunity for this species both in terms of season duration and harvest limits. The reduction in harvest may assist Alaska hare populations to increase throughout Units 18, 22, and 23.

The proponent also requested establishing a human use salvage requirement for hare in Units 18, 22 and 23. However, this provision already exists under Federal regulations (see existing Federal regulations section) and is therefore not considered further in this analysis.

Note: The Alaska hare is sometimes called jack rabbits, tundra hare, or arctic hare (e.g. Anderson 1978; Klein 1995; Murray 2003; ADF&G 2019). Federal subsistence regulation uses the term tundra hare, but Alaska hare appears to be the dominate term in contemporary usage, including in State regulation. This analysis uses the terms Alaska hare and tundra hare synonymously. It should also be noted that the Alaska or tundra hare is a distinct species from the snowshoe hare, despite the inclusion of both species in the same Federal regulation.

Existing Federal Regulation

§100.25(j)(2) If you take wildlife for subsistence, you must salvage the following parts for human use:

(iv) The hide or meat of squirrels, hares, marmots, beaver, muskrats, or unclassified wildlife.

Unit 18—Hare

Hare (Snowshoe and Tundra): No limit

July 1-June 30

Unit 22—Hare

Hare (Snowshoe and Tundra): No limit

Sept. 1 – April 15

Unit 23—Hare

Hare (Snowshoe and Tundra): No limit

July 1- June 30

Proposed Federal Regulation

§100.25(j)(2) If you take wildlife for subsistence, you must salvage the following parts for human use:

(iv) The hide or meat of squirrels, hares, marmots, beaver, muskrats, or unclassified wildlife.

Unit 18— Hare

Hare (Snowshoe ~~and Tundra~~): No limit

July 1 – June 30

Alaska Hare: 2 hare per day / 6 per season

Sept. 1 – April 15

Unit 22— Hare

Hare (Snowshoe ~~and Tundra~~): No limit

Sept. 1 – April 15

Alaska Hare: 2 hare per day / 6 per season

Sept. 1 – April 15

Unit 23— Hare

Hare (Snowshoe ~~and Tundra~~): No limit

July 1 – June 30

Alaska Hare: 2 hare per day / 6 per season

Sept. 1 – April 15

Existing State Regulation

Unit 18, 22, 23— Hare

Snowshoe hare: no limit

No closed season

Alaska hare: two per day, six total

Aug 1 – May 31

Hunters must salvage the hide or meat of Alaska hares taken 18, 22, and 23

Relevant Federal Regulation

§100.25(a) Definitions:

Hare or hares collectively refers to all species of hares (commonly called rabbits) in Alaska and includes snowshoe hare and tundra hare.

Extent of Federal Public Lands

Unit 18 is comprised of 66.7% Federal public lands and consist of 64.0% U.S. Fish and Wildlife Service (USFWS) managed lands and 2.7% Bureau of Land Management (BLM) managed lands.

Unit 22 is comprised of 43.5% Federal public lands and consist of 28.1% BLM managed lands, 12.4% NPS managed lands, and 3.0% USFWS managed lands.

Unit 23 is comprised of 70.5% Federal public lands and consist of 39.6% NPS managed lands, 21.8% BLM managed lands, and 9.1% USFWS managed lands.

Customary and Traditional Use Determinations

The Federal Subsistence Board (Board) has not made a customary and traditional use determination for hare in Units 18, 22, and 23. Therefore, all rural residents of Alaska may harvest this species in these units.

Regulatory History

Federal subsistence regulations for hare in Units 18 and 23 have not changed since 1990, when the Federal subsistence management program began. At that time, a year-round season with no harvest limit was adopted from State regulation.

Federal subsistence regulations for hare in Unit 22 were established in 1990, when the Federal subsistence management program began. At that time, a year-round season with no harvest limit was adopted from State regulation.

In 1992, Proposal P92-098 was submitted by a member of the public requesting complete closure of muskrat trapping and hare harvest in Unit 23 until the population rebounded. The proposal was rejected by the Board.

In 1995, Proposal P95-46 was submitted by the Seward Peninsula Subsistence Regional Advisory Council to shorten the season for hares in Unit 22 from July 1 – June 30 to Sept. 1 – April 15. The intent of the proposal was to close the season for hares during the mating, breeding and birthing season. The proposal was adopted by the Board.

ADF&G submitted Proposals 15 and 43 for the Alaska Board of Game's (BOG) consideration during the January 2020 meeting in Nome. Both proposals consisted of two parts. The first part of each proposal was for customary and traditional use findings of Alaska hares in Units 18, 22, and 23. The BOG adopted a positive finding for these units. The second part, noting very low densities and patchy distribution of Alaska hares in the units, ADF&G requested the reduction of season and harvest limits in Units 18 and 22. For consistency the BOG adopted an identical management structure in Units 18, 22, and 23 for the Alaska hare. The State adopted a harvest limit of two per day with a total of six per season and an Aug 1 – May 31 season that required hunters to salvage the hide or meat for human usage (BOG 2020).

Current Events Involving the Species

The ADF&G also submitted Wildlife Proposal WP22-39 to create specific harvest regulations for Alaska hare in Units 9 and 17.

Biological Background

Taxonomy of the three species of northern hares remains unresolved, which almost certainly contributes to the confusion around common names. Current taxonomic descriptions rely on geographic distributions, rather than morphologic or molecular distinctions, which remain ambiguous. The arctic hare (*Lepus arcticus*) is widely distributed across tundra habitats of Greenland and northern Canada. The mountain hare (*L. timidus*) occurs in northern Eurasia, from eastern Russia to Scandinavia (Cason 2016). Alaska hares are limited to coastal western and southwestern Alaska, ranging from the Baldwin and Seward Peninsulas in the north, to the Alaska peninsula in the south (Merizon and Carroll 2019).

Alaska hares are among the largest of the *Lepus* genus, weighing approximately 8.5 – 10.5 pounds (Murray 2003). They occupy coastal lowlands, wet meadows, and willow and alder thickets (Merizon and Carroll 2019), and feed on willow buds, leaves, and crowberries (Murray 2003). They are typically solitary, except during breeding season. Alaska hares reproduce a single litter each year, breeding between April and June and giving birth approximately 6.5 weeks later. Litters contain 6.3 young on average, which are fully weaned within 5 – 9 weeks (Murray 2003). Alaska hares can be identified by the black-tipped ears and are significantly larger than the snowshoe hare (ADG&G 2019).

The Alaska hare is among the most poorly understood wildlife species in Alaska. Hunter

questionnaires have been the only source of information about the species and there has been no long-term population monitoring. Beginning in 2017, ADF&G began to evaluate capture techniques to better understand this species. They also embarked on a tour of rural communities throughout the range of the Alaska hare to discuss local observations, historical abundance, and harvest patterns. In 2018, a multi-year study was initiated to evaluate movement and mortality, as well as long-term capture techniques. Anecdotal observations suggest that Alaska hare abundance is well below that observed in the 1950s and 1960s, throughout its range. It is unknown whether the population has been in a long-term decline, or whether it experienced a crash and now exists as a low density but relatively stable population (Merizon and Carroll 2019).

Harvest History

Little is known about the harvest of Alaska hare, which is one of the least accessible small game species. However, it is harvested throughout the communities of western and southwestern Alaska as documented in household harvest surveys (Merizon and Carroll 2019, **Table 1**). Some insights into small game harvest are available in ADF&G's Statewide Small Game Hunter Survey, results for which were compiled for RY2011/12 and RY2013/14.

The most recent results, from RY2013/14, show that half of the hunters responding to the survey reported hunting small game in Units 13, 14 or 20, while only about 6% of respondents reported hunting small game in Unit 18, about 4% in Unit 22 and about 3% in Unit 23. While response rates of those receiving surveys were lower for the Western Rural area, which includes Units 18, 22, and 23 (16%) versus statewide (30%). Most Alaska resident respondents reported hunting within the geographic region where they reside, but only 3% of respondents statewide reported participating in Federal subsistence small game hunts. Respondents reported that they hunt small game opportunistically while engaging in other activities, but also target small game specifically. Statewide, ptarmigan and spruce grouse were targeted most frequently. Within the Western Rural geographical area, respondents reported hunting for Alaska hare for an average of 2.5 days each year (Merizon et al. 2015).

Table 1: Alaska hare harvest by community (Mikow et al. 2020)

Unit 18			Unit 22			Unit 23		
Community	Study Year	Estimated total Harvest	Community	Study Year	Estimated total Harvest	Community	Study Year	Estimated total Harvest
Akiachak	1998	0	Brevig Mission	1989	6	Ambler	2012	0
Akiak	2010	42	Golovin	1989	4	Buckland	2003	16
Alakanuk	1980	669		2012	0	Deering	1994	12
Bethel	2012	173	Shishmaref	1989	112		2013	3
Eek	2013	7		1995	62	Kiana	2006	0
Emmonak	1980	806		2014	16	Kivalina	1964	0
	2008	24	Stebbins	1980	110		1982	0
Kotlik	1980	552		2013	2		1983	0
Kwethluk	2010	52	Wales	1993	1		1992	0
Mountain Village	1980	66				Kobuk	2009	4
	2010	63					2012	0
Napakiak	2011	43				Kotzebue	1986	64
Napaskiak	2011	20					1991	97
Nunam Iqua (Sheldon Point)	1980	92					2014	0
Oscarville	2010	0				Noatak	1994	0
Pilot Station	2013	0				Noorvik	2008	0
							2012	31

Unit 18		
Quinhagak	1982	82
	2013	15
Russian Mission	2011	2
Scammon Bay	2013	165
Tuluksak	2010	20
Tuntutuliak	2013	0

Unit 23		
Selawik	2011	4
Shungnak	2002	0
	2012	0

*Note- Some Community/Study years not included in this table only showed harvest for “Hares, Jackrabbits, Unknown.” Actual harvest maybe higher.

Effects of the Proposal

If this proposal is adopted, opportunity to harvest Alaska hares under Federal subsistence regulation would be reduced. Given that the State season has already been reduced for Units 18, 22, and 23, this represents an actual reduction of opportunity for Federally qualified subsistence users. This change would result in reduced harvest of Alaska hare, particularly since it includes both a daily and an annual harvest limit. Though neither harvest nor population size are quantified, harvest reduction has the potential to improve the conservation status of Alaska hare populations in Units 18, 22, and 23, which are reported to be well below historical size. Adoption of this proposal would also result in Federal regulations becoming more restrictive than State regulations.

OSM PRELIMINARY CONCLUSION

Support Proposal WP22-45 **with modification** to shorten the season to Aug. 1 – May 31 and to modify the definition of hare in Federal regulations.

The modified regulations should read:

§100.25(a) Definitions:

*Hare or hares collectively refers to all species of hares (commonly called rabbits) in Alaska and includes snowshoe hare and tundra **or Alaska** hare.*

Unit 18— Hare

Hare (Snowshoe ~~and Tundra~~): No limit *July 1 – June 30*

Alaska Hare: 2 hare per day / 6 per season *Aug. 1 – May 31*

Unit 22— Hare

Hare (Snowshoe ~~and Tundra~~): No limit *Sept. 1 – April 15*

Alaska Hare: 2 hare per day / 6 per season *Aug. 1 – May 31*

Unit 23— Hare

Hare (Snowshoe ~~and Tundra~~): No limit *July 1 – June 30*

Alaska Hare: 2 hare per day / 6 per season *Aug. 1 – May 31*

Justification

Anecdotal information indicates that Alaska hares in Units 18, 22, and 23 are scarcer than they have been in the past. Biologically, it is appropriate to restrict harvest in such a situation. Reducing the season from Jul. 1 – Jun. 30 to Aug. 1 – May 31 reduces the season by approximately 16%, yet continues to offer subsistence users the opportunity to harvest Alaska hares during fall, winter, and spring when they are engaging in other subsistence or recreational activities. The proponent requested a season which would be more restrictive than existing State regulations. Additionally, Federal qualified subsistence users would still be able to harvest Alaska hare in August and May under the more liberal State regulations. This modification would align State and Federal seasons, reducing regulatory complexity and user confusion.

Imposing a harvest limit of 2 per day and 6 annually may have a greater effect on reducing overall harvest and promoting population recovery than shortening the season. Collectively, changes in season and harvest limit offer a balance between imposing conservation measures and allowing for the continuation of subsistence uses in the near term. Any positive effect these changes have on the Alaska hare population will benefit subsistence users in the long term.

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WP22-50 Executive Summary	
General Description	Wildlife Proposal WP22-50 requests the beaver harvest limit be changed from 50 and 30 beaver in Unit 23, Kobuk and Selawik River drainages and Unit 23 remainder, respectively, to no harvest limit in both trap areas. <i>Submitted by: Northwest Arctic Subsistence Regional Advisory Council</i>
Proposed Regulation	<p>Unit 23—Beaver Trapping</p> <p><i>Unit 23, the Kobuk and Selawik River drainages— July 1-June 30</i> 50 beaver No limit</p> <p><i>Unit 23, remainder—30 beaver</i> No limit <i>July 1-June 30</i></p>
OSM Preliminary Conclusion	<p>Support Proposal WP22-50 with modification to combine Unit 23 trap areas.</p> <p>The modified regulations should read:</p> <p>Unit 23—Beaver Trapping</p> <p><i>Unit 23, the Kobuk and Selawik River drainages—50 beaver</i> No limit <i>July 1-June 30</i></p> <p><i>Unit 23, remainder—30 beaver</i> <i>July 1-June 30</i></p>
Northwest Arctic Subsistence Regional Advisory Council	
North Slope Subsistence Regional Advisory Council	
Kodiak/Aleutians Subsistence Regional Advisory Council	
Interagency Staff Committee Comments	
ADF&G Comments	
Written Public Comments	None

**DRAFT STAFF ANALYSIS
WP22-50**

ISSUES

Proposal WP22-50, submitted by the Northwest Arctic Subsistence Regional Advisory Council, requests the beaver harvest limit be changed from 50 and 30 beaver in Unit 23, Kobuk and Selawik River drainages and Unit 23 remainder, respectively, to no harvest limit in both trap areas.

DISCUSSION

The proponent states that the proposed changes would align Federal beaver trapping regulations with the more liberal State regulations as well as provide increased harvest opportunity for Federally qualified subsistence users.

Existing Federal Regulation

Unit 23—Beaver Trapping

Unit 23, the Kobuk and Selawik River drainages—50 beaver *July 1-June 30*

Unit 23, remainder—30 beaver *July 1-June 30*

Proposed Federal Regulation

Unit 23—Beaver Trapping

Unit 23, the Kobuk and Selawik River drainages—~~50 beaver~~ No limit *July 1-June 30*

Unit 23, remainder—~~30 beaver~~ No limit *July 1-June 30*

Existing State Regulation

Unit 18, 22, and 23—Beaver Trapping

Residents and Non-residents: No Limit

No Closed Season

Extent of Federal Public Lands

Federal public lands comprise approximately 70.53% of Unit 23 and consists of 9.14% U.S. Fish and Wildlife Service (FWS) managed lands, 21.77% Bureau of Land Management (BLM) managed lands, and 39.61% National Park Service (NPS) managed lands.

Customary and Traditional Use Determinations

The Federal Subsistence Board has not made a customary and traditional use determination for beaver in Unit 23. Therefore, all rural residents of Alaska may harvest this species in this unit.

Regulatory History

There has been a general trend for liberalize trapping and hunting regulation in Unit 23. Federal regulations for beaver trapping in Unit 23 Kobuk and Selawik River drainages (Unit 23 Kobuk/Selawik) and Unit 23 remainder were adopted from State regulations in 1990. The season for both trap areas ran from Nov. 1-June 10. The harvest limits for Unit 23 Kobuk/Selawik and Unit 23 remainder were 50 and 30 beaver per season, respectively.

In 1992, Proposal P92-096 was submitted requesting an increase of harvest limits for beaver in Unit 23 remainder from 50 beaver to a harvest limit of 75 beaver per season. The intent of the proposal was to reduce the number of beaver and the associated dams that were thought to be impacting whitefish. The proposal was not based on subsistence need, but on a desire to control one animal population for the benefit of another. Federal subsistence management regulations govern the take and use of wildlife for subsistence uses only and, as a result, the proposal was rejected as outside the authority of the Federal Subsistence Board (Board).

In 1993, the Federal Subsistence Board (Board) adopted Proposal P93-009 requesting to place the dates of all seasons in which beavers could be taken with firearms within the same sections to make the regulations easier to read. Adopting the proposal did not change subsistence seasons, harvest limits, or methods and means.

In 1999, the Alaska Board of Game (BOG) during their fall meeting adopted a year-round hunting season for beaver in Unit 23 with no harvest limit or sealing requirement. In addition, the trapping season was extended to year round with no harvest limit and no sealing requirement. At the spring 2000 BOG meeting beaver was defined as a 'fur animal' and adopted in regulation. The designation of beaver as a 'fur animal', as well as a 'furbearer', allows take under hunting and trapping regulations, respectively. These regulations went into effect July 1, 2000.

In 2007, the Board adopted Proposal WP07-51 requesting a hunting season for beaver in Unit 23 with no closed season, and no harvest limit. The intent of the proposal was to accommodate subsistence hunting during the spring, summer and fall for food and fur and to align Federal and State regulations.

Biological Background

State management goals and objectives for furbearers in Unit 23 are as follows (Harper and McCarthy 2013):

- Maintain viable numbers of furbearers to provide for subsistence, commercial and recreational uses of furbearers.
- Monitor harvest through the fur sealing program, annual hunter/trapper questionnaires and community-based harvest assessments
- Actively work to increase the number of license vendors and fur sealers in Unit 23
- Improve compliance with current sealing requirements through increased public communication and education.

Arctic landscapes are in transition due to changes in the climate. Increased warmth in the summers and longer growing seasons are contributing to increasing tundra productivity and shrub-dominated vegetation. Beavers have increasingly moved into tundra areas during the past 20 years. The abundance of beaver colonization into the tundra is increasing beavers' influences on waterbodies (Jones et al 2020).

Beaver numbers remain high in Unit 23, particularly in the Selawik and Kobuk river drainages. In these drainages, beavers have fully occupied high quality habitat and now widely occur in marginal areas as well. Local residents are concerned about beavers damming streams important for subsistence fishing and about the threat of giardia in their drinking water (Harper and McCarthy 2013).

Harvest History

Current harvest data is limited because few people have sealed pelts since the Alaska Department of Fish and Game (ADF&G) made beaver sealing requirements voluntary for Unit 23 in 2000 (**Figure 1**). The most recent community harvest surveys in the ADF&G Community Subsistence Information System is 2014 (**Table 1**, ADF&G. 2021), which demonstrates that the reported harvest greatly underestimates actual harvest (ADF&G 2010, 2012, 2013a, 2013b, Parr 2016, 2017, 2018, Spivey 2019, 2020). The data suggests that beaver harvesting varies greatly by year and community.

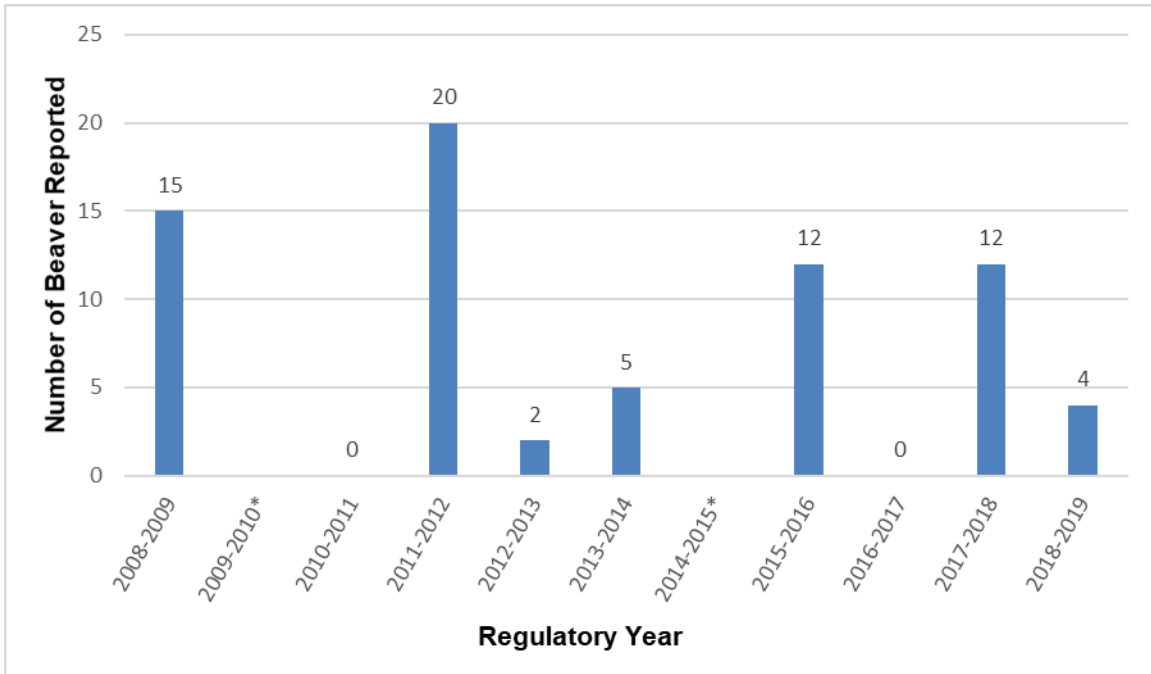


Figure 1. Number of beavers reported harvested in Unit 23 (ADF&G 2010, 2012, 2013a, 2013b, Parr 2016, 2017, 2018, Spivey 2019, 2020). *No report was written for 2009/10, 2014/2015.

Table 1. ADF&G Community subsistence harvest reported in Unit 23 (ADF&G 2021)

Year	Community	Reported Harvest
2010	Kivalina	0
2010	Noatak	4
2011	Selawik	120
2012	Ambler	116
2012	Kobuk	56
2012	Noovik	110
2012	Shungnak	68
2013	Deering	0
2014	Kotzebue	85
2014	Point Hope	0

Effects of the Proposal

If this proposal is adopted, the beaver harvest limit would be changed from 50 and 30 beaver per season in Unit 23 Kobuk/Selawik and Unit 23 remainder, respectively, to no harvest limit in both trap areas.

No impacts to the beaver population or user groups is expected as Federally qualified subsistence users can already trap an unlimited number of beavers on most (non-National Park) Federal lands under the more liberal State regulations. Additionally, adoption of this proposal would align Federal and State regulations, reducing the regulatory complexity for users.

OSM PRELIMINARY CONCLUSION

Support Proposal WP22-50 with **modification** to combine Unit 23 trap areas.

The modified regulations should read:

Unit 23—Beaver Trapping

Unit 23, the Kobuk and Selawik River drainages—50 beaver **No limit** *July 1-June 30*

Unit 23, remainder—30 beaver— *July 1-June 30*

Justification

Beaver populations appear stable at high levels (or even expanding) in Unit 23, and harvest levels do not appear to be having any negative impacts on beaver populations. Federally qualified subsistence users are already able to trap on most Federal public lands under the more liberal State regulations. Adopting this proposal would provide Federally qualified subsistence users with additional harvest opportunities for beaver trapping under Federal regulations. Combining Unit 23 Kobuk/Selawik and Unit 23 remainder trap areas would help simplify Federal regulations. Additionally, Federal and State regulations for beaver trapping in Unit 23 would be aligned, reducing regulatory complexity.

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WP22-47 Executive Summary

General Description	Proposal WP22-47 requests that calf harvest be permitted for caribou in Unit 22. <i>Submitted by: Western Arctic Caribou Herd Working Group</i>
Proposed Regulation	See page 43
OSM Preliminary Conclusion	Support
Yukon-Kuskokwim Delta Subsistence Regional Advisory Council Recommendation	
Western Interior Alaska Subsistence Regional Advisory Council Recommendation	
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 STAFF ANALYSIS
WP22-47

ISSUES

Proposal WP22-47 submitted by the Western Arctic Caribou Herd (WACH) Working Group requests that calf harvest be permitted for caribou in Unit 22.

DISCUSSION

The proponent states that the intent of this proposal is to allow for the harvest of orphaned calves, and that this regulation change would align Federal and State regulations.

Existing Federal Regulation

Unit 22—Caribou

<i>Unit 22B, that portion west of Golovnin Bay and west of a line along the west bank of the Fish and Niukluk Rivers to the mouth of the Libby River, and excluding all portions of the Niukluk River drainage upstream from and including the Libby River drainage—5 caribou per day by State registration permit. Calves may not be taken</i>	<i>Oct. 1-Apr. 30. May 1-Sep. 30, a season may be announced</i>
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<i>Units 22A, that portion north of the Golsovia River drainage, 22B remainder, that portion of Unit 22D in the Kuzitrin River drainage (excluding the Pilgrim River drainage), and the Agiapuk River drainages, including the tributaries, and Unit 22E, that portion east of and including the Tin Creek drainage—5 caribou per day by State registration permit. Calves may not be taken</i>	<i>July 1-June 30</i>
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<i>Unit 22A, remainder—5 caribou per day by State registration permit. Calves may not be taken</i>	<i>July 1-June 30, season may be announced</i>
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<i>Unit 22D, that portion in the Pilgrim River drainage—5 caribou per day by State registration permit. Calves may not be taken</i>	<i>Oct. 1-Apr. 30. May 1-Sep. 30, season may be announced</i>
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<i>Units 22C, 22D remainder, 22E remainder—5 caribou per day by State registration permit. Calves may not be taken</i>	<i>July 1-June 30, season may be announced</i>
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Proposed Federal Regulation

Unit 22—Caribou

<p><i>Unit 22B, that portion west of Golovnin Bay and west of a line along the west bank of the Fish and Niukluk Rivers to the mouth of the Libby River, and excluding all portions of the Niukluk River drainage upstream from and including the Libby River drainage—5 caribou per day by State registration permit. Calves may not be taken</i></p>	<p><i>Oct. 1-Apr. 30.</i></p>
	<p><i>May 1-Sep. 30, a season may be announced</i></p>
<p><i>Units 22A, that portion north of the Golsovia River drainage, 22B remainder, that portion of Unit 22D in the Kuzitrin River drainage (excluding the Pilgrim River drainage), and the Agiapuk River drainages, including the tributaries, and Unit 22E, that portion east of and including the Tin Creek drainage—5 caribou per day by State registration permit. Calves may not be taken</i></p>	<p><i>July 1-June 30</i></p>
<p><i>Unit 22A, remainder—5 caribou per day by State registration permit. Calves may not be taken</i></p>	<p><i>July 1-June 30, season may be announced</i></p>
<p><i>Unit 22D, that portion in the Pilgrim River drainage—5 caribou per day by State registration permit. Calves may not be taken</i></p>	<p><i>Oct. 1-Apr. 30.</i></p>
	<p><i>May 1-Sep. 30, season may be announced</i></p>
<p><i>Units 22C, 22D remainder, 22E remainder—5 caribou per day by State registration permit. Calves may not be taken</i></p>	<p><i>July 1-June 30, season may be announced</i></p>

Existing State Regulation

Unit 22—Caribou

<p><i>22A, north of the Golsovia River drainage</i></p>	<p><i>Residents—Twenty caribou total, up to 5 per day. Permit available online at http://hunt.alaska.gov or in person in Nome and license vendors within Unit 22 beginning June 22</i></p>	<p><i>Bulls</i></p>	<p><i>RC800</i></p>	<p><i>no closed season</i></p>
		<p><i>Cows</i></p>	<p><i>RC800</i></p>	<p><i>July 1-Mar. 31</i></p>
	<p><i>Nonresidents—one bull</i></p>		<p><i>HT</i></p>	<p><i>Aug. 1-Sept. 30</i></p>

Unit 22—Caribou

22A remainder	Residents—Twenty caribou total, up to 5 per day. Bulls may not be taken Oct 15-Jan 31, and cows may not be taken Apr 1-Aug 31. Permit available online at http://hunt.alaska.gov or in person in Nome and license vendors within Unit 22 beginning June 22	RC800	May be announced
	Nonresidents—one bull	HT	May be announced
Unit 22B, west of Golovnin Bay, west of the west banks of Fish and Niukluk rivers below the Libby	Residents—Twenty caribou total, up to 5 per day. Permit available online at http://hunt.alaska.gov or in person in Nome and license vendors within Unit 22 beginning June 22	Bulls	RC800 Oct. 1-Apr. 30
river (excluding the Libby River drainage and Niukluk River drainage above the mouth of the Libby River)	Residents- Twenty caribou total, up to 5 per day. Cows may not be taken Apr 1-Aug 31. Permit available online at http://hunt.alaska.gov or in person in Nome and license vendors within Unit 22 beginning June 22	Cows	RC800 Oct. 1-Mar. 31
	Nonresidents: one bull	HT	may be announced
22B remainder	Residents—Twenty caribou total, up to 5 per day. Permit available online at http://hunt.alaska.gov or in person in Nome and license vendors within Unit 22 beginning June 22	Bulls	RC800 no closed season
		Cows	RC800 July 1-Mar. 31
	Nonresidents—one bull	HT	Aug. 1-Sept. 30

Unit 22—Caribou

22C	Residents—Twenty caribou total, up to 5 per day. Bulls may not be taken Oct 15-Jan 31, and cows may not be taken Apr 1-Aug 31. Permit available online at http://hunt.alaska.gov or in person in Nome and license vendors within Unit 22 beginning June 22	RC800	May be announced
	Nonresidents—one bull	HT	May be announced
22D Pilgrim River drainage	Residents—Twenty caribou total, up to 5 per day. Permit available online at http://hunt.alaska.gov or in person in Nome and license vendors within Unit 22 beginning June 22	Bulls	RC800 Oct. 1-Apr. 30
		Cows	RC800 Oct. 1-Mar. 31
	Residents- Twenty caribou total, up to 5 per day. Cows may not be taken Apr 1-Aug 31. Permit available online at http://hunt.alaska.gov or in person in Nome and license vendors within Unit 22 beginning June 22		RC800 may be announced
	Nonresidents: one bull		HT may be announced
22D, in the Kuzitrin River drainage (excluding the Pilgrim River drainage) and the Agiapuk river drainage	Residents—Twenty caribou total, up to 5 per day. Permit available online at http://hunt.alaska.gov or in person in Nome and license vendors within Unit 22 beginning June 22	Bulls	RC800 no closed season
		Cows	RC800 July 1-Mar. 31
	Nonresidents—one bull		HT Aug. 1-Sept. 30

Unit 22—Caribou

22D remainder	Residents—Twenty caribou total, up to 5 per day. Bulls may not be taken Oct 15-Jan 31, and cows may not be taken Apr 1-Aug 31. Permit available online at http://hunt.alaska.gov or in person in Nome and license vendors within Unit 22 beginning June 22	RC800	May be announced
	Nonresidents—one bull	HT	May be announced
22E, east of and including the Sanaguich River drainage	Residents—Twenty caribou total, up to 5 per day. Permit available online at http://hunt.alaska.gov or in person in Nome and license vendors within Unit 22 beginning June 22	Bulls	RC800 no closed season
		Cows	RC800 July 1-Mar. 31
	Nonresidents—one bull	HT	Aug. 1-Sept. 30
22E remainder	Residents—Twenty caribou total, up to 5 per day. Bulls may not be taken Oct 15-Jan 31, and cows may not be taken Apr 1-Aug 31. Permit available online at http://hunt.alaska.gov or in person in Nome and license vendors within Unit 22 beginning June 22	RC800	May be announced
	Nonresidents—one bull	HT	May be announced

Extent of Federal Public Lands/Waters

Unit 22 is comprised of 43% Federal public lands and consist of 28% Bureau of Land Management (BLM) managed lands, 12% National Park Service (NPS) managed lands and 3% U.S. Fish and Wildlife Service (USFWS) managed lands.

Customary and Traditional Use Determinations

Residents of Units 21D west of the Koyukuk and Yukon Rivers, 22 (except residents of St. Lawrence Island), 23, 24, Kotlik, Emmonak, Hooper Bay, Scammon Bay, Chevak, Marshall, Mountain Village,

Pilot Station, Pitka's Point, Russian Mission, St. Marys, Nunam Iqua, and Alakanuk have a customary and traditional use determination for caribou in Unit 22A.

Residents of Units 21D west of the Koyukuk and Yukon Rivers, 22 (excluding residents of St. Lawrence Island), 23, and 24 have a customary and traditional use determination for caribou in Unit 22 remainder.

Regulatory History

In 1990, the Federal caribou hunting seasons in Units 22A and 22B were open year-round with a 5 caribou/day harvest limit and a restriction on the take of cows May 16 — June 30. There was no open caribou season in Units 22C, 22D and 22E.

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 2003, the Board adopted Proposal WP03-40 with modification to establish a harvest season of July 1 — June 30 and a 5 caribou per day harvest limit in portions of Units 22D and 22E. This was done because caribou had expanded their range into these subunits and harvest was not expected to impact the caribou or reindeer herds, to provide additional subsistence hunting opportunities and to align State and Federal regulations.

In 2006, the Board adopted Proposal WP06-37 with modification, which designated a new hunt area in Unit 22B with an open season of Oct. 1 — Apr. 30 and a closed season from May 1 — Sept. 30 unless opened by a Federal land manager. This was done to prevent incidental take of privately-owned reindeer and to reduce user conflicts.

In 2013, an aerial photo census indicated significant declines in the WACH population (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, including Units 22, 23, and 26A. 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.

In 2016, the Board considered Proposal WP16-37, which requested that Federal caribou regulations mirror the new State regulations across the range of the WACH (Units 21D, 22, 23, 24 and 26A). 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.) in some areas, to create new hunt areas and to establish new seasons in Unit 22.

In 2016, the BOG adopted Proposal 140 as amended to make the following changes to Unit 22 caribou regulations: establish a registration permit hunt (RC800), set an annual harvest limit of 20 caribou total and lengthen cow and bull seasons in several hunt areas.

In 2018, the Board 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.

In January 2020, the BOG 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. 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.

Biological Background

Caribou abundance naturally fluctuates over decades (Gunn 2001, WACH Working Group 2011). Gunn (2001) 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 2001, 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 2001).

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 Fest-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 1**, Dau 2011, WACH Working Group 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. In the fall, the majority of the herd generally moves south toward wintering grounds south of the Brooks Range (Joly 2021, pers. comm.). Rut occurs during fall migration (Dau 2011, WACH Working Group 2011).

In recent years, the timing of fall migration has been less predictable. From 2010-2019, the average dates that GPS collared caribou crossed the Noatak River ranged from Sep. 6 – Oct. 13; the Kobuk River ranged from Sep. 24 – Nov. 3; and the Selawik River ranged from Oct. 2 – Nov. 10 (Joly and Cameron 2020). From 2010-2016, caribou migration was trending to occur earlier in the year. However, from 2017-2019, caribou crossed the Noatak River, but then there was substantial delay before caribou crossed the Kobuk and Selawik Rivers. This appears to have been the case for 2020 as well. During the fall 2020 Northwest Arctic Regional Advisory 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. While data has yet to be analyzed, the first GPS collared caribou did not cross the Kobuk River until November, which is the latest first crossing since data collection began in 2010 (July 2021, pers. comm.). Reasons for changes in migration phenology are unknown.

The proportion of caribou using certain migration paths also varies each year (Joly and Cameron 2020). 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 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 the National Park Service (NPS), USFWS, BLM and the Alaska Department of Fish and Game (ADF&G) personnel. The WACH Working Group developed a WACH Cooperative Management Plan in 2003 and revised it in 2011 and 2019 (WACH Working Group 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 1**).

The WACH population declined rapidly in the early 1970s, reaching a low estimate of 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 1**). 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 plans to conduct a census in 2021 (WACH Working Group 2020).

Between 1982 and 2011, the WACH population was within the liberal management level prescribed by the WACH Working Group (**Figure 1, 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 where it has remained. In 2020, no photocensus was completed, and the WACH Working Group voted to maintain the herd's status at the conservative declining level (WACH Working Group 2020).

Between 1970 and 2017, the bull:cow ratio exceeded Critical Management levels identified in the 2019 WACH Management Plan (**Figure 2**). 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). 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 3**, 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 4**, Dau 2016a). The average June calf:cow ratio increased to 79 calves:100 cows between 2017 and 2020. 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). However, in 2020 the June calf:cow ratio dropped to 67 calves:100 cows (WACH Working Group 2020).

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 4**). 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).

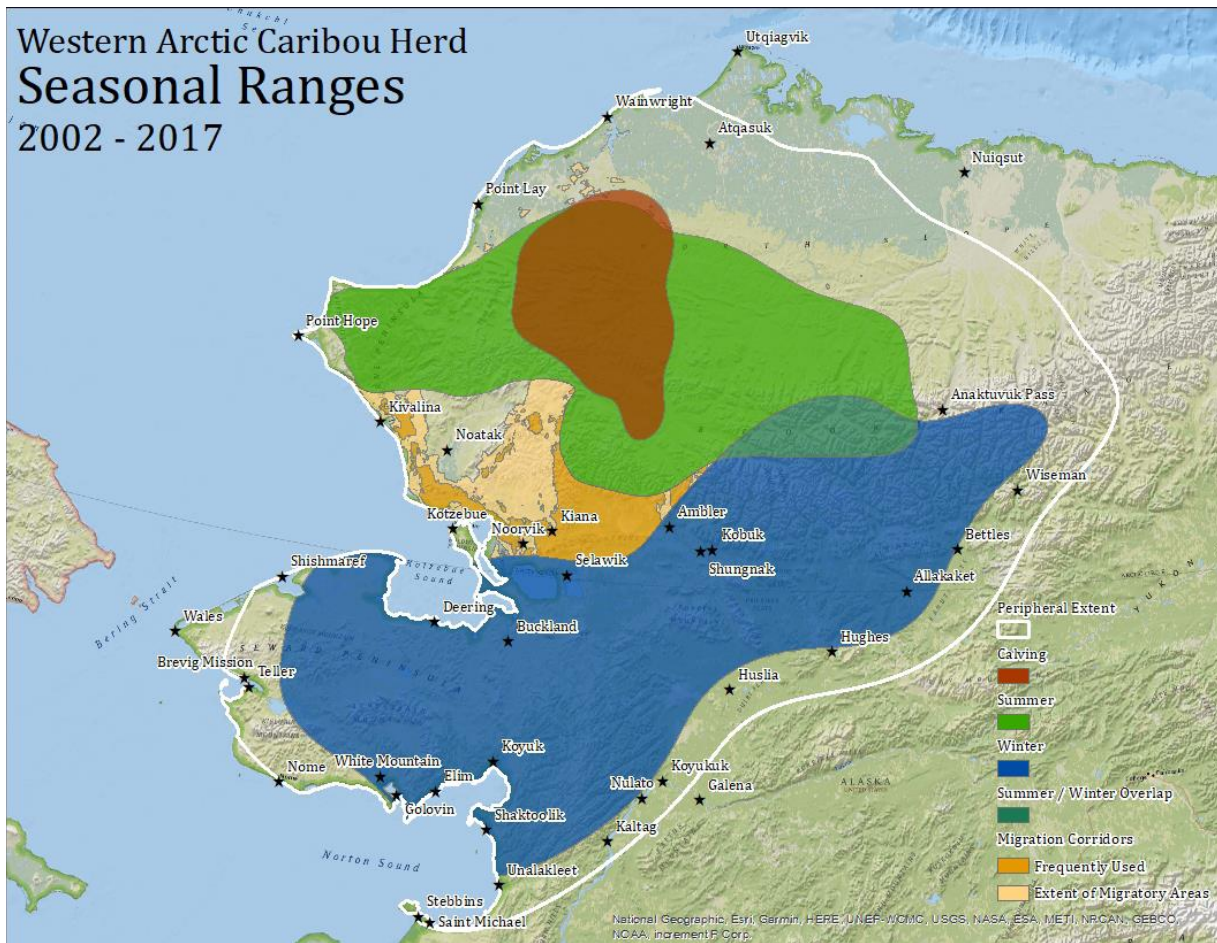
Similarly, the ratio of short yearlings (SY, 10-11 months old caribou) to adults provides a measure of overwintering calf survival and recruitment. Between 1990 and 2020, SY:adult ratios ranged from 9-26 and averaged 18 SY:100 adults/year (**Figure 4**). SY:100 adult ratios were high from 2016-2018, ranging from 22-23 SY:100 adults (Dau 2016b, NWARAC 2019). The 2020 SY:adult ratio was 17 SY:100 adults (WACH Working Group 2020).

Cow mortality affects the trajectory of the herd (Dau 2011, 2013, Prichard 2009, NWARAC 2019). 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 3**, 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 2019) 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. These estimates are also susceptible to collar sample size and how long the collars have been on individuals (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). Additionally, Prichard (2009) and Dau (2015) suggest the harvest 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.

Dau (2015) speculates that fall and winter icing events were the primary factor initiating the population decline in 2003. Increased predation, hunting pressure, deteriorating range condition (including habitat loss and fragmentation), climate change and disease may also be contributing factors (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. 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 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.).

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 1. Western Arctic Caribou Herd seasonal range map, 2002-2017 (image from WACH Working Group 2019).

Table 1. 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+	Pop: 230,000+	Pop: 200,000+	<ul style="list-style-type: none"> • 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
	Harvest: 14,000+	Harvest: 14,000+	Harvest: 14,000+	
Conservative	Pop: 200,000-265,000	Pop: 170,000-230,000	Pop: 150,000-200,000	<ul style="list-style-type: none"> • 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
	Harvest: 10,000-14,000	Harvest: 10,000-14,000	Harvest: 10,000-14,000	
Preservative	Pop: 130,000-200,000	Pop: 115,000-170,000	Pop: 100,000-150,000	<ul style="list-style-type: none"> • 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
	Harvest: 6,000-10,000	Harvest: 6,000-10,000	Harvest: 6,000-10,000	
Critical	Pop: <130,000	Pop: <115,000	Pop: <100,000	<ul style="list-style-type: none"> • 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
	Harvest: <6,000	Harvest: <6,000	Harvest: <6,000	

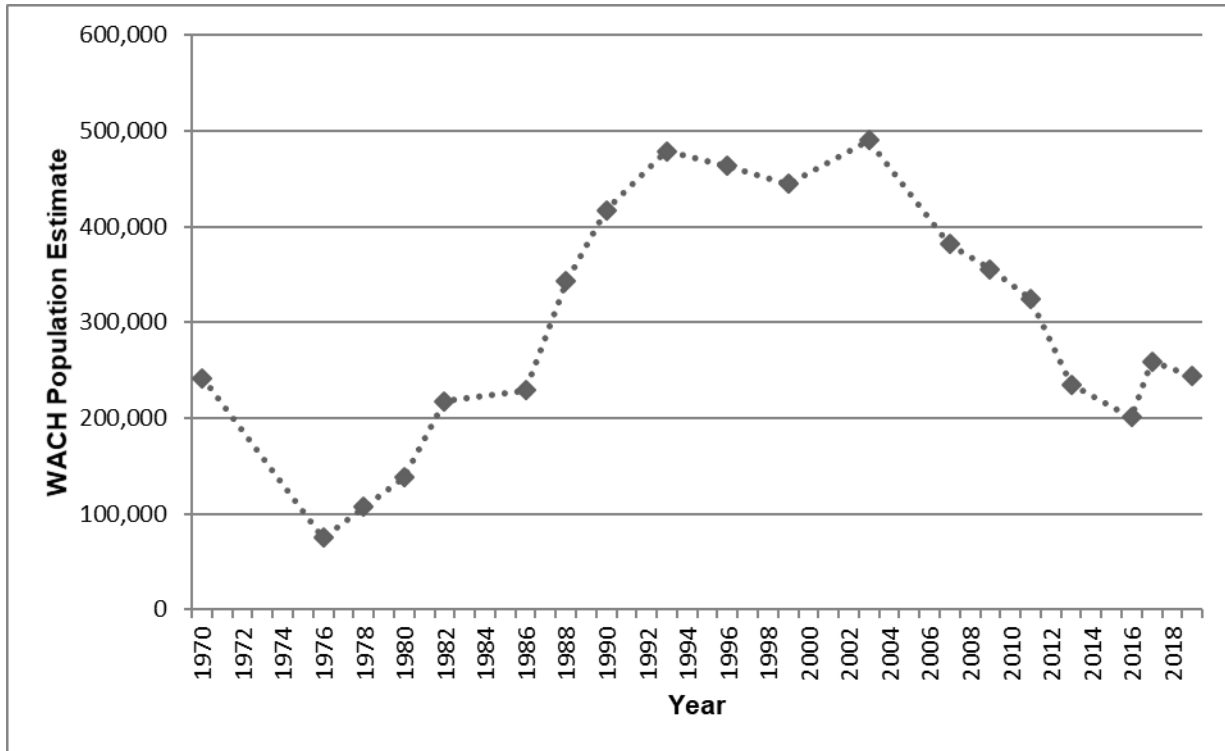


Figure 1. The WACH population estimates from 1970–2019. Population estimates from 1986–2019 are based on aerial photographs of groups of caribou that contained radio-collared animals (Dau 2011, 2013, 2014, Parrett 2016, 2017a, Hansen 2019a).

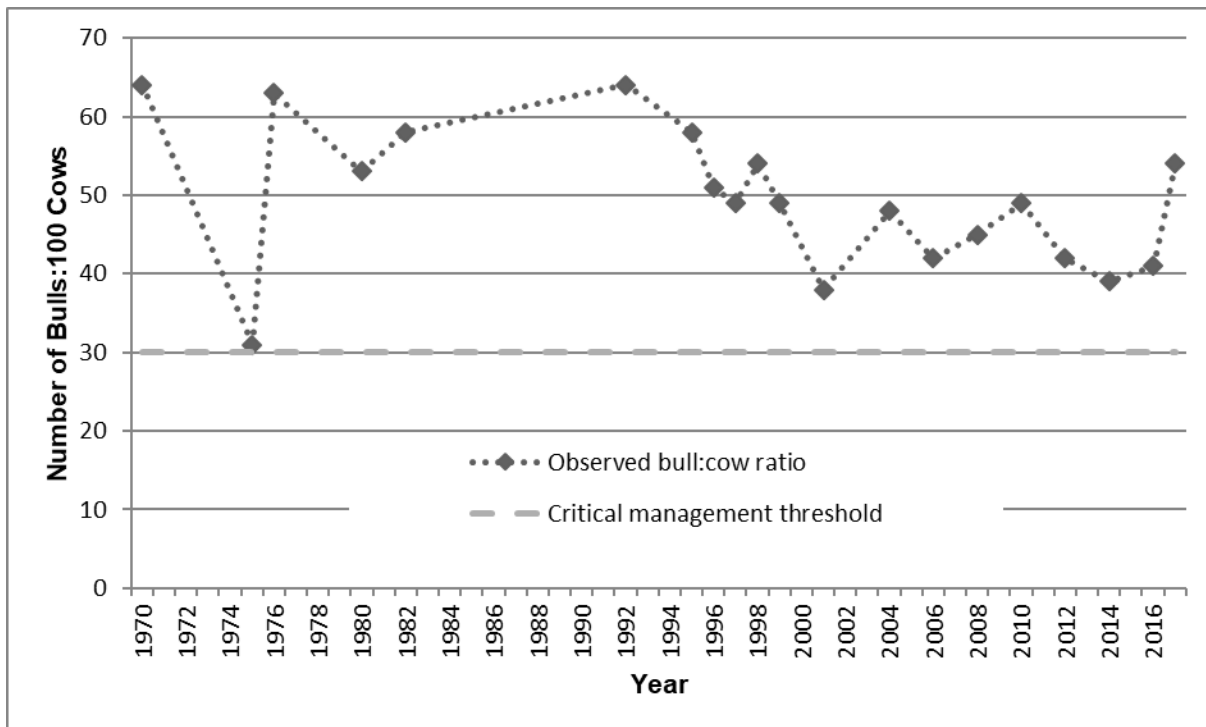


Figure 2. Bull:Cow ratios for the WACH (Dau 2015, ADF&G 2017, Parrett 2017a).

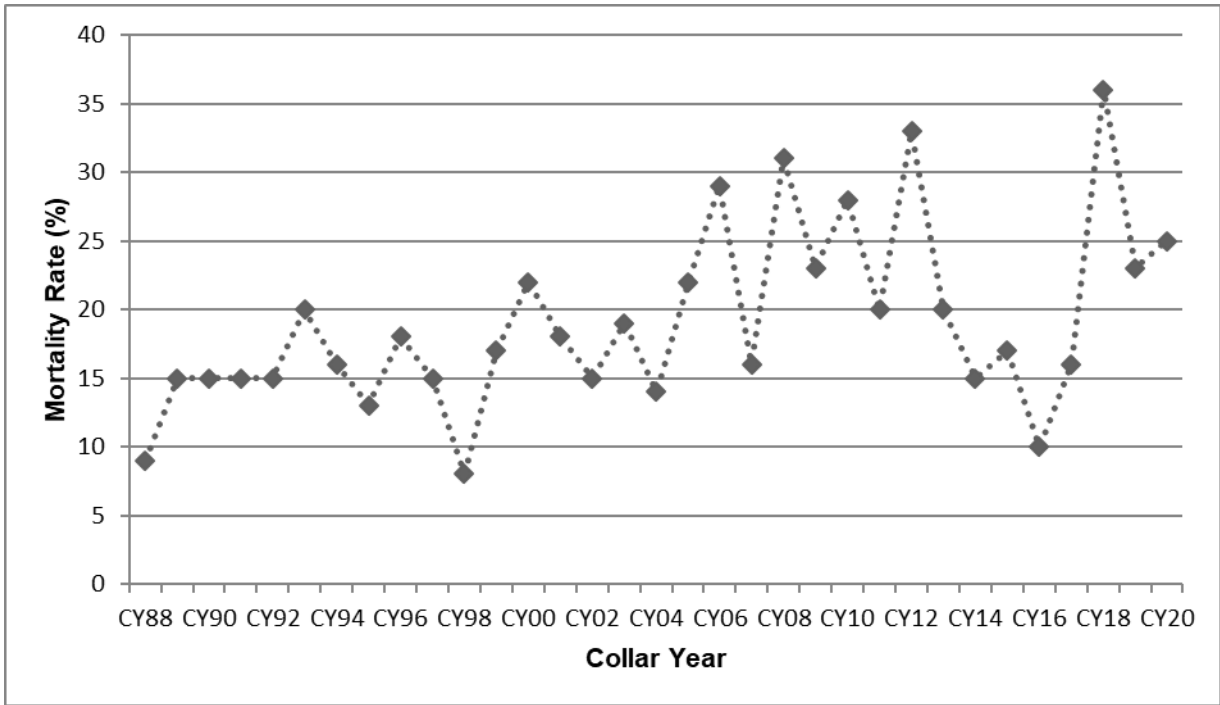


Figure 3. Mortality rate of radio-collared cow caribou in the Western Arctic caribou herd (Dau 2013, 2015, 2016b, NWARAC 2019, WACH Working Group 2020). Collar Year = 1 Oct-30 Sept.

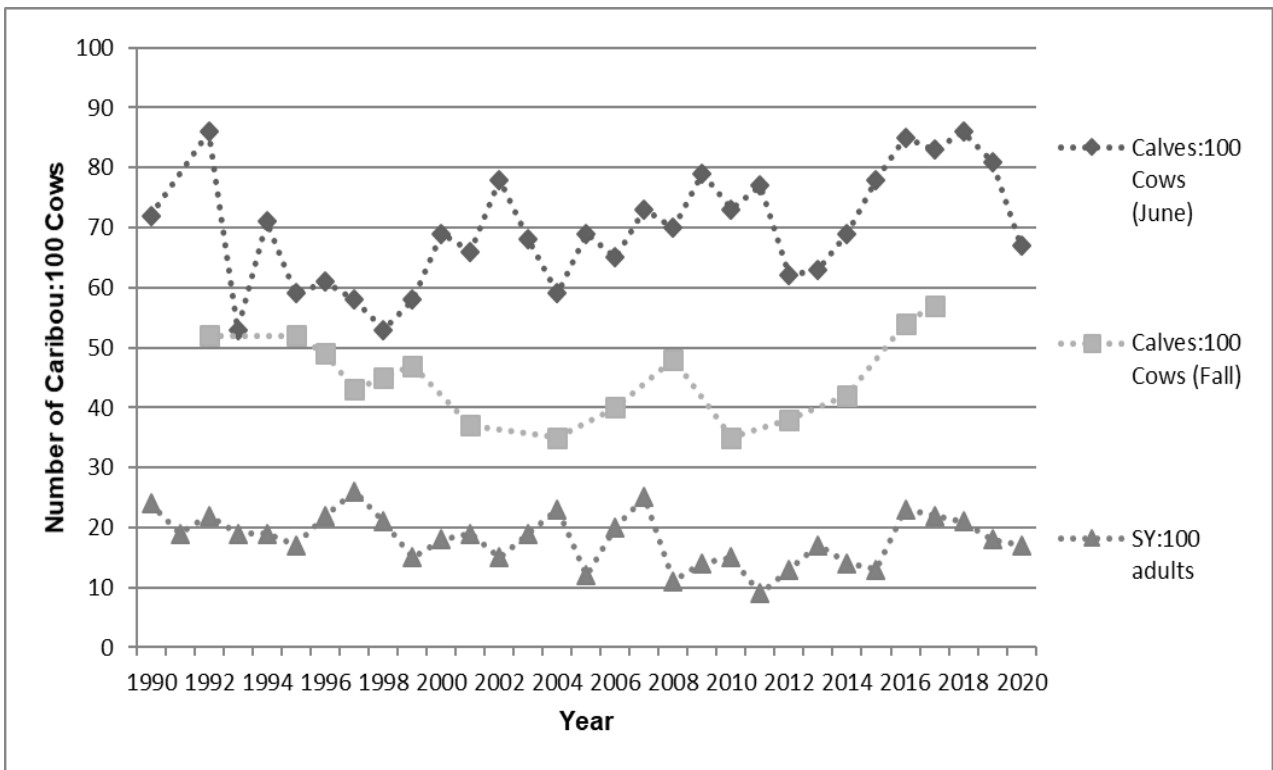


Figure 4. Calf:cow and short yearling (SY):adult ratios for the WACH (Dau 2013, 2015, 2016a, ADF&G 2017, Parrett 2017a, NWARAC 2019, WACH Working Group 2020). Short yearlings are 10-11 months old caribou.

Cultural Knowledge and Traditional Practices

Meeting the nutritional and caloric needs of Arctic communities is vitally important and is the foundation of subsistence activities. Still, the meaning of subsistence extends far beyond human nutrition for Alaska's native peoples. Holthaus (2012) describes subsistence as the base on which Alaska Native culture establishes its identity through "philosophy, ethics, religious belief and practice, art, ritual, ceremony and celebration."

Caribou have been an important resource for the Iñupiat of the Seward Peninsula for thousands of years. Caribou were traditionally a major source of both food and clothing and continues today to be the most important land animal consumed in many communities (Burch 1984, 1994, 1998, ADF&G 1992).

Historically, during fall and spring caribou migrations, people built "drive fences" out of cairns, bundles of shrubs, or upright logs. These fences were sometimes several miles long and two to three miles wide. Ideally, the closed end of the fence crossed a river, and caribou were harvested while crossing the river and retrieved later; or the fence would end in a corral where caribou were snared and killed with spears (Burch 2012).

The WACH population declined rapidly beginning in the late 1800s. At its low point, its range had shrunk to less than half its former size. Famine ensued, primarily due to the absence of caribou. In the early 1900s, reindeer were introduced to fill the need for food and hides. The WACH began to rebound in the 1940s. Currently, among large terrestrial mammals, caribou are among the most abundant; however, the population in any specific area is subject to wide fluctuations from year to year as caribou migration routes change (Burch 2012).

Caribou were traditionally harvested any month of the year they were available. The objective of the summer hunt was to obtain the hides of adult caribou with their new summer coats. They provided the best clothing material available to the Iñupiat. The fall hunt was to acquire large quantities of meat to freeze for winter (Burch 1994). Present-day use of caribou calves appears to be limited but does occur opportunistically.

Small groups of caribou that have over-wintered may be taken by hunters in areas that are accessible by snowmachine. Braem et al. (2015:141) explain, "Hunters harvest cows during the winter because they are fatter than bulls. Caribou harvested during the winter can be aged completely without removing the skin or viscera. Then in the spring, the caribou is thawed. Community members cut it into strips to make dried meat, or they package and freeze it." In spring, caribou start their northward migration. The caribou that are harvested are "lean and good for making dried meat (*paniqtuq*) during the warm, sunny days of late spring" (Georgette and Loon 1993:80).

Harvest History

The State manages the WACH on a sustained yield basis (i.e. managing current harvests to ensure future harvests). The harvestable surplus when the WACH population trend is declining is calculated

as 6% of the estimated population (WACH working group 2011, Parrett 2017b, pers. comm.). In 2017, the WACH harvestable surplus was 15,540 caribou (6% of 259,000 caribou). Assuming the herd population remained stable in 2018 and 2019, the harvestable surplus remains 15,540 caribou. This is a substantial increase from the 2016 harvestable surplus of 12,056 caribou when harvest likely exceeded sustainable levels. However, there is substantial uncertainty in harvestable surplus estimates (Parrett 2015a, Dau 2015). 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, 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 nonresidents is based on harvest ticket reports (Dau 2015) and registration permits for nonlocal residents. 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 in Unit 22, but do not frequently harvest Western Arctic caribou).

From 1999–2017, the average estimated total harvest from the WACH was 14,119 caribou/year, ranging from 11,729-16,219 caribou/year (Hansen 2020, pers. comm., **Figure 5**). These harvest levels are within the conservative harvest level specified in the WACH Management Plan (**Table 1**). In 2015 and 2016, total local harvest estimates were 14,360 caribou and 14,971 caribou, respectively (Hansen 2019b, pers. comm.). While these harvest estimates are below the 2017-2019 harvestable surpluses, they exceed the 2016 harvestable surplus. Of note, harvest estimates do not include wounding loss, which may be hundreds of caribou (Dau 2015).

Local hunters account for approximately 95% of the total WACH harvest and residents of Unit 22 account for approximately 17% of the total harvest on average (**Figure 6**, ADF&G 2017). Comparison of caribou harvest by community from household survey data with yearly GPS-collared caribou migration routes demonstrates that local community harvests parallel WACH availability rather than population trends.

In 2016, the State began requiring registration permits (RC800) for resident caribou harvest in Unit 22. From 2016-2019, reported RC800 harvest ranged from 147-460 caribou and averaged 377 caribou per year. Bulls and cows comprised 74% and 26% of the reported harvest on average, respectively. Calves comprised an unknown proportion of the harvest as this information is not collected in harvest reports (ADF&G 2021).

From 1999-2013, 72% of nonlocal hunters on average accessed the WACH by plane. Most nonlocal harvest (85-90%) occurs between Aug. 25 and Oct. 7. In contrast, most local, subsistence hunters harvest WACH caribou whenever they are available using boats, 4-wheelers, and snowmachines (Dau 2015, Fix and Ackerman 2015).

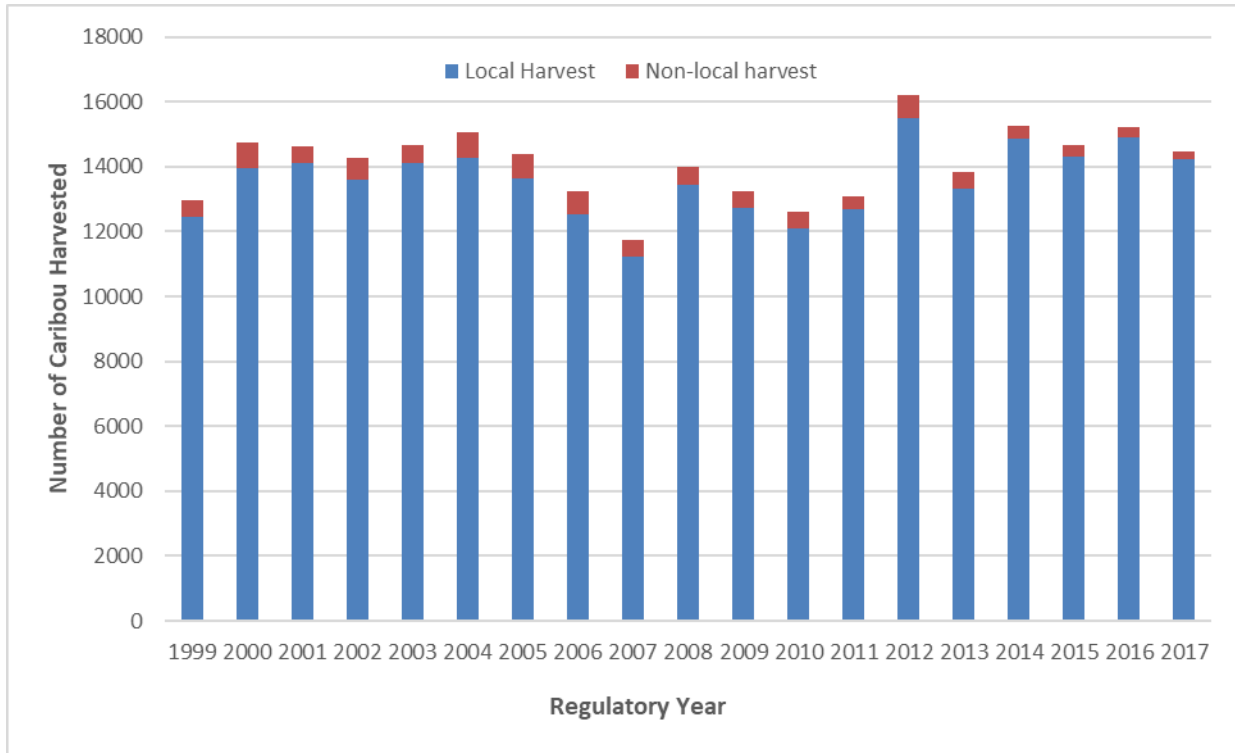


Figure 5. Estimated number of caribou harvested from the WACH by residency (Hansen 2020, pers. comm.). Local harvest is an estimate derived from models; non-local harvest is from harvest reports.

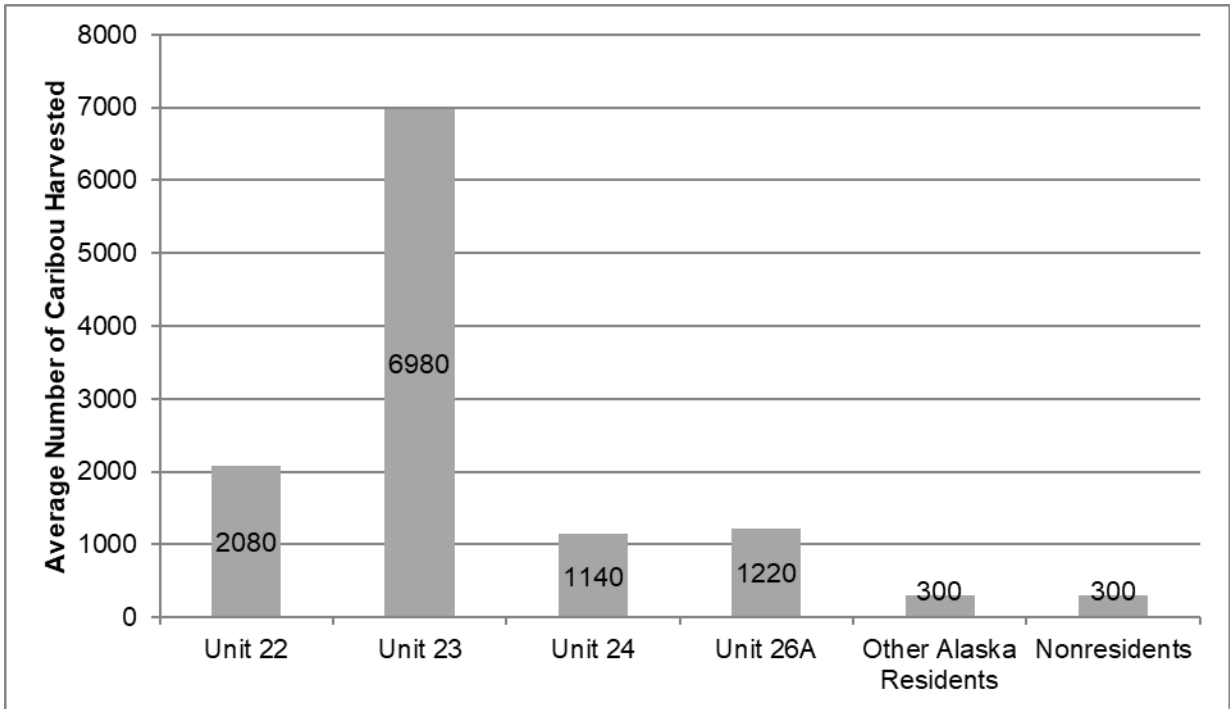


Figure 6. Average number of caribou harvested by unit and residency from 1998-2015 (ADF&G 2017).

Effects of the Proposal

If the Board adopts Proposal WP22-47, the harvest of calves would be permitted in Unit 22. This would increase harvest opportunity for Federally qualified subsistence users. Calf harvest presents minimal conservation concerns as most users do not target calves and calves may already be harvested in Unit 22 under State regulations.

Eliminating the prohibition on calf harvest would allow the harvest of orphaned calves that may otherwise succumb to predation. However, it can be difficult to identify orphaned calves as caribou are scattered across the landscape, and calves and cows can be separated by substantial distances. Additionally, orphaned calves may survive, especially if they remain with the herd. Russell et al. (1991) found survival rates of orphaned and non-orphaned calves were 63% and 78%, respectively, indicating orphaned calves still have a good chance of survival, although the sample size for orphaned calves was very small. The timing of abandonment also influences survival. Calves orphaned after weaning (October) have greater chances of survival than calves orphaned before weaning (Holand et al. 2012, July 2000, Russell et al. 1991, Ruggetti and Fest-Bianchet 2014). As caribou typically winter on the Seward Peninsula, caribou harvest in Unit 22 usually occurs later in the year, which could improve the chances of orphaned calves surviving.

Allowing calf harvest may also reduce wanton waste. During deliberation on WP20-46, which requested allowance of calf harvest in Unit 23, a Northwest Arctic Regional Advisory Council member

noted that he has seen dead calves in the field, presumably mistakenly shot and then left since they are illegal to harvest (NWARAC 2019). The ADF&G caribou biologist stated many orphaned calves have ended up around Kotzebue during the hunting season but have been unavailable to harvest. He collared a few of these orphaned calves, all of which died shortly thereafter. He also stated that he receives many reports from hunters about orphaned and wounded calves out in the field that are not legally available for harvest (NWARAC 2019). In regard to the prohibition on the take of cows accompanied by calves, an NPS staff biologist voiced concern that unethical hunters could harvest calves and then harvest its mother, who would no longer be accompanied by a calf (NWARAC 2019). However, hunters can already harvest cows with calves under State regulations, which do not have that restriction.

The Western Arctic and Teshekpuk caribou herds are the only caribou herds in Alaska where calf harvest is prohibited. These restrictions were adopted by the BOG in 2015 and the Board in 2016 as conservation measures when both herds were declining. The WACH management plan also recommends prohibiting calf harvest when the herd is within the conservative management level. However, calves comprise a very small portion of the harvest. In his population model, Prichard (2009) assumed calves comprised only 2% of the total annual WACH harvest, which would not affect the population trajectory of the WACH. As most calves die within their first year and few hunters target calves, calf harvest may be compensatory mortality, although Prichard (2009) assumed all harvest mortality to be additive. While calf recruitment influences herd abundance and population trajectory, Prichard (2009) found adult survival to have the largest impact on WACH population size. Prohibiting cow harvest would have a greater impact on herd conservation than prohibiting calf harvest.

The BOG removed the restriction on calf caribou harvest at its Arctic/Western Region meeting in January 2020. Currently, Federal regulations are more restrictive than State regulations. If the Board adopts this proposal to eliminate the prohibition on calf harvest Federal users would have the same opportunities as State users do.

OSM PRELIMINARY CONCLUSION

Support Proposal WP22-47.

Justification

Adopting Proposal WP22-47 increases harvest opportunity for Federally qualified subsistence users. As most people do not target calves, calf harvest is expected to be very low and should not affect conservation of the herd, especially since calf harvest is already permitted under State regulations. Additionally, allowing calf harvest may reduce wanton waste by allowing mistakenly shot calves to be legally salvaged, and would permit harvest of orphaned calves. Adoption of this proposal would give Federal users the same opportunities as State users.

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WP22-48 Executive Summary

General Description	Proposal WP22-48 requests modification of the boundary between two hunt areas in Unit 22A. <i>Submitted by: Southern Norton Sound Fish and Game Advisory Committee.</i>
Proposed Regulation	<p>Unit 22A—Moose</p> <p><i>Unit 22A—that portion north of the Egavik Creek drainage and including the Tagoomenik and Shaktoolik River drainages—1 bull. Aug. 1 – Sep. 30</i></p> <p><i>Federal public lands are closed to hunting except by federally qualified users hunting under these regulations</i></p> <p><i>Unit 22A, that portion in the Unalakleet drainage and all drainages flowing into Norton Sound north of the Golsovia River drainage and south of and including the Egavik Creek drainage Tagoomenik and Shaktoolik River drainages—1 bull by Federal registration permit. Aug. 15-Sep. 14</i></p> <p><i>Federal public lands are closed to the taking of moose, except that residents of Unalakleet, hunting under these regulations, may take 1 bull by Federal registration permit, administered by the BLM Anchorage Field Office with the authority to close the season in consultation with ADF&G</i></p>
OSM Preliminary Conclusion	Support
Seward Peninsula Subsistence Regional Advisory Council Recommendation	
Interagency Staff Committee Comments	
ADF&G Comments	
Written Public Comments	None

DRAFT STAFF ANALYSIS
WP22-48

ISSUES

Proposal WP22-48, submitted by the Southern Norton Sound Fish and Game Advisory Committee (AC), requests modification of the boundary between two hunt areas in Unit 22A.

DISCUSSION

The proponent requests to shift the boundary between “Unit 22A, that portion north of and including the Tagoomenik and Shaktoolik River drainages” (Unit 22A North) and “Unit 22A, in the Unalakleet drainage and all drainages flowing into Norton Sound north of the Golsovia River drainage and south of the Tagoomenik and Shaktoolik River drainages” (Unit 22A Central) from the Tagoomenik and Shaktoolik River drainages north to the Egavik Creek drainage (**Maps 1-2**). As a result of the change, the Tagoomenik and Shaktoolik River drainages would become part of the Unit 22A North hunt area.

The proponent states that the foothills near Shaktoolik have always been a traditional hunting area for the residents of Shaktoolik and not Unalakleet. (Note: Currently, a Federal lands closure in Unit 22A Central limits hunting on Federal public lands to residents of Unalakleet). The proponent additionally notes that changing the boundary to Egavik Creek drainage would align the Federal moose hunt areas with recently changed State regulations.

Note: This is a deferred special action request that was submitted by the proponent in January 2020.

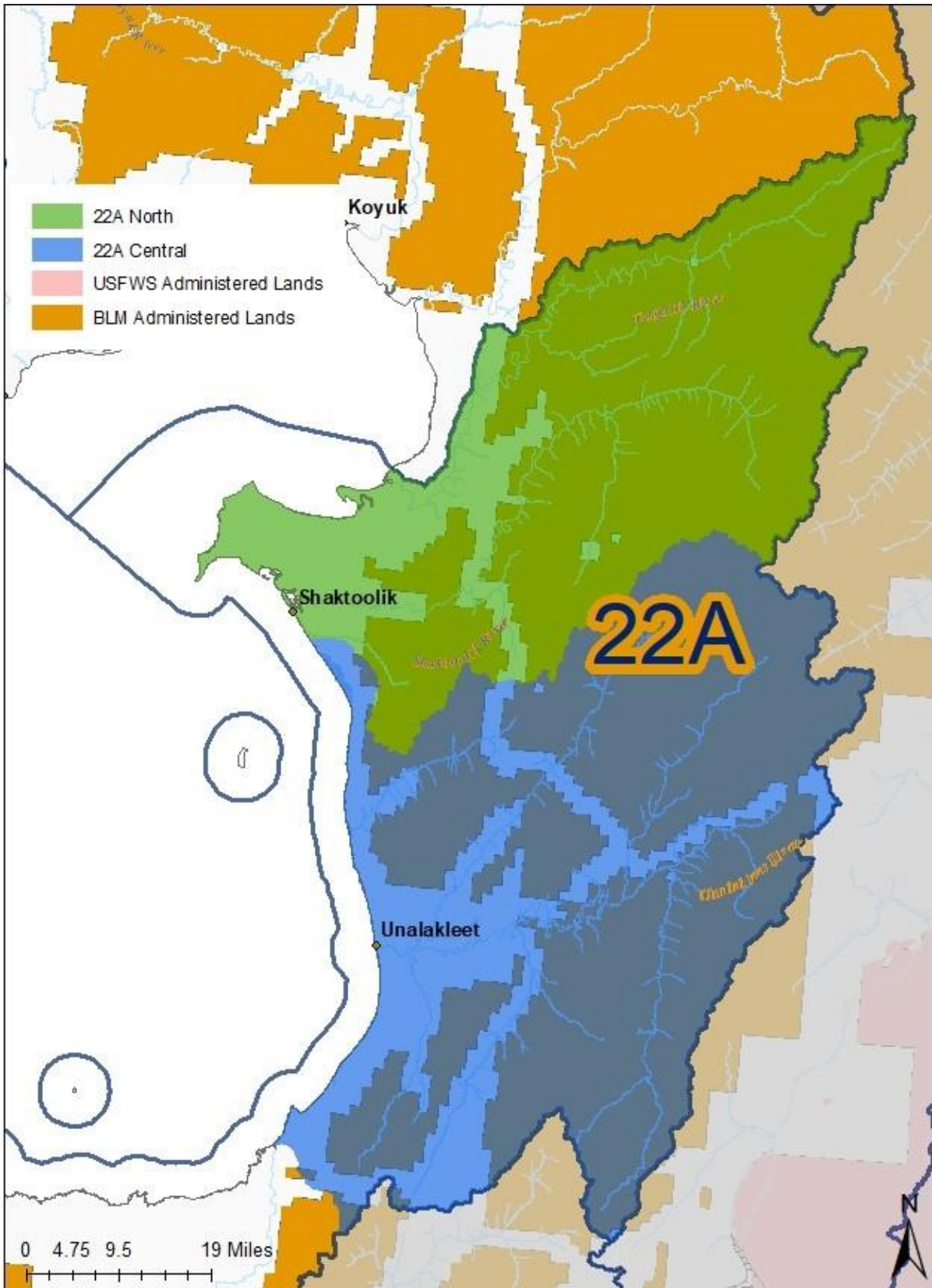
Existing Federal Regulation

Unit 22A—Moose

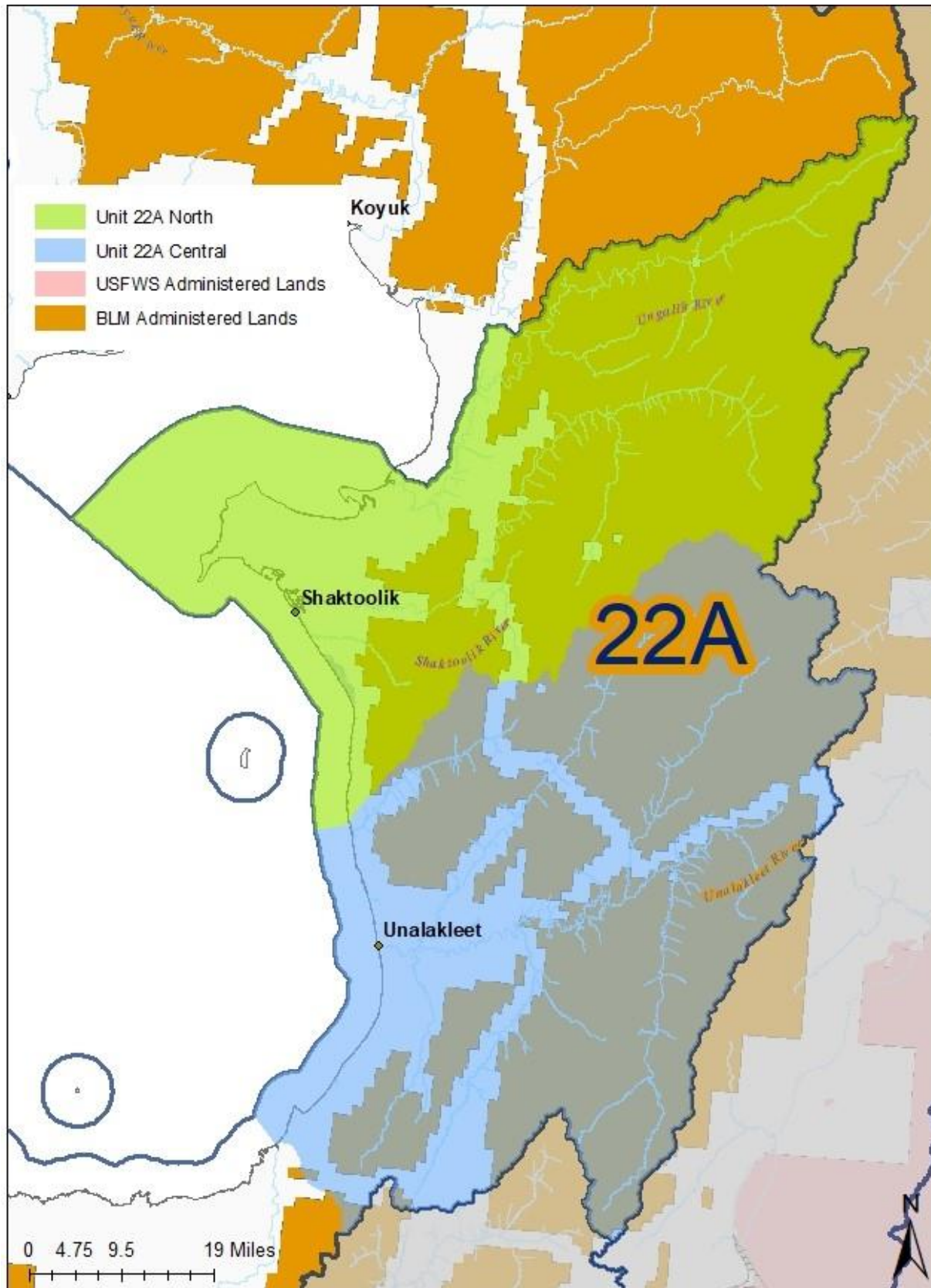
Unit 22A—that portion north of and including the Tagoomenik and Shaktoolik River drainages—1 bull. Federal public lands are closed to hunting except by federally qualified users hunting under these regulations Aug. 1 – Sep. 30

Unit 22A, that portion in the Unalakleet drainage and all drainages flowing into Norton Sound north of the Golsovia River drainage and south of the Tagoomenik and Shaktoolik River drainages—1 bull by Federal registration permit. Aug. 15-Sep. 14

Federal public lands are closed to the taking of moose, except that residents of Unalakleet, hunting under these regulations, may take 1 bull by Federal registration permit, administered by the BLM Anchorage Field Office with the authority to close the season in consultation with ADF&G



Map 1. Map of current boundary line between Units 22A North and Central.



Map 2. Map of proposed boundary change between Units 22A North and Central.

Proposed Federal Regulation

Unit 22A—Moose

*Unit 22A—that portion north of **the Egavik Creek drainage and including the Tagoomenik and Shaktoolik River drainages**—1 bull. Aug. 1 – Sep. 30*

Federal public lands are closed to hunting except by federally qualified users hunting under these regulations

*Unit 22A, that portion in the Unalakleet drainage and all drainages flowing into Norton Sound north of the Golsovia River drainage and south of **and including the Egavik Creek drainage Tagoomenik and Shaktoolik River drainages**—1 bull by Federal registration permit. Aug. 15-Sep. 14*

Federal public lands are closed to the taking of moose, except that residents of Unalakleet, hunting under these regulations, may take 1 bull by Federal registration permit, administered by the BLM Anchorage Field Office with the authority to close the season in consultation with ADF&G

Existing State Regulation

Unit 22A—Moose

Residents: One bull HT Aug. 1 – Sep. 30

Unit 22A, north of the Egavik Creek drainage

Nonresidents: One bull with 50 inch antlers or antlers with 4 or more brow tines on at least one side HT Sep. 1 – Sep. 20

Unit 22A, Unalakleet River drainage and all drainages flowing into Norton Sound north of Golsovia River drainage and Residents: One bull by permit available online at <http://hunt.alaska.gov> and in person in Unalakleet beginning Aug. 3. Harvest quota to be announced. Season will be closed by emergency order when quota is reached. RM841 Sept. 1-30
OR

Unit 22A–Moose

<i>south of and including the Egavik Creek drainage</i>	<i>Residents: One antlered bull by permit available RM844 May be announced online at http://hunt.alaska.gov and in person at license vendors in Unalakleet (a season may be announced Dec. 1-Jan. 31)</i>	<i>May be announced</i>
	<i>Nonresidents</i>	<i>No open season</i>

Extent of Federal Public Lands/Waters

Unit 22A is comprised of 68% Federal public lands and consists of 56% Bureau of Land Management (BLM) managed lands and 12% U.S. Fish and Wildlife Service (USFWS) managed lands.

The area between the Tagoomenik and Shaktoolik River drainages and the Egavik Creek drainage is comprised of 12,800 acres of BLM managed land.

Customary and Traditional Use Determinations

Rural residents of Unit 22 have a customary and traditional use determination for moose in Unit 22.

Regulatory History

Over the past two decades, changes to regulations have localized hunt seasons and limits to particular areas within Unit 22. Prior to 2003, State and Federal regulations in Unit 22A consisted of one hunt area for moose, which consisted of the entire subunit. In 2003, the Alaska Board of Game (BOG) made several regulatory changes for moose in Unit 22. One of these changes divided Unit 22A into three distinct hunt areas, and seasons and harvest limits were adjusted to account for localized patterns of harvest. The same changes were made in Federal regulation through Special Action WSA03-14, approved by the Board in December 2003.

In 2004, the Council submitted Proposal WP04-70, requesting, in part, retention of the temporary changes made through Special Action WSA03-14, including establishing three distinct moose hunt areas in Unit 22A. The Board adopted Proposal WP04-70 with modification, resulting in alignment of State and Federal moose seasons, hunt areas and harvest limits in Unit 22A.

In 2006, the Board adopted Proposal WP06-39, closing Federal public lands in Unit 22A Central to moose hunting by both non-Federally qualified users and Federally qualified subsistence users. The Unit 22A Central closure to all users was modified in 2008 when the Board adopted Proposal WP08-36/37 with modification to allow residents of Unalakleet to harvest one bull moose during an Aug. 15–Sep. 14 season. As part of the analysis for this proposal, a Section 804 analysis was conducted in Unit 22A Central, which determined that residents of Unalakleet were the most dependent on moose in the area (OSM 2021a).

In January 2020, the BOG adopted Proposal 38 as amended, which extended the resident fall and winter seasons in Unit 22A Central. The amendment changed the boundary between the Unit 22A North and Unit 22A Central hunt areas to the Egavik Creek drainage instead of the Tagoomenik River drainage. The Village of Shaktoolik and Southern Norton Sound AC supported the amendment to change the hunt area boundary to allow Shaktoolik residents to hunt near the Tagoomenik River without influence from the RM841 hunt and to better align with traditional hunting areas.

Current Events

On January 24, 2020, the Southern Norton Sound AC Chair submitted a special action request to the Board requesting that Federal regulations be aligned with recently changed State regulations (Proposal 38 above). The request was signed by the Chair of the Southern Norton Sound AC, as well as the Village presidents of Shaktoolik and Unalakleet. The two communities agreed that the current hunt area boundary is too far north, so that an area of foothills traditionally used by Shaktoolik for moose hunting has been off limits to them under Federal regulations (but was recently corrected under State regulations).

On February 20, 2020, the Board responded to the Southern Norton Sound AC, stating: “the Board will defer this request and consider it during the 2022-2024 regulatory cycle. No further action is required on your part unless you would like to withdraw this request from future consideration.”

At their March 2021 meeting, the Seward Peninsula Regional Advisory Council discussed the deferred request, and Office of Subsistence Management staff confirmed that it would be considered as a proposal during the 2022-2024 regulatory cycle (SPRAC 2021).

Wildlife Proposal WP22-49, submitted by Lance Kronberger, requests that the Federal public lands closure for moose in Unit 22A North be rescinded Sep. 1 – Sep. 20, to coincide with the State’s nonresident moose season.

Wildlife Closure Review, WCR22-09b, reviews the closure to moose hunting in Unit 22A Central, except by residents of Unalakleet.

Cultural Knowledge and Traditional Practices

The Seward Peninsula region has been inhabited by humans for at least 12,000 years. The Inupiaq, Siberian Yupik, and Central Yup’ik people of the area have a deeply rooted practice of subsistence hunting, fishing and gathering of wild resources. Moose did not start migrating into the Seward Peninsula until the 1940s. As moose increased in the region during the second half of the 20th century, harvest of the animals grew.

The Unit 22A community of Shaktoolik is located on the eastern shore of Norton Sound, 125 miles east of Nome, and identifies as primarily Inupiat (Kawerak 2019). In 2019, Shaktoolik had an estimated population of 272 (ADLWD 2020). The village of Unalakleet is located approximately 35 miles south of Shaktoolik. In 2019, Unalakleet had an estimated population of 721 (ADLWD 2020).

A 2009 Shaktoolik subsistence survey showed that 35% of surveyed households attempted to harvest moose, and 13% of surveyed households harvested them. Moose accounted for 18% of the total subsistence harvest by surveyed households that year, resulting in about 18 pounds of edible meat per person (ADF&G 2021). During the 2009 survey year, Shaktoolik harvested all their moose in August and September (Braem 2012).

A subsistence survey conducted in Unalakleet from 2002 to 2003 showed that 38% of surveyed households attempted to harvest moose, and 12% of surveyed households harvested them. Moose was used by 67% of surveyed households (Georgette et al. 2017). Unalakleet households harvested most of their moose between August and October (Georgette et al. 2017). During the study period, moose harvest accounted for about 4% of surveyed Unalakleet households' total subsistence harvest, resulting in 6.5 pounds of edible meat per person (ADF&G 2021).

Thomas (1982) documented the preferred hunting area for moose among surveyed Shaktoolik residents, which including lower and upper portions of the Shaktoolik River. This use area information has not been updated in a published subsistence survey report since. Hunting in foothills provided an opportunity to scout for moose from higher elevations (Thomas 1982). Historically, residents of Shaktoolik traveled 25 miles to the south to Egavik, which was occupied until the 1940s, to take part in other subsistence activities (Thomas 1982).

Effects of the Proposal

If this proposal is adopted, the hunt area boundary between Unit 22A North and Unit 22A Central would be changed from the Tagoomenik and Shaktoolik River drainages to the Egavik Creek drainage. This boundary change would align Federal and State hunt area boundaries.

This change would also better align with traditional hunting areas of Federally qualified subsistence users. Currently, residents of Shaktoolik cannot hunt on Federal public lands south of their village between the Shaktoolik River and Egavik Creek, which are readily accessible by ATV, due to the Federal lands closure in Unit 22A Central. If this proposal is adopted, Shaktoolik residents would be able to harvest moose by harvest ticket on Federal public lands in this area under State and Federal regulations. Residents of Unalakleet would still be able to harvest moose on the Federal public lands in this area, but by harvest ticket rather than by Federal or State registration permit. Moose harvest may increase in Unit 22A North as Shaktoolik residents have increased opportunity to hunt there. However, it is not expected to substantially affect the moose population in the area. Additionally, if the closure in Unit 22A Central is modified through WCR22-09b, Shaktoolik residents may be able to hunt moose on the Federal lands between the Shaktoolik River and Egavik Creek regardless of whether or not this proposal is adopted (but by Federal registration permit rather than by harvest ticket).

OSM PRELIMINARY CONCLUSION

Support Proposal WP22-48.

Justification

Adoption of this proposal would better align hunt areas with traditional hunting areas of Federally qualified subsistence users, increase hunting opportunity for Federally qualified subsistence users, and is not expected to affect the moose population. Additionally, it would give Federal users the same access opportunities to areas as State users and would align Federal and State hunt area boundaries.

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WP22–49 Executive Summary

General Description	Proposal WP22-49 requests that the Federal public lands closure for moose in the portion of Unit 22 north of and including the Tagoomenik and Shaktoolik River drainages be rescinded Sep. 1 – 20, to coincide with the State’s nonresident moose season. <i>Submitted by: Lance Kronberger</i>
Proposed Regulation	<p>Unit 22A—Moose</p> <p><i>Unit 22A—that portion north of and including the Tagoomenik and Shaktoolik River drainages—1 bull. Federal public lands are closed to hunting Sep. 21 – Aug. 31 except by federally qualified users hunting under these regulations</i></p> <p style="text-align: right;"><i>Aug. 1 – Sep. 30</i></p>
OSM Preliminary Conclusion	Support
Seward Peninsula Subsistence Regional Advisory Council Recommendation	
Interagency Staff Committee Comments	
ADF&G Comments	
Written Public Comments	None

DRAFT STAFF ANALYSIS
WP22-49

ISSUES

Wildlife Proposal WP22-49, submitted by Lance Kronberger of Eagle River, requests that the Federal public lands closure for moose in the portion of Unit 22 north of and including the Tagoomenik and Shaktoolik River drainages (Unit 22A North, **Figure 1**) be rescinded Sep. 1 – 20, to coincide with the State’s nonresident moose season.

DISCUSSION

The proponent states that Federal public lands, which are remote and difficult to access, comprise a large portion of this hunt area, while the communities in the area are surrounded by State-managed land. He states that the Federal public lands closure serves to concentrate all moose hunting activities onto a small area of State-managed land, and that rescinding the closure would reduce the potential for conflicts in the field.

Existing Federal Regulation

Unit 22A—Moose

Unit 22A—that portion north of and including the Tagoomenik and Shaktoolik River drainages—1 bull. Federal public lands are closed to hunting except by federally qualified users hunting under these regulations Aug. 1 – Sep. 30

Proposed Federal Regulation

Unit 22A—Moose

*Unit 22A—that portion north of and including the Tagoomenik and Shaktoolik River drainages—1 bull. Federal public lands are closed to hunting **Sep. 21 – Aug. 31** except by federally qualified users hunting under these regulations* Aug. 1 – Sep. 30

Existing State Regulation

Unit 22A—Moose

Residents: One bull *HT Aug. 1 – Sep. 30*

Nonresidents: One bull with 50 inch antlers or antlers with 4 or more brow tines on at least one side *HT Sep. 1 – Sep. 20*

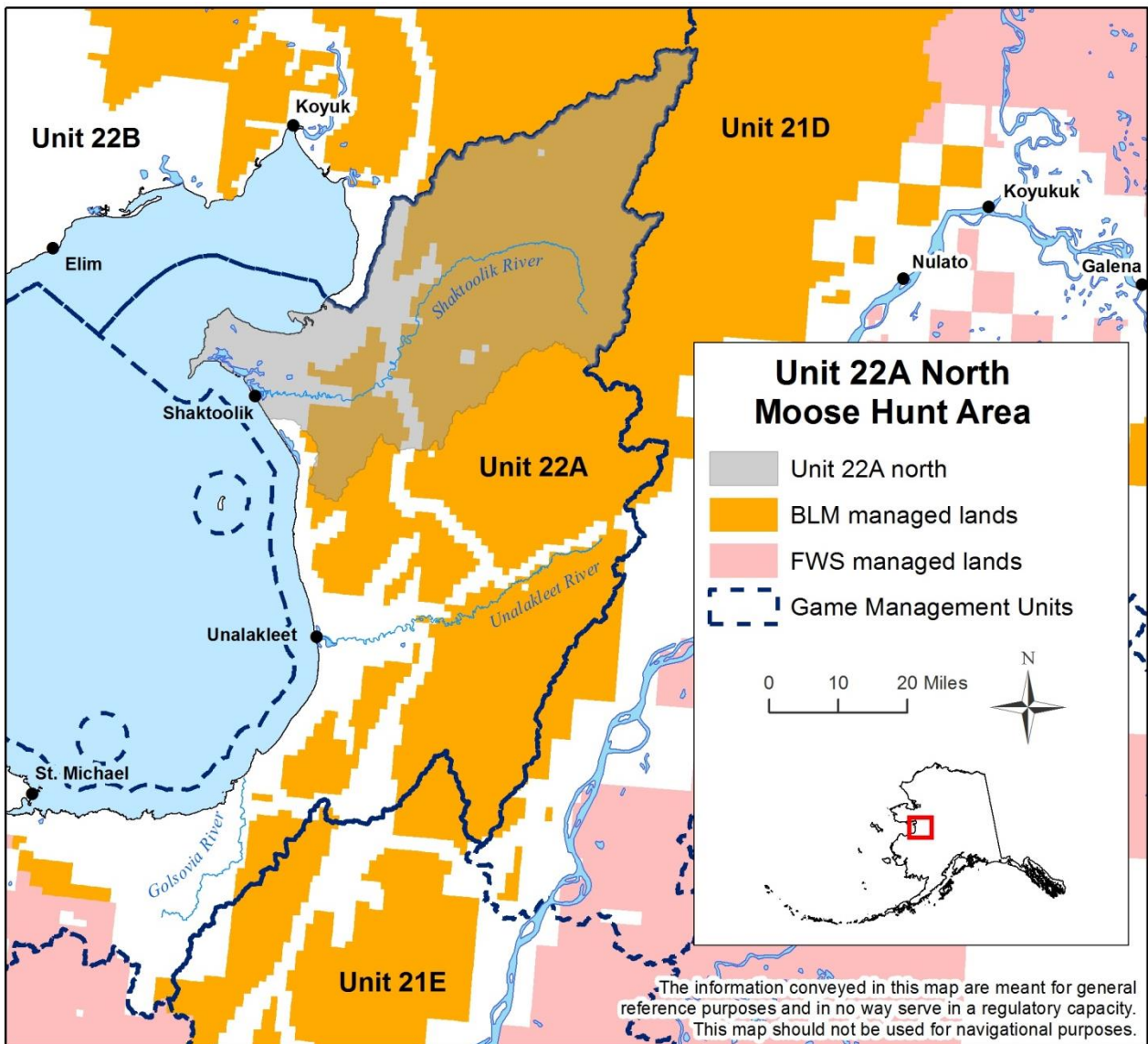


Figure 1. Unit 22A North moose hunt area.

Extent of Federal Public Lands/Waters

The Unit 22A north hunt area is comprised of 78% Federal public lands, all of which are managed by the Bureau of Land Management (BLM) (**Figure 1**).

Customary and Traditional Use Determinations

Rural residents of Unit 22 have a customary and traditional use determination for moose in Unit 22.

Regulatory History

Prior to 1995, Federal public lands in Unit 22A were open to moose harvest by all users. In 1995, the Seward Peninsula Subsistence Regional Advisory Council (Council) submitted Proposal P95-42, requesting that the fall moose season in Unit 22A be extended from Aug. 1 – Sep. 30 to Aug. 1 – Oct. 10. The Federal Subsistence Board (Board) adopted this proposal with modification to extend the season, as proposed, and to close Federal public lands for the Oct. 1 –10 portion of the season to all users except residents of Unit 22A (FSB 1995a).

The Alaska Department of Fish and Game (ADF&G) subsequently submitted a Request for Reconsideration, R95-11, asserting that the Oct. 1 –10 Federal public lands closure was not substantiated, and that the season extension violated established principles of wildlife management. The Board reversed their decision on P95-42, concurring that the season extension was not consistent with the maintenance of a healthy moose population. The Board recognized that residents of Unit 22A traditionally harvested moose in October but were concerned that the October season extension overlapped the rut and could have led to an unsustainable harvest. As a result of the Board’s decision, the fall moose season was open Aug. 1 – Sep. 30. The Board also took action to close Federal public lands in Unit 22A to the harvest of moose to all users except residents of Unit 22A during the Dec. 1 – Jan. 31 season (FSB 1995b). This pool of eligible users is smaller than the pool of Federally qualified subsistence users, defined as those who have a customary and traditional use determination and includes all residents of Unit 22.

Proposal P96-50 was submitted by the Council in 1996 to ensure continuation of the Aug. 1 – Sep. 30 season in Unit 22A, as well as to request closure of Federal public lands to the harvest of moose except by Federally qualified subsistence users during this season. The Board rejected this proposal (FSB 1996) but retained the Aug. 1 – Sep. 30 season.

Proposal P98-86, submitted by the Council, requested the harvest limit be changed from one antlered bull to one moose for the Aug. 1 – Sep. 30 and Dec. 1 – Jan. 31 seasons. The Board adopted this proposal with modification to change the harvest limit to one bull, which provided additional harvest opportunity, particularly during the winter season when many bulls have shed their antlers, while protecting cows (OSM 1998).

In 2003, the Alaska Board of Game (BOG) made a number of regulatory changes for moose in Unit 22. In Unit 22A, three distinct hunt areas were established, and seasons and harvest limits were

adjusted to account for localized patterns of harvest. Prior to these changes, the State resident season was Aug. 1 – Sep. 30 and Dec. 1 – Jan. 31, and the harvest limit was one bull throughout Unit 22A. The BOG's actions: 1) closed the winter season in Unit 22A North (north of and including the Tagoomenik and Shaktoolik River drainages); 2) shortened the fall season to Aug. 15 – Sep. 25 and closed the winter season in Unit 22A Central (Unalakleet River drainage area) and 3) shortened the winter season to Dec 1 – 31 and changed the harvest limit for the winter season to one antlered bull in Unit 22A remainder (Persons 2004). These changes were scheduled to become effective in regulatory year 2004/05. However, data showing steep declines in the Unit 22A moose population prompted ADF&G to issue Emergency Order 05-05-03 in November 2003, which implemented the new regulations immediately. Due to the timing of the Emergency Order, only the winter seasons were affected. The same changes to the winter seasons were made in Federal regulation through Special Action WSA03-14, approved by the Board in December 2003.

In 2004, the Council submitted Proposal WP04-70, requesting, in part, retention of the temporary changes made through Special Action WSA03-14. Specifically, the proposal requested: 1) changing the harvest limit from one bull to one antlered moose throughout Unit 22A; 2) eliminating the winter seasons in Unit 22A North and Central; 3) shortening the fall season from Aug. 1 – Sep. 30 to Aug. 15 – Sept. 30 in Unit 22A Central; and 4) closing Federal public lands throughout Unit 22A to the harvest of moose in all seasons, except by residents of Unit 22A (OSM 2004). The Board adopted Proposal WP04-70 with modification to set the harvest limit at one bull for the fall seasons and one antlered bull for the winter season in Unit 22A Remainder, and further reduce the Unit 22A Central season, to Aug. 15 – Sep. 25 (OSM 2016). These changes resulted in alignment of State and Federal moose seasons and harvest limits in Unit 22A. They also resulted in the Federal lands closure as it currently exists.

Since 2004, there have been several regulatory changes and special action requests in the Central and Remainder hunt areas. However, Federal moose harvest regulations in Unit 22A North have remained unchanged, with an Aug. 1 – Sep.30 season, a harvest limit of one bull and a Federal public lands closure.

The State nonresident season in the North hunt area was extended in 2017, from Sep. 1 – 14 to Sep. 1 – 20, when the BOG adopted Proposal 27 at their January 2017 meeting in Bethel. The BOG expressed concern about increasing nonresident harvest in an area where subsistence harvest is high, and deliberated the merits of requiring a registration permit, in order to closely monitor harvest. Ultimately, they concluded that the high bull:cow ratio in the area provided sufficient protection against overharvest and adopted the proposal without modification.

In 2018, Proposal WP18-38 was submitted by Lance Kronberger. He requested that the Federal public lands closure in Unit 22A North, which restricted the harvest of moose to residents of Unit 22A, be rescinded Sep. 1 – 20, to coincide with the State's nonresident season. The Board adopted WP18-38 with modification to open Federal public lands to the harvest of moose by all Federally qualified users, which includes all residents of Unit 22. The Board noted that, though growing, the Unit 22 moose population was still at low densities and opening Federal public lands to all users may be premature.

In January 2020, the BOG adopted Proposal 38 as amended, which extended the resident fall and winter seasons in Unit 22A Central. The amendment was to change the boundary between the Unit 22A North and Unit 22A Central hunt areas to Egavik Creek drainage. The Village of Shaktoolik and the Southern Norton Sound Fish and Game Advisory Committee (AC) supported the amendment to change the hunt area boundary to allow Shaktoolik residents to hunt near the Tagoomenik River without influence from the RM841 hunt and to better align with traditional hunting areas.

In April 2020, the Board rejected Proposal WP20-41. Proposal WP20-41, also submitted by Lance Kronberger, made the same request as Proposal WP18-38 and this proposal, WP22-49. The Council opposed WP20-41 due to lack of biological information for moose in this hunt area. Additionally, the Council expressed concern over the negative impacts on subsistence users and the moose population from non-local and guided airplane hunters who could easily access habitat where the moose currently go for protection. The Board rejected WP20-41 in deference to the Council. However, several Board members supported WP20-41 as they did not think it would create a biological concern or result in lost subsistence hunting opportunity due to low harvests and increases in the moose population. The Board also committed to working with ADF&G to conduct moose surveys in Unit 22A in 2020 (FSB 2020).

Current Events

Proposal WP22-48 requests modifying the hunt area boundary for moose in Unit 22A. Specifically, the proposal requests changing the boundary between Unit 22A Central and 22A North from the Tagoomenik and Shaktoolik river drainages to the Egavik Creek drainage.

Biological Background

Prior to 1930, moose were scarce on the Seward Peninsula, but became a resident species by the late 1960s. Moose populations increased during the 1970s and peaked during the 1980s (Gorn 2012). There were several severe winters during the 1990s, which may have contributed to population declines during that time (Nelson 1995). Populations within Unit 22 have not recovered to peak levels of the 1980s, with brown bear predation on moose calves suspected to be a contributing factor (Gorn 2012). Current population objectives for Unit 22A, established by ADF&G, are to maintain a population of 600 – 800 moose and maintain a minimum bull:cow ratio of 30:100 (Gorn and Dunker 2014).

In 2020, ADF&G estimated the total Unit 22 moose population as 6,775 moose, which is within State management objectives for all of Unit 22. ADF&G also considered the status of the Unit 22A moose population to be increasing (ADF&G 2020). In 2017, ADF&G estimated the total Unit 22A moose population as 2,043 moose, indicating Unit 22A's moose population may be well above population objectives. In 2017, ADF&G's extrapolated estimate for 22A North was 645 moose with a density of 0.35 moose/mi² (BOG 2017).

In Unit 22, moose surveys are limited to select drainages (Gorn and Dunker 2014). Consequently, management decisions for moose throughout Unit 22A have typically been made based on surveys conducted in and around the Unalakleet River drainage. This survey area is located in the Unit 22A Central hunt area, adjacent to the southern Unit 22A North boundary and contains similar habitat. In

this area, geospatial and composition surveys are used to assess moose population status. Spring abundance surveys were conducted between 2003 and 2021 to estimate the size of the moose population in Unit 22A Central (**Table 1**). The population in this area has been increasing since 2003 and was estimated to be 766 moose ($\pm 16\%$), or 0.32 moose/mi², in 2021 (Dunker 2021, pers. comm). This estimate approaches the upper bound of the Unit 22A management goal of 600 – 800 moose (Gorn and Dunker 2014).

In addition to estimates of population size, spring surveys generated age class estimates. The percent short yearlings, or ten-month-old calves, is an estimate of recruitment, and was 10% in 2021 (**Table 1**). This was lower than recruitment estimates in the previous decade but was characterized as adequate by the Unit 22 Area Biologist (SPRAC 2017).

Fall composition surveys were conducted between 2003 and 2020 in the Unalakleet drainage (**Table 2**). The bull:cow ratio increased substantially between 2006 and 2016, remaining high in 2020 at 122 bulls:100 cows. This unusually high bull:cow ratio is well above the goal of at least 30 bulls:100 cows and raises questions about the influences of local harvest patterns and moose movements. Local biologists believe that this issue warrants further attention (BOG 2017, SPRAC 2017).

Table 1. Population and age class estimates for moose in the Central Unit 22A hunt area during spring, 1989 – 2021 (Gorn and Dunker 2014, SPRAC 2017, Dunker 2021, pers. comm.).

Survey area	Year	Population estimate (moose)	Density estimate (per mi ²)	% Short yearlings	Survey method
Unalakleet drainage	1989	325	0.29	16	Gassaway
	2003	75	0.04	15	Geospatial
	2005	123	0.15	8	Geospatial
	2008	339	0.14	18	Geospatial
	2012	545	0.24	19	Geospatial
	2017	840	0.35	12	Geospatial
	2021	766	0.32	10	Adaptive Cluster

Table 2. Composition estimates for moose in the Central Unit 22A hunt area during fall, 2003 – 2020 (Gorn and Dunker 2014, SPRAC 2017, Dunker 2021, pers. comm.).

Survey Area	Year	Bulls: 100 Cows	Calves: 100 Cows	Total moose observed
Golsovia River	2003	50	67	26
Unalakleet River	2003	69	20	66
	2006	69	34	78
	2016	124	30	250
	2020	122	34	297

Cultural Knowledge and Traditional Practices

The Seward Peninsula region has been inhabited by humans for at least 12,000 years. The Inupiaq, Siberian Yupik, and Central Yup'ik people of the area have a deeply rooted practice of subsistence hunting, fishing and gathering of wild resources. Until European contact in the early 19th century, many of these groups were semi-nomadic, moving with the seasons based on the availability of wild resources (Ray 1984). During the winter months, people often lived in permanent villages along the coast where they harvested seals, belugas, other marine mammals, fish and small land mammals. During warmer months they established family fish camps near rivers and lakes to harvest fish and plant resources.

Large ungulates were not readily available on the Seward Peninsula in the 1800s. Moose did not start migrating into the area until the 1940s, and while caribou were hunted traditionally, their numbers declined in the mid-1800s (Dau 2000). Reindeer were introduced from Siberia in 1892 under a Federal program initiated by Sheldon Jackson to provide more meat for the Inupiat people in the area (Dau 2000), but as caribou moved into the area in the 1990s, the reindeer industry has declined (Finstad et al. 2007). Historically, people in the Seward Peninsula area hunted a variety of species opportunistically. As moose increased in the region during the second half of the 20th century, harvest of the animals grew.

The Unit 22A community of Shaktoolik is located on the eastern shore of Norton Sound, 125 miles east of Nome and 33 miles north of Unalakleet (Kawerak 2019). The Tagoomenik and Shaktoolik Rivers converge two miles northwest of the village. The village first appears in the written records of an Imperial Russian Navy officer in 1842 (Strickling 2013) and identifies as primarily Inupiat. Shaktoolik's economy is based on subsistence and supplemented by wage earnings (Strickling 2013). The community resettled several times due to storms and flooding in recent times. In 2019, Shaktoolik had an estimated population of 272 (ADLWD 2020).

ADF&G provides some information on the harvest of moose from subsistence harvest surveys, but these surveys are not conducted on a regular basis. Based on the survey administered for 2009, the most recent year for which data are available, Shaktoolik harvested more caribou than moose, but moose were still an important part of the subsistence diet for many households (Braem 2012). That year, Shaktoolik residents harvested an estimated 8 moose, or 18 pounds of moose per capita, and 27% of the community used moose through direct harvest or sharing (Braem 2012).

Subsistence research conducted in 1980 found that moose are important to Shaktoolik residents because they “can be harvested in the fall when caribou are not accessible due to lack of snow cover” (Thomas 1982:232). Based on subsistence surveys from 2009, surveyed households in Shaktoolik obtained 57% of their moose harvest in August and the remaining 43% in September (Braem 2012:55).

Thomas (1982) also documented the preferred hunting area for moose by local residents as including the Shaktoolik River, and particularly the portions upstream of “Punuk” (**Figure 2**). Hunters preferred this area because “from Punuk upriver, hills are available to allow the hunters to climb to higher elevations and glass the surrounding area” (Thomas 1982:233). While dated, this information may still

be useful for demonstrating spatial and temporal factors shaping the local search for moose. As freeze-up begins, hunters have less success finding moose along the river. At the winter 2019 Seward Peninsula Council meeting, a Council member explained that moose avoid the river during freeze-up because of the sounds of ice cracking. Moose “disappear into the high hills until that activity...ceases” (SPRAC 2019).

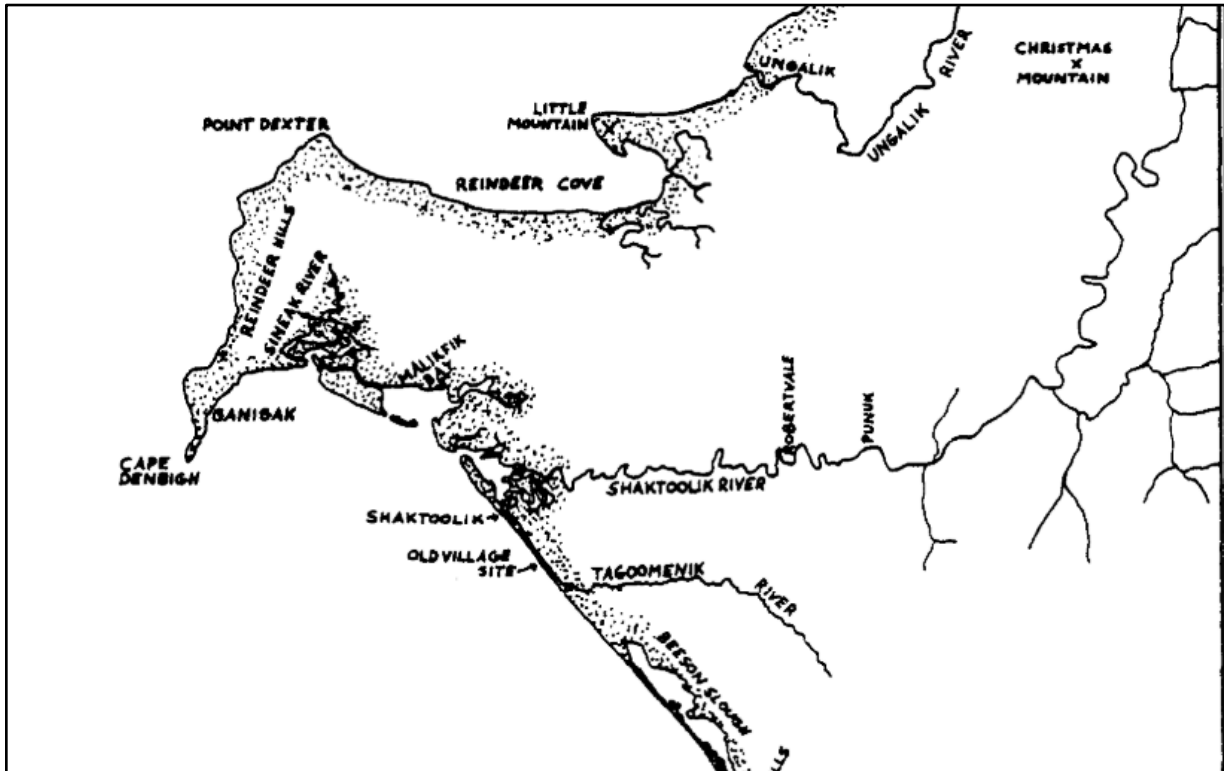


Figure 2: Map of Shaktolik place names, including “Punuk.” Source: Thomas 1982:19).

Harvest History

Most of the reported harvest within all of Unit 22A is attributable to local residents, defined here as Federally qualified subsistence users. On average, reported harvest was 27 moose annually for the 2003 – 2018 regulatory years. During this time period, 72% of the reported moose harvest was taken by local residents, while nonlocal residents harvested 7%, and nonresidents harvested 18% of the total reported harvest (ADF&G 2019a). More recently, from 2014-2018, reported harvest has been higher, averaging 39 moose annually for all of Unit 22A. For those years, local residents took a smaller percentage of the reported harvest (66%) while non-residents took a larger percentage (24%) (ADF&G 2019a; OSM 2019).

Reported moose harvest in Unit 22A is not evenly distributed among the three hunt areas. This observation cannot be explained solely on the basis of human population size and expected harvest pressure. For instance, the Unit 22A Central hunt area is home to 36% of Unit 22A residents, but accounts for 58% of the total reported harvest. In contrast, the remaining two hunt areas (Unit 22A

North and Unit 22A Remainder) contain 64% of the human population but account for only 40% of the total moose harvest (ADLWD 2020; ADF&G 2019a; OSM 2019). One likely explanation for this disparity is the difference among hunt areas in permit requirements and associated reporting rates. Specifically, Unit 22A Central requires a State or Federal registration permit, which includes penalties for non-reporting, while the remaining hunt areas require a harvest ticket that includes no such penalties.

This suggests that reported harvest (**Figure 3**) does not sufficiently represent actual harvest within Unit 22A North. This may be particularly true for harvest among local users, who reported no harvest between 2016-2018. Additional insight can be gained by considering results from household surveys. These surveys show that moose harvest by residents of Shaktoolik, the only community within this hunt area, was 21, 14, 10 and 8 moose in 1998, 1999, 2003 and 2009, respectively (ADF&G 2019b). This contrasts with the reported harvest of two moose in 2003 by local residents within Unit 22A North, for example (ADF&G 2019a). ADF&G estimates approximately 10-15 additional moose are harvested each year by local residents in Unit 22A North but are not reported (BOG 2017).

Between 2015 and 2020, a total of 14 moose were reported harvested by 18 total hunters in 22A North, for an average hunter success rate of 61%. Over this time period, reported annual moose harvest in Unit 22A North averaged 2.3 moose, ranging from zero to 6 moose. Of the hunters that reported hunting in Unit 22A North, 50% were nonresidents and 50% were Alaskan residents (BOG 2017). While the BOG extended the non-resident season by a week in 2017, no increase in non-resident harvest has been observed (FSB 2020, **Figure 3**). Accounting for unreported harvest by local residents, ADF&G estimates as many as 20 moose may be harvested each year from Unit 22A North (BOG 2017). In 2019, the harvestable surplus of moose in Unit 22A North was 32 moose, indicating current harvests are within sustainable levels and that this moose population could withstand some increase in harvest (BOG 2017).

Although reported harvest in Unit 22A North likely does not represent the magnitude of harvest, it may provide insight into hunting patterns among local users. Of local hunters who reported their harvest 2003 - 2018, 53% harvested moose in the month of August, while 41% harvest in September. This pattern does not hold in recent years, however, with all reported harvest since 2013 occurring in September (ADF&G 2019a). Hunting occurs primarily along the Shaktoolik River corridor, which provides access well into the eastern portion of the hunt area (BOG 2017), and 71% percent of local harvest occurred in either the Shaktoolik or Tagoomenik drainages (ADF&G 2019a).

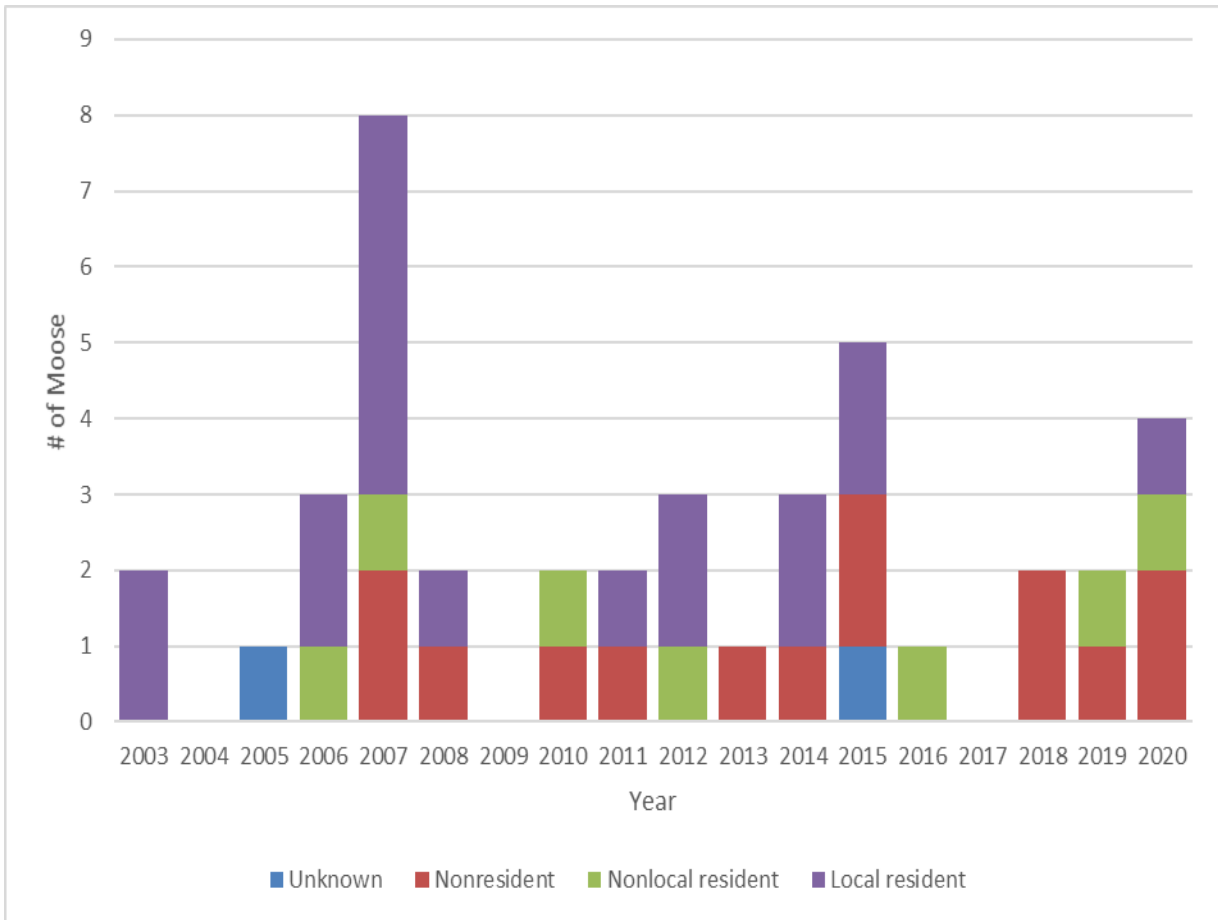


Figure 3. Reported moose harvest among local users in Unit 22A North, 2003 – 2020 (ADF&G 2019a; OSM 2019, Dunker, 2021, pers. comm.).

Guide and Transporter Use

Guides are regulated by the Alaska Big Game Commercial Services Board. To operate within a specific guide use area, a guide must be registered in that guide use area and it must be within a game management unit in which they are licensed to conduct hunts. In addition, guides must be authorized to operate within a given area by the public or private landowner (ADCCE 2019). BLM, the only Federal land manager in Unit 22A North, requires that guides be permitted to operate on BLM managed lands. The BLM permit authorizes a guide to establish a hunting camp at a specific location (Seppi 2019, pers. comm.). Though transporters must also be licensed by the Alaska Big Game Commercial Services Board, they are not required to secure permits to operate on BLM lands. Consequently, there is no cap on the number of transporters operating on BLM lands (ADCCE 2019; Seppi 2019, pers. comm.).

In Guide Use Area 22-07, which encompasses Unit 22A North, there are five active guides, none of whom are currently permitted to operate moose hunts on Federal public lands on account of the Federal

public lands closure (ADCCE 2019; Seppi 2019, pers. comm.). At its April 2019 meeting, the Council expressed concern about the potential impacts of guided moose hunting on moose migration into Unit 22A.

Effects of the Proposal

If this proposal is adopted, Federal public lands within the Unit 22A North moose hunt area will be open to all users Sep. 1 – 20, a period that coincides with the State’s nonresident season. Rescinding the Federal public lands closure will allow any of the five guides registered to operate within the hunt area to seek BLM permits to operate on Federal public land. It will also allow transporters to operate on these lands in support of non-Federally qualified users.

This action may result in additional harvest by nonlocal users. In particular, nonresident hunting pressure may increase, given the 2017 addition of 6 days to what was previously a 14-day nonresident State season, combined with the potential for increased guide use. Hunting pressure from nonlocal residents may increase as well, as moose hunting on Federal public lands will be allowed for 20 days of a 61-day resident State season. The Shaktoolik River provides access to Federal public lands, which increases the chances that rescinding the closure will result in additional nonlocal hunting pressure.

Given our limited understanding of the population status in the specific area, there is some uncertainty whether increased harvest will have a significant impact on the moose population. Recent surveys in Unit 22A indicate that the population has increased over the past decade and is above State population objectives, but it remains at a low density. Very high bull:cow ratios suggest that the population can sustain additional bull harvest, although these ratios also raise questions about local population dynamics and patterns of dispersal. While recent estimates of the harvestable surplus and harvest numbers also suggest additional bulls are available, rescinding the closure during September may or may not result in increasing harvest above sustainable levels.

Federally qualified subsistence users in Unit 22 may be affected by rescission of the Federal lands closure. If additional harvest has detrimental effects on the moose population, there will be long-term negative effects for local users. In addition, an increase in nonlocal users may result in increased user conflict in the area, particularly along the Shaktoolik River. While the lower portion of the river is bounded by non-Federal lands and is currently open to all users, most of the upper portion of the river is bounded by Federal lands and is currently open only to residents of Unit 22. In addition, local harvest in recent years occurs primarily in September, which coincides with the State’s nonresident season.

Conversely, rescinding the closure during September could also mitigate user conflicts by spreading out the non-local users across the unit. At the April 2020 Board meeting, the proponent of this proposal provided testimony to the Board that many of the Federal public lands in Unit 22A North are extremely remote and accessible only by airplane, and that the current closure serves to concentrate all users on the same travel corridors along the Shaktoolik and Niukluk Rivers (FSB 2020).

OSM PRELIMINARY CONCLUSION

Support Proposal WP22-49.

Justification

Extremely high bull:cow ratios and population estimates in 22A Central (adjacent to the area in question) that are above management objectives, as well as low reported harvests, and estimates of total harvest that are below the harvestable surplus indicate that the Unit 22A North moose population can withstand the potential increases in harvest that may result from rescinding the closure during September. Additionally, harvest is not expected to increase substantially as reported harvest did not increase following the BOG's 2017 season extension to non-resident hunters and reported harvest did not increase after the Board opened Unit 22A North to all Federally qualified subsistence users.

In 2020, the Board and Council rejected rescinding the closure, in part, due to the lack of biological information. In spring 2021, a population survey in 22A Central indicated the Unit 22A moose population remained high and in fall 2020, a composition survey indicated the bull:cow ratio remained extraordinarily high.

While the closure was originally enacted due to conservation concerns, the effects of rescinding the closure on subsistence users is unknown but may increase their hunting opportunity. Currently, all moose hunters are concentrated on the easily accessible State-managed lands along river corridors. Rescinding the Federal lands closure during September may help spread non-Federally qualified users out across the hunt area, reducing user conflicts and competition for moose.

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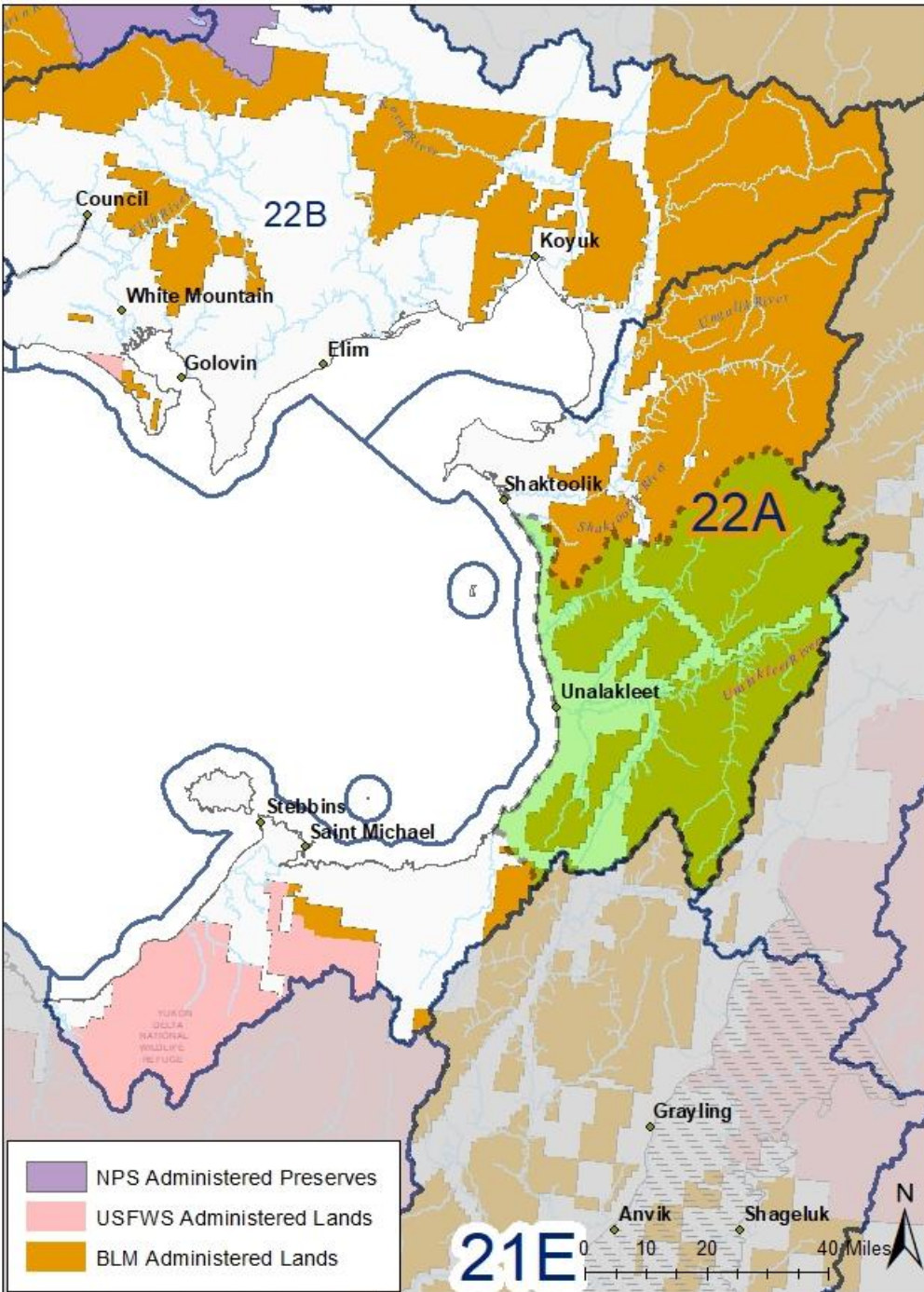
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WCR22-09b Executive Summary

Closure Location and Species	Unit 22A, that portion in the Unalakleet drainage and all drainages flowing into Norton Sound north of the Golsovia River drainage and south of the Tagoomenik and Shaktoolik River drainages – Moose
Current Regulation	<p>Unit 22A–Moose</p> <p><i>Unit 22A, that portion in the Unalakleet drainage and all drainages flowing into Norton Sound north of the Golsovia River drainage and south of the Tagoomenik and Shaktoolik River drainages—Federal public lands are closed to the taking of moose, except that residents of Unalakleet, hunting under these regulations, may take 1 bull by Federal registration permit, administered by the BLM Anchorage Field Office with the authority to close the season in consultation with ADF&G</i></p> <p style="text-align: right;"><i>Aug. 15- Sep. 14</i></p>
OSM Preliminary Conclusion	Modify the closure to open to all Federally qualified subsistence users.
Seward Peninsula Subsistence Regional Advisory Council Recommendation	
Interagency Staff Committee Comments	
ADF&G Comments	
Written Public Comments	None

FEDERAL WILDLIFE CLOSURE REVIEW
WCR22-09b

Closure Location: Unit 22A, that portion in the Unalakleet drainage and all drainages flowing into Norton Sound north of the Golsovia River drainage and south of the Tagoomenik and Shaktoolik River drainages (Unit 22A Central) (**Map 1**) —Moose



Map 1. Unit 22A Central moose hunt area. The closure area is depicted in green.

Current Federal Regulation

Unit 22A–Moose

Unit 22A, that portion in the Unalakleet drainage and all drainages flowing into Norton Sound north of the Golsovia River drainage and south of the Tagoomenik and Shaktoolik River drainages—Federal public lands are closed to the taking of moose, except that residents of Unalakleet, hunting under these regulations, may take 1 bull by Federal registration permit, administered by the BLM Anchorage Field Office with the authority to close the season in consultation with ADF&G Aug. 15-Sep. 14

Closure Dates: Year-round

Current State Regulation

Unit 22A–Moose

Unit 22A, Unalakleet River drainage and all drainages flowing into Norton Sound north of Golsovia River drainage and south of and including the Egavik Creek drainage Residents: One bull by permit available online at <http://hunt.alaska.gov> and in person in Unalakleet beginning Aug. 3. Harvest quota to be announced. Season will be closed by emergency order when quota is reached. RM841 Sept. 1-30

OR

Residents: One antlered bull by permit available online at <http://hunt.alaska.gov> and in person at license vendors in Unalakleet (a season may be announced Dec. 1-Jan. 31) RM844 May be announced

Nonresidents

No open season

Regulatory Year Initiated: 1995/96

Extent of Federal Public Lands

Unit 22A is comprised of 68% Federal public lands and consists of 56% Bureau of Land Management (BLM) managed lands and 12% U.S. Fish and Wildlife Service (USFWS) managed lands (**Map 1**). Unit 22A is comprised of 71% Federal public lands, all of which are managed by the BLM.

Customary and Traditional Use Determination

Rural residents of Unit 22 have a customary and traditional use determination for moose in Unit 22.

Regulatory History

Prior to 1995, Federal public lands in Unit 22A were open to moose harvest by all users. In 1995, the Seward Peninsula Subsistence Regional Advisory Council (Council) submitted Proposal P95-42, requesting that the 1995 fall moose season in Unit 22A be extended from Aug. 1 – Sep. 30 to Aug. 1 – Oct. 10. The Federal Subsistence Board (Board) adopted this proposal with modification to extend the season, as proposed, and to close Federal public lands for the Oct. 1 – 10 portion of the season to all users except residents of Unit 22A (FSB 1995a).

The Alaska Department of Fish and Game (ADF&G) subsequently submitted a Request for Reconsideration, R95-11, asserting that the Oct. 1 – 10 Federal public lands closure was not substantiated, and that the season extension violated established principles of wildlife management. The Board reversed their decision on P95-42, concurring that the season extension was not consistent with the maintenance of a healthy moose population. The Board recognized that residents of Unit 22A traditionally harvested moose in October but were concerned that the October season extension overlapped the rut and could have led to an unsustainable harvest. As a result of the Board's decision, the fall moose season was open Aug. 1 – Sep. 30. The Board also took action to close Federal public lands in Unit 22A to the harvest of moose to all users except residents of Unit 22A during the Dec. 1 – Jan. 31 season (FSB 1995b).

Proposal P96-50 was submitted by the Council in 1996 to ensure continuation of the Aug. 1 – Sep. 30 season in Unit 22A, as well as to request closure of Federal public lands to the harvest of moose except by Federally qualified subsistence users during this season. The Board rejected this proposal (FSB 1996) but retained the Aug. 1 – Sep. 30 season.

Proposal P98-86, submitted by the Council, requested the harvest limit be changed from one antlered bull to one moose for the Aug. 1– Sep. 30 and Dec. 1 – Jan. 31 seasons. The Board adopted this proposal with modification to change the harvest limit to one bull, which provided additional harvest opportunity, particularly during the winter season when many bulls have shed their antlers, while protecting cows (OSM 1998).

In 2003, the Alaska Board of Game (BOG) made a number of regulatory changes for moose in Unit 22. In Unit 22A, three distinct hunt areas were established, and seasons and harvest limits were adjusted to account for localized patterns of harvest. Prior to these changes, the State resident season was Aug. 1 – Sep. 30 and Dec. 1 – Jan. 31, and the harvest limit was one bull throughout Unit 22A. The BOG's actions: 1) closed the winter season in Unit 22A North (north of and including the Tagoomenik and Shaktoolik River drainages); 2) shortened the fall season to Aug. 15 – Sep. 25 and closed the winter season in Unit 22A Central; and 3) shortened the winter season to Dec. 1 – Dec. 31 and changed the harvest limit for the winter season to one antlered bull in Unit 22A remainder (Persons 2004). These changes were scheduled to become effective in regulatory year 2004/05. However, data showing steep declines in the Unit 22A moose population prompted ADF&G to issue Emergency Order 05-05-03 in

November 2003, which implemented the new regulations immediately. Due to the timing of the Emergency Order, only the winter seasons were affected. The same changes to the winter seasons were made in Federal regulation through Special Action WSA03-14, approved by the Board in December 2003.

In 2004, the Council submitted Proposal WP04-70, requesting, in part, retention of the temporary changes made through Special Action WSA03-14. Specifically, the proposal requested: 1) changing the harvest limit from one bull to one antlered moose throughout Unit 22A; 2) eliminating the winter seasons in Unit 22A North and Central; 3) shortening the fall season from Aug. 1 – Sep. 30 to Aug. 15 – Sept. 30 in Unit 22A Central; and 4) closing Federal public lands throughout Unit 22A to the harvest of moose in all seasons, except by residents of Unit 22A (OSM 2004). The Board adopted Proposal WP04-70 with modification to set the harvest limit at one bull for the fall seasons and one antlered bull for the winter season in Unit 22 remainder, and further reduce the Unit 22A Central season, to Aug. 15 – Sep. 25 (OSM 2021a). These changes resulted in alignment of State and Federal moose seasons and harvest limits in Unit 22A.

Portions of Unit 22A were affected by temporary regulatory changes in 2005 that were subsequently adopted into Federal regulation by Board action in 2006. In Unit 22A Central, moose harvest was temporarily closed in 2005 when the Board approved Special Action WSA05-03 due to low population and recruitment estimates (OSM 2021a). The State moose season was also closed in Unit 22A Central in 2005 by Emergency Order 05-04-05. In 2006, the Board adopted Proposal WP06-39, which closed Federal public lands to the harvest of moose in Unit 22A Central. The modified season in Unit 22A mirrored State regulation changes associated with the adoption of State Proposal 6 and Emergency Order 05-08-05 in 2005.

The Unit 22A Central closure to all users was modified in 2008 when the Board adopted Proposal WP08-36/37 with modification to allow residents of Unalakleet to harvest one bull moose during an Aug. 15–Sep. 14 season, by Federal registration permit. As part of the analysis for this proposal, a Section 804 analysis was conducted in Unit 22A Central, which determined that residents of Unalakleet were the most dependent on moose in the area (OSM 2021a). This action also resulted in the Federal lands closure, as it currently exists in Unit 22A Central. The BOG also lifted the State closure in 2007 via adoption of State Proposal 19 and established a Sep. 1– 14 moose season in Unit 22A Central.

In regulatory years 2011 and 2012, the State’s harvest quotas were not met during the Sep. 1– 14 seasons in Unit 22A Central. Subsequently, in 2013, ADF&G submitted State Proposal 14 to establish a Dec. 1 – Dec. 31 *may be announced* season in this hunt area. The BOG adopted Proposal 14 at their January 2014 meeting, establishing a winter *may be announce* season in 2014. Harvest during this season was limited to one antlered bull and was open to residents only.

In 2013, 2014 and 2015, State harvest quotas remained unmet for the registration hunt in Unit 22A Central. As a result, the season was extended from Sep. 1 – 14 to Sep. 1 – 20 each year by Emergency

Order (05-05-13, 05-11-14, 05-08-15, respectively). In 2015, the quota was met during the extended season and as a result, the season was closed by Emergency Order on September 17, 2015 (05-09-15).

The Council reviewed the closure in Unit 22A Central during its winter 2016 meeting when it recommended maintaining the status quo.

In 2017, the State changed its fall season dates in Unit 22A Central from Sept. 1 – 14 to Sept. 1 – 20 to align regulations with the season dates provided through season extension by emergency order in RY2011-2015. However, a 2017 population survey demonstrated an increase in the Unit 22A Central moose population, resulting in an increased harvest quota. ADF&G issued an emergency order to first open, then extend the winter season until January 31, 2018, although the quota was still not met. In 2018, ADF&G extended the fall moose season until Sept. 30 as the quota had not been met and petitions from RM841 permit holders and the Native Village of Unalakleet indicated preference for increased fall hunting opportunity over winter.

In January 2020, the BOG adopted Proposal 38 as amended, which extended the resident fall season (RM841) from Sept. 1 – 20 to Sept. 1 – 30 and the *may be announced* winter season (RM844) from Dec. 1 – 31 to Dec. 1 – Jan. 31 in Unit 22A Central. The proposal also changed the fall harvest limit from one antlered bull to one bull. The amendment was to change the boundary between the Unit 22A North and Unit 22A Central hunt areas to the Egavik Creek drainage. ADF&G submitted the proposal to provide the flexibility to administer the fall and winter hunts during the full range of season dates historically provided for by emergency order without the need to continually extend seasons by emergency order. Additionally, ADF&G would maintain the authority to close seasons early if quotas were met, mitigating any conservation concerns. The Village of Shaktoolik and Southern Norton Sound Fish and Game Advisory Committee (AC) supported the amendment to change the hunt area boundary to allow Shaktoolik residents to hunt west of the headwaters of the Tagoomenik River without influence from the RM841 hunt and to better align with traditional hunting areas.

In August 2020, the Board approved a revised closure policy, which stipulated all closures will be reviewed every four years. The policy also specified 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.

Current Events

Proposal WP22-48 requests modifying the hunt area boundary for moose in Unit 22A. Specifically, the proposal requests changing the boundary between Unit 22A Central and Unit 22A North from the Tagoomenik and Shaktoolik river drainages to the Egavik Creek drainage. While this would reduce the size of the Unit 22A Central hunt area, it would align the area with the new State boundaries and better align with the traditional use areas of Shaktoolik and Unalakleet residents.

Closure last reviewed: 2015 – WCR15-09a/b/c

Justification for Original Closure (ANILCA Section 815 (3) criteria):

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 the 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 believed there was a conservation concern due to the observed decline in the moose population, along with poor calf recruitment in Unit 22A. With concurrence from ADF&G, the Board chose to limit the harvest to residents of Unit 22A (FSB 1995a).

Council Recommendation for Original Closure:

The Council supported Proposal P95-42, extending the season dates from Aug. 1 – Sep. 30 to Aug. 1 – Oct. 10. The Board made the modification to close the October portion of the season to all users, except residents of Unit 22A, as suggested by the State. The Council did not have the opportunity to make a recommendation on this modification; however, the Council Chair was supportive of the amendment as nonlocal use of the area during October was low (FSB 1995a).

State Recommendation for Original Closure:

ADF&G opposed Proposal 95-42 because the proposal did not indicate users were not being accommodated by current regulations, and the 10-day season extension could result in increased harvest that could adversely impact the low-density moose population. ADF&G stated that if the Board were to approve the proposal, they should restrict harvest within the 10-day season extension to residents of Unit 22A (FSB 1995a).

Biological Background

Prior to 1930, moose were scarce on the Seward Peninsula, but became a resident species by the late 1960s. Moose populations increased during the 1970s and peaked during the 1980s (Gorn 2012). There were several severe winters during the 1990s, which may have contributed to population declines during that time (Nelson 1995). Populations within Unit 22 have not recovered to peak levels of the 1980s, with brown bear predation on moose calves suspected to be a contributing factor (Gorn 2012). In 2020, ADF&G estimated the total Unit 22 moose population as 6,775 moose, which is within State management objectives. ADF&G also considered the status of the Unit 22A moose population to be increasing (ADF&G 2020a).

Spring surveys were conducted between 1989 and 2021 to estimate the size of the moose population in Unit 22A Central (**Table 1**). The population in this area has been increasing since 2003 and was estimated to be 766 moose ($\pm 16\%$), or 0.32 moose/mi², in 2021. This estimate approaches the upper bound of the Unit 22A management goal of 600 – 800 moose. In addition to estimates of population size, spring surveys generated age class estimates. The percent of short yearlings, or ten-month-old

calves, is an estimate of recruitment and was 10% in 2021 (**Table 1**). This was lower than recruitment estimates in the previous decade but was characterized as adequate by the Unit 22 Area Biologist (SPRAC 2017).

Fall composition surveys were conducted between 2003 and 2020 in the Unalakleet drainage (**Table 2**). The bull:cow ratio increased substantially between 2006 and 2016, remaining high in 2020 at 122 bulls:100 cows. This unusually high bull:cow ratio is well above the goal of at least 30 bulls:100 cows and raises questions about the influences of local harvest patterns and moose movements. Local biologists believe that this issue warrants further attention (BOG 2017, SPRAC 2017).

Table 1. Population and age class estimates for moose in the Unit 22A Central hunt area during spring, 1989 – 2021 (Gorn and Dunker 2014, SPRAC 2017, Dunker 2021, pers. comm.).

Survey area	Year	Population estimate (moose)	Density estimate (per mi ²)	% Short yearlings	Survey method
Unalakleet drainage	1989	325	0.29	16	Gassaway
	2003	75	0.04	15	Geospatial
	2005	123	0.15	8	Geospatial
	2008	339	0.14	18	Geospatial
	2012	545	0.24	19	Geospatial
	2017	840	0.35	12	Geospatial
	2021	766	0.32	10	Adaptive Cluster

Table 2. Composition estimates for moose in Unit 22A Central hunt area during fall, 2003 – 2020 (Gorn and Dunker 2014, SPRAC 2017, Dunker 2021, pers. comm.).

Survey Area	Year	Bulls: 100 Cows	Calves: 100 Cows	Total moose observed
Golsovia River	2003	50	67	26
Unalakleet River	2003	69	20	66
	2006	69	34	78
	2016	124	30	250
	2020	122	34	297

Cultural Knowledge and Traditional Practices

The Seward Peninsula region has been inhabited by humans for at least 12,000 years. The Inupiaq, Siberian Yupik, and Central Yup'ik people of the area have a deeply rooted practice of subsistence hunting, fishing and gathering of wild resources. As moose increased in the region during the second half of the 20th century, harvest of the animals grew.

The village of Unalakleet is located approximately 148 miles southeast of Nome (Kawerak 2021). In 2019, Unalakleet had an estimated population of 721 (ADLWD 2020). A 2003 subsistence study found that surveyed Unalakleet households harvested most of their moose between August and October (Georgette et al. 2017). **Table 3** shows surveyed Unalakleet households’ harvest of moose, as documented in the Community Subsistence Information System (CSIS) (ADF&G 2021). Note that in 2006, the year in which Unit 22A Central was closed to all moose harvest, few surveyed Unalakleet households used or attempted to harvest moose. There has not been a subsistence survey conducted for Unalakleet since the moose closure was removed for Unalakleet residents in 2008. At recent meetings of the Seward Peninsula Council, representatives from Unalakleet have reported that moose seasons have been “good,” with adequate harvest (SPRAC 2019, 2020).

Table 3. Four measures of moose hunting and use by surveyed Unalakleet households, as documented in subsistence surveys (ADF&G 2021).

Year	Percent using	Percent attempting to harvest	Percent harvesting	Pounds per person
2006	6%	3%	2%	2.4
2004	53%	40%	4%	6.5
2002	67%	38%	12%	20.5

Harvest History

The Unit 22A Central moose population is managed through a shared quota by Federal and State permits. Harvest under Federal regulations occurs by Federal registration permit (FM2201) during a fall season. Harvest under State regulations occurs by registration permit hunt RM841 during a fall season and by RM844 during a winter *may be announced* season. Both State hunts are only open to residents.

Between 2008 and 2020, total annual reported moose harvest for Unit 22A Central ranged from 18-39 moose, with quotas and therefore harvest, increasing over time (**Table 4**). Federal harvest accounted for 16.5% of the total reported harvest on average. Success rates of users hunting under Federal regulations is very low, averaging 13% between 2008 and 2020 (ADF&G 2020b, 2020c; OSM 2021b).

Table 4. State and Federal moose harvest in Unit 22A Central (ADF&G 2020b, 2020c; OSM 2021b).

Year	State Quota	State Harvest (Federally Qualified Subsistence User)	State Harvest (Non-Federally Qualified Subsistence User)	Fall Season (RM841)	Winter season (RM844)	Federal Harvest (FM2201)	Total Reported Harvest
2008	14	8	1	Sept. 1-14		5	14
2009	14	11	0	Sept. 1-14		10	21
2010	14	6	0	Sept. 1-13		9	15
2011	14	15	0	Sept. 1-17		4	19
2012	22	15	0	Sept. 1-20	Dec. 1-31	2	17
2013	22	18	0	Sept. 1-20		3	21
2014	22	20	0	Sept. 1-20		3	24
2015	22	15	1	Sept. 1-17		0	19
2016	22	20	1	Sept. 1-9		5	26
2017	34	23	0	Sept. 1-20	Dec. 1-Jan. 31	5	28
2018	34	34	1	Sept. 1-30		0	35
2019	34	26	2	Sept. 1-20		3	32
2020	70*	44*	2*	Sept. 1-30	Dec. 7-Jan. 31		45

*Fall harvest quota in 2020 was 50 bulls; winter quota was 20 bulls

**Fall harvest only

Effects

If modified, this closure could either be lifted to allow moose hunting on Federal public lands by all Federally qualified subsistence users or it could be completely rescinded to allow harvest by all users. As the hunt is closely managed by harvest quotas, little conservation concerns exist for overharvest if this closure is completely lifted. While this closure was originally enacted for reasons of conservation, opening to all users may decrease hunting opportunity for Federally qualified subsistence users on Federal public lands within Unit 22A Central due to increased competition with non-Federally qualified users and a more conservative and incremental approach is warranted at this time.

OSM PRELIMINARY CONCLUSION:

maintain status quo

modify or eliminate the closure to open to all Federally qualified subsistence users

The modified regulation should read:

Unit 22A–Moose

*Unit 22A, that portion in the Unalakleet drainage and all drainages flowing into Norton Sound north of the Golsovia River drainage and south of the Tagoomenik and Shaktoolik River drainages—Federal public lands are closed to the taking of moose, except that ~~residents of Unalakleet~~ **Federally qualified subsistence users**, hunting under these regulations, may take 1 bull by Federal registration permit, administered by the BLM Anchorage Field Office with the authority to close the season in consultation with ADF&G* Aug. 15-Sep. 14

Justification

The moose population and harvest quotas have increased in Unit 22A Central and the bull:cow ratio is extraordinarily high, indicating surplus bulls available for harvest. Therefore, providing harvest opportunity for all Federally qualified subsistence users in Unit 22A remainder is warranted. Opening to only Federally qualified subsistence users rather than all users represents a conservative, incremental approach that is consistent with Board action in Unit 22A North and Unit 22A remainder in 2018.

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FEDERAL WILDLIFE CLOSURE REVIEW

WCR22-09C

Closure Location: Unit 22A remainder (Figure 1)—Moose

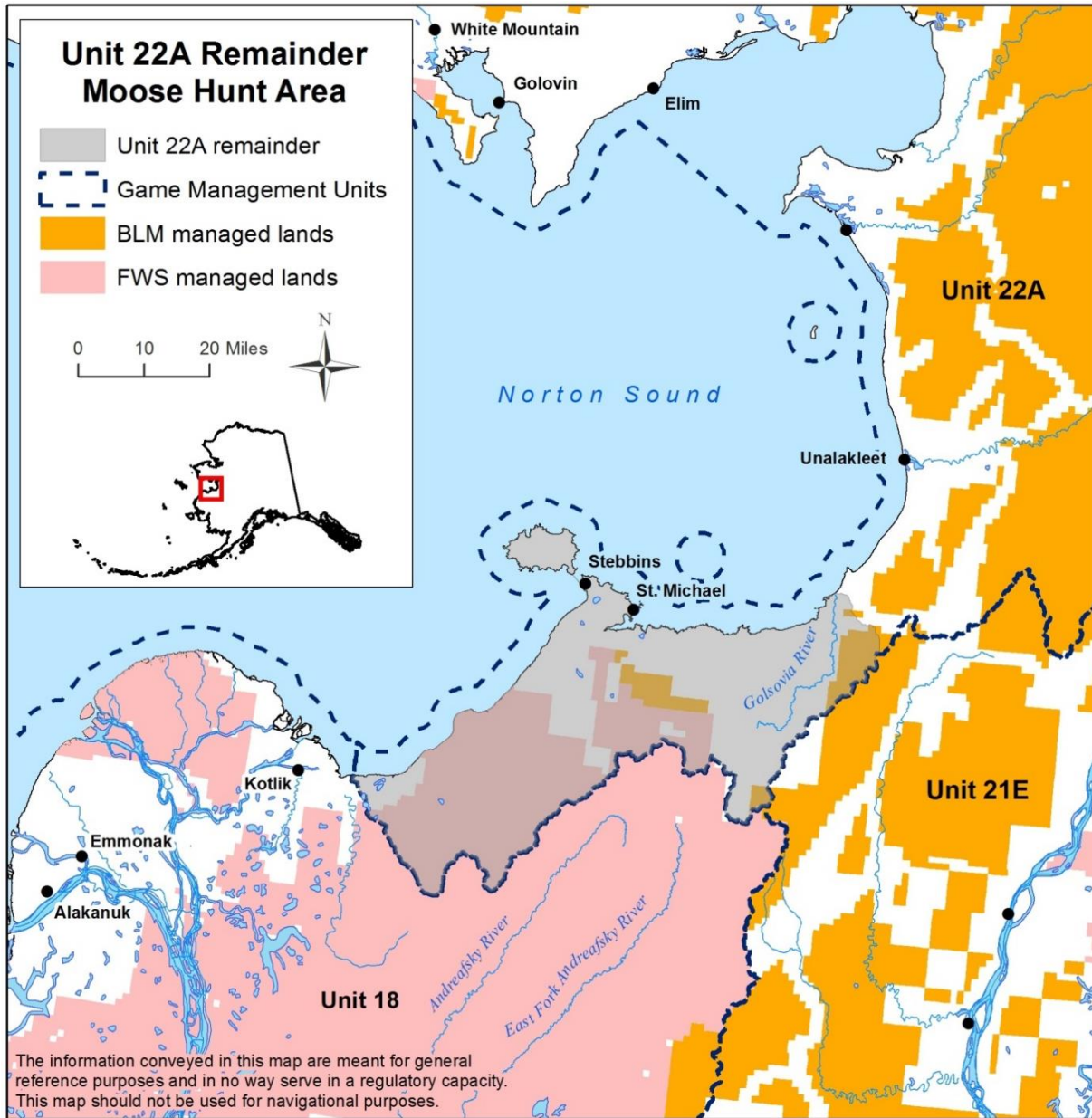


Figure 1. Unit 22A remainder moose hunt area.

Current Federal Regulation

Unit 22A–Moose

Unit 22A, remainder—1 bull. However, during the period Jan.1-Feb. 15, only an antlered bull may be taken. Aug. 1-Sep. 30.
Jan. 1-Feb. 15

Federal public lands are closed to the taking of moose, Oct. 1-Aug. 31, except by Federally qualified subsistence users

Closure Dates: Oct. 1 – Aug. 31

Current State Regulation

Unit 22A–Moose

Unit 22A, Residents: One bull HT Aug. 1-Sept. 30
remainder
OR

Residents: One antlered bull HT Jan. 1-31

Nonresidents: One bull with 50-inch antlers or antlers with 4 or more brow tines on at least one side HT Sept. 1-30

Regulatory Year Initiated: 1995

Extent of Federal Public Lands

Unit 22A remainder is comprised of 50% Federal public lands and consists of 43% U.S. Fish and Wildlife Service (USFWS) managed lands and 7% Bureau of Land Management (BLM) managed lands (**Figure 1**).

Customary and Traditional Use Determination

Rural residents of Unit 22 have a customary and traditional use determination for moose in Unit 22.

Regulatory History

Prior to 1995, Federal public lands in Unit 22A were open to moose harvest by all users. In 1995, the Seward Peninsula Subsistence Regional Advisory Council (Council) submitted Proposal P95-42, requesting that the 1995 fall moose season in Unit 22A be extended from Aug. 1 – Sep. 30 to Aug. 1 – Oct. 10. The Federal Subsistence Board (Board) adopted this proposal with modification to extend the

season, as proposed and to close Federal public lands for the Oct. 1 – 10 portion of the season to all users except residents of Unit 22A (FSB 1995a).

The Alaska Department of Fish and Game (ADF&G) subsequently submitted a Request for Reconsideration, R95-11, asserting that the Oct. 1 – 10 Federal public lands closure was not substantiated and that the season extension violated established principles of wildlife management. The Board reversed their decision on P95-42, concurring that the season extension was not consistent with the maintenance of a healthy moose population. The Board recognized that residents of Unit 22A traditionally harvested moose in October but were concerned that the October season extension overlapped the rut and could have led to an unsustainable harvest. As a result of the Board's decision, the fall moose season was open Aug. 1 – Sep. 30. The Board also acted to close Federal public lands in Unit 22A to the harvest of moose to all users except residents of Unit 22A during the Dec. 1 – Jan. 31 season (FSB 1995b).

Proposal P96-50 was submitted by the Council in 1996 to ensure continuation of the Aug. 1 – Sep. 30 season in Unit 22A, as well as to request closure of Federal public lands to the harvest of moose except by Federally qualified subsistence users during this season. The Board rejected this proposal (FSB 1996) but retained the Aug. 1 – Sep. 30 season.

Proposal P98-86, submitted by the Council, requested the harvest limit be changed from one antlered bull to one moose for the Aug. 1 – Sep. 30 and Dec. 1 – Jan. 31 seasons. The Board adopted this proposal with modification to change the harvest limit to one bull, which provided additional harvest opportunity, particularly during the winter season when many bulls are antlerless, while protecting cows (OSM 1998).

In 2003, the Alaska Board of Game (BOG) made several regulatory changes for moose in Unit 22. In Unit 22A, three distinct hunt areas were established, and seasons and harvest limits were adjusted to account for localized patterns of harvest. Prior to these changes, the State resident season was Aug. 1 – Sep. 30 and Dec. 1 – Jan. 31 and the harvest limit was one bull throughout Unit 22A. The BOG's actions: 1) closed the winter season in Unit 22A North (north of and including the Tagoomenik and Shaktoolik River drainages); 2) shortened the fall season to Aug. 15 – Sep. 25 and closed the winter season in Unit 22A Central (Unalakleet River drainage area); and 3) shortened the winter season to Dec. 1 – Dec. 31 and changed the harvest limit for the winter season to one antlered bull in Unit 22A remainder (Persons 2004). These changes were scheduled to become effective in regulatory year 2004/05. However, data showing steep declines in the Unit 22A moose population prompted ADF&G to issue Emergency Order 05-05-03 in November 2003, which implemented the new regulations immediately. Due to the timing of the Emergency Order, only the winter seasons were affected. The same changes to the winter seasons were made in Federal regulation through Special Action WSA03-14, approved by the Board in December 2003.

In 2004, the Council submitted Proposal WP04-70, requesting, in part, retention of the temporary changes made through Special Action WSA03-14. Specifically, the proposal requested: 1) changing the harvest limit from one bull to one antlered moose throughout Unit 22A; 2) eliminating the winter

seasons in Unit 22A North and Central; 3) shortening the fall season from Aug. 1 – Sep. 30 to Aug. 15 – Sept. 30 in Unit 22A Central; and 4) closing Federal public lands throughout Unit 22A to the harvest of moose in all seasons, except by residents of Unit 22A (OSM 2004). The Board adopted Proposal WP04-70 with modification to set the harvest limit at one bull for the fall seasons and one antlered bull for the winter season in Unit 22 remainder and further reduced the Unit 22A Central season, to Aug. 15 – Sep. 25 (OSM 2021b). These changes resulted in alignment of Federal and State moose seasons and harvest limits in Unit 22A.

Due in part to low population and recruitment estimates, portions of Unit 22A were affected by temporary regulatory changes in 2005 that were subsequently adopted into Federal regulation by Board action in 2006. In Unit 22A remainder, harvest seasons were shifted from Dec. 1 – 31 to Jan. 1 – 31 in 2005 with the Board's approval of Special Action WSA05-12/13 and in 2006 with the adoption of Proposal WP06-38 (OSM 2021b). These changes provided communities more harvest opportunity, due to more favorable hunting conditions later in the winter but were not expected to affect the moose population due to the scarcity of mature antlered bulls at this time of year. The modified season in Unit 22A mirrored State regulation changes associated with the adoption of State Proposal 6 and Emergency Order 05-08-05 in 2005.

Proposal WP10-80, submitted by the Stebbins Community Association, requested that the winter moose season in Unit 22A remainder be shifted from Jan. 1 – 31 to Jan. 15 – Feb. 15. The Board adopted the proposal with modification to extend the season to February 15 but keep the January 1 start date. The modification provided additional harvest opportunity to Federally qualified subsistence users (OSM 2021b).

In the past decade, inclement weather has affected winter moose harvest in Unit 22A remainder and resulted in multiple special action requests to extend seasons. Special Action WSA07-08, submitted by the Stebbins Community Association, requested that a Feb. 1 – Mar. 1, 2008 bull season be added in Unit 22A remainder to provide additional harvest opportunity. The Board approved the special action but modified the season to Feb. 27 – Mar. 5 because a decision could not be made in time to accommodate the original request. Special Action WSA08-17 extended the winter bull moose season on Federal public lands within Unit 22A remainder an additional two weeks (Feb. 7 – 20) in 2009. The season extension was approved by the Board to provide additional harvest opportunities for Federally qualified subsistence users after a period of inclement weather and high gas prices prevented users from hunting moose (OSM 2021b). The winter of 2011/2012 was unusually cold and prevented many Federally qualified subsistence users from harvesting moose during the Jan. 1 – Feb. 15 season in Unit 22A remainder. In February 2012, Special Action WSA11-09 was approved by the Board (OSM 2021b) and Emergency Order 05-06-12 was issued by the State to provide a 14-day extension to the winter moose season to provide additional harvest opportunity.

In 2017, Temporary Special Action WSA17-01, submitted by Lance Kronberger of Eagle River, requested that the Federal public lands closure in Unit 22A remainder be rescinded Sep. 1 – 30, 2017. The proponent asserted that the moose population in this hunt area had grown considerably, due in part to the rapid growth of the Unit 18 moose population. The Board rejected this request on the grounds

that conservative management of the Unit 22A remainder moose population was still warranted but acknowledged that continued review of the issue was prudent to ensure that the closure remained justifiable.

The request to open Federal public lands in Unit 22A remainder during the State's nonresident season was resubmitted by Mr. Kronberger as Proposal WP18-37. The Board adopted the proposal with modification to open Federal public lands to all Federally qualified subsistence users. Previously, moose hunting was open only to residents of Unit 22A. In their deliberation, the Board expressed the difficulty of the decision, noting the absence of clear biological evidence in support of full rescission of the closure. They opted for the more conservative incremental liberalization, but again expressed an interest in additional population level information that might support rescission of the closure in the future.

In April 2020, the Board adopted Proposal WP20-42 to rescind the closure to non-Federally qualified users from Sept. 1-30, while maintaining the closure for the remainder of the year. The Board commented that while current biological information for Unit 22A remainder was lacking, adjacent units had medium-high density moose populations with good bull:cow ratios. Additionally, Unit 22A remainder is extremely remote and the number of non-Federally qualified users accessing the hunt area is likely low. Guiding on the USFWS lands within the hunt area is limited to one guide with a maximum harvest of eight bulls per year. Federally qualified subsistence users still have a priority in the hunt area due to a longer season, and the potential for user conflicts and overharvest remains low.

In August 2020, the Board approved a revised closure policy, which stipulated all closures will be reviewed every four years. The policy also specified 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.

Closure last reviewed: 2020– WP20-42

Justification for Original Closure (ANILCA Section 815 (3) criteria):

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 believed there was a conservation concern due to the observed decline in the moose population, along with poor calf recruitment, in Unit 22A. With concurrence from ADF&G, the Board chose to limit the harvest to residents of Unit 22A (FSB 1995a).

Council Recommendation for Original Closure:

The Council supported Proposal P95-42, extending the season dates from Aug. 1–Sep. 30 to Aug. 1–Oct. 10. The Board made the modification to close the October portion of the season to all users,

except residents of Unit 22A, as suggested by the State. The Council did not have the opportunity to make a recommendation on this modification; however, the Council Chair was supportive of the amendment as nonlocal use of the area during October was low (FSB 1995a).

State Recommendation for Original Closure:

ADF&G opposed Proposal 42 because the proposal did not indicate users were not being accommodated by current regulations and the 10-day season extension could result in increased harvest that could adversely impact the low-density moose population. ADF&G stated that if the Board were to approve the proposal, they should restrict harvest within the 10-day season extension to residents of Unit 22A (FSB 1995a).

Biological Background

Prior to 1930, moose were scarce on the Seward Peninsula, but became a resident species by the late 1960s. Moose populations increased during the 1970s and peaked during the 1980s (Gorn 2012). There were several severe winters during the 1990s, which may have contributed to population declines during that time (Nelson 1995). Populations within Unit 22 have not recovered to peak levels of the 1980s, with brown bear predation on moose calves suspected to be a contributing factor (Gorn 2012). In 2020, ADF&G estimated the total Unit 22 moose population as 6,775 moose, which is within State management objectives. ADF&G also considered the status of the Unit 22A moose population to be increasing (ADF&G 2020).

Unit 22A remainder is the southernmost of three moose hunt areas in Unit 22A and is comprised of the portion of Unit 22A south of and including the Golsovia River drainage (**Figure 1**). In Unit 22, regular moose surveys are limited to select drainages. Population estimates do not exist for Unit 22A remainder, and composition data has been updated infrequently (Gorn and Dunker 2014). The single contemporary metric for Unit 22A remainder is a recruitment survey conducted in 2018 in the Pitmiktalik and Golsovia river drainages. That survey indicated a recruitment rate of 10%, which was characterized as low by local biologists (SPRAC 2019).

Given the limited biological information available for Unit 22A remainder, this analysis will rely on recent population estimates in adjacent areas, including the Unit 22A Central hunt area to the northeast, Unit 21E to the southeast, and Unit 18 to the south.

Unit 22A Central

Spring surveys were conducted between 1989 and 2021 to estimate the size of the moose population in Unit 22A Central (**Table 1**). The population in this area has been increasing since 2003 and was estimated to be 766 moose ($\pm 16\%$), or 0.32 moose/mi², in 2021. This estimate approaches the upper bound of the Unit 22A management goal of 600 – 800 moose. In addition to estimates of population size, spring surveys generated age class estimates. The percent of short yearlings, or ten-month-old calves, is an estimate of recruitment, and was 10% in 2021 (**Table 1**). This was lower than recruitment estimates in the previous decade but was characterized as adequate by the Unit 22 Area Biologist (SPRAC 2017).

Fall composition surveys were conducted between 2003 and 2020 in the Unalakleet drainage (**Table 2**). The bull:cow ratio increased substantially between 2006 and 2016, remaining high in 2020 at 122 bulls:100 cows. This unusually high bull:cow ratio is well above the goal of at least 30 bulls:100 cows and raises questions about the influences of local harvest patterns and moose movements. Local biologists believe that this issue warrants further attention (BOG 2017, SPRAC 2017).

Unit 21E

Moose are present throughout Unit 21E. Prior to 2000, population trends were difficult to assess due to changing survey areas and methodologies (Boudreau 2002). However, local residents reported declining populations beginning in the mid-1990s and the BOG established an intensive management plan to reduce predators for Unit 21E in 2010 (ADF&G 2016).

Surveys conducted between 2000 and 2012 indicate that the population in this area was relatively stable during this period, varying between 0.9 and 1.2 moose/mi² (**Table 3**). The most recent survey was conducted in 2019, when the moose population was estimated to be 8,607 moose, or 2.1 moose/mi², within the Wolf Control Focus Area (WCFA), which comprises ~80% of the historical survey area. The population is believed to be stable and exceeds the intensive management objective of 1.0 moose/mi² (Peirce 2014; Peirce 2017, pers. comm.; Burch 2019, pers. comm.). To date, wolf control has not been initiated in Unit 21E (ADF&G 2016).

Bull:cow ratios in Unit 21E were high between 2008 and 2011 (**Table 4**), exceeding the management objective of 25 – 30 bulls:100 cows. In 2011, the last time composition surveys were conducted, the calf:cow ratio was 47 calves:100 cows, exceeding the management objective of 30 – 40 calves:100 cows.

It is unknown to what degree moose dispersal is influencing local moose densities in this area. Given the recent growth of the Unit 21E moose population, dispersal into Unit 22A could be occurring above historical levels and may be contributing to observations by locals and guides that there have been more moose in Unit 22A in recent years.

Unit 18

Moose began to immigrate into the Yukon-Kuskokwim Delta during the mid- to late-1940s and have become an important subsistence resource for locals. Most of the Yukon-Kuskokwim Delta is lowland treeless tundra and is not suitable as winter moose habitat. Consequently, much of the region supports only low to very low-density moose populations. However, productive habitat does exist along river corridors. The Yukon River population currently occupies most of the available riparian habitat, is at moderate to high density, is growing and has high calf production and yearling recruitment (Perry 2014). Several moose survey areas exist in Unit 18, with the Lowest Yukon and Andrafsky areas being the most relevant to this analysis.

Between 1988 and 2008, surveys to estimate population size were conducted in the Lowest Yukon survey area of Unit 18 (**Table 5**). At that time, the survey area encompassed the riparian corridor along

the main stem of the Yukon River downstream of Mountain Village (Perry 2014). The population grew significantly during that time, coincident with a six-year harvest moratorium in the area. In February 2017, a survey was conducted in an expanded survey area to accommodate the widening distribution of the moose. The results of that survey estimated the population to be 8,226 moose in the expanded survey area, or 4.7 moose/mi². For comparison purposes, the moose density within the original survey area was calculated to be 4.8 moose/mi² in 2017, compared to 2.4 moose/mi² in 2008. The population has continued to grow substantially since 2017, with 2021 population and density estimates of 12,031 moose and 6.9 moose/mi², respectively. This is well above the State management objective of 2,500 – 3,500 moose for this area (Perry 2014).

In addition to surveys aimed at estimating population size, composition surveys have been conducted periodically (**Table 6**). In 2016, the bull:cow ratio was 25 bulls:100 cows, which is below the management objective of 30 bulls:100 cows and a notable decline since 2013. Calf:cow ratios in this survey area have been consistently high since 2004 and are indicative of a growing moose population (Perry 2006, 2008, 2014; Rearden 2015, Oster 2020).

The adjacent Andreafsky survey area includes the Yukon River from Pilot Village downstream to Mountain Village (Perry 2014). In 2021, the moose population in this survey area was estimated at 6,852 moose (**Table 5**). Like the moose population in the Lowest Yukon survey area, the population in the Andreafsky area has grown substantially since the early 2000s, but it remains at lower density compared to the Lowest Yukon population. Bull:cow ratios in the Andreafsky area were much higher than those in the Lowest Yukon area, at 63 bulls:100 cows in 2020 (**Table 6**). High calf:cow ratios in 2011 declined to 35 calves:100 cows in 2020 and are indicative of a stable moose population (Perry 2006, 2008, 2014; Rearden 2015, Oster 2020).

It is unknown the degree to which moose dispersal from Unit 18 is influencing moose density in southern Unit 22. However, given the high moose density and continuing growth of the Yukon and Andreafsky populations, there is likely an effect. Local biologists report that, in Unit 18, moose can be found anywhere there are willows present (Rearden 2017, pers. comm.). This suggests that movement through the riparian corridors of the Andreafsky drainages into Unit 22A is likely. During its April 2020 meeting, the Board received public testimony that moose have been observed traveling between Units 18 and 22A, and that the rolling hills and low passes that separate these units makes for easy moose travel (FSB 2020).

Table 1. Population and age class estimates for moose in the Unit 22A Central hunt area during spring, 1989 – 2021 (Gorn and Dunker 2014, SPRAC 2017, Dunker 2021, pers. comm.).

Survey area	Year	Population estimate (moose)	Density estimate (per mi ²)	% Short yearlings	Survey method
Unalakleet drainage	1989	325	0.29	16	Gassaway
	2003	75	0.04	15	Geospatial
	2005	123	0.15	8	Geospatial
	2008	339	0.14	18	Geospatial
	2012	545	0.24	19	Geospatial
	2017	840	0.35	12	Geospatial
	2021	766	0.32	10	Adaptive Cluster

Table 2. Composition estimates for moose in the Unit 22A Central hunt area during fall, 2003 – 2020 (Gorn and Dunker 2014, SPRAC 2017, Dunker 2021, pers. comm.).

Survey Area	Year	Bulls: 100 Cows	Calves: 100 Cows	Total moose observed
Golsovia River	2003	50	67	26
Unalakleet River	2003	69	20	66
	2006	69	34	78
	2016	124	30	250
	2020	122	34	297

Table 3. Population estimates for moose in Unit 21E, 2000 – 2019 (Peirce 2014, Peirce 2017, pers comm.; Burch 2019, pers. comm.).

Survey area	Year	Population estimate ± 90% Confidence Interval (moose)	Density estimate (per mi ²)	Survey method
Unit 21E	2000	5,151 ± 13%	1.0	Gassaway
	2005	4,673 ± 17%	0.9	Geospatial
	2009	6,218 ± 17%	1.2	Geospatial
	2012	5,710 ± 16%	1.1	Geospatial (w/ SCF ^a)
	2012 ^b	5,398 ± 19%	1.3	Geospatial (w/ SCF ^a)
	2016 ^b	8,372 ± 18%	2.0	Geospatial (w/ SCF ^a)
	2019 ^b	8,607 ± 27%	2.1	Geospatial (w/ SCF ^a)

^aSightability Correction Factor

^bResults reported for the WCFA, which is smaller than the historical survey area. The WCFA differed slightly in size among survey years.

Table 4. Composition estimates for moose in Unit 21E during fall, 2008 – 2011 (Peirce 2014). Data from the 2009 survey, which was only partially completed, is not shown.

Survey Area	Year	Bulls: 100 Cows	Calves: 100 Cows	Total moose observed
Unit 21E	2008	62	37	186
	2010	61	51	287
	2011	64	47	201

Table 5. Population estimates for moose in portions of Unit 18, 1988 – 2021 (Rearden 2015 and 2017, pers. comm., ADF&G 2021a and 2021b).

Survey area	Year	Population estimate ± 95% Confidence Interval (moose)	Density estimate (per mi ²)	Survey method
Lowest Yukon	1988	0	NA	Minimum count
	1992	28	0.0	Minimum count
	1994	65	0.0	Minimum count
	2002	674 ± 21%	0.6	Geospatial
	2005	1,342 ± 21%	1.1	Geospatial
	2008	2,827 ± 11%	2.4	Geospatial
	2008	3,319 ± 16%	2.8	Geospatial (w/ SCF ^a)
	2017	8,226 ± 11%	4.7	Geospatial
	2021	12,031 ± 33%	6.9	Geospatial
Andreafsky	1995	52 ± 74%	0.0	Gassaway
	1999	524 ± 29%	0.2	Geospatial
	2002	418 ± 22%	0.3	Geospatial
	2012	2,748 ± 19%	1.7	Geospatial
	2012	3,170 ± 24%	2.0	Geospatial (w/ SCF)
	2021	6,852 ± 20%		Geospatial

Table 6. Composition estimates for moose in portions of Unit 18, 2004 – 2020 (Perry 2006, 2008, 2014; Rearden 2015, Oster 2020).

Survey Area	Year	Bulls: 100 Cows	Calves: 100 Cows
Lowest Yukon	2004	-	64
	2005	37	92
	2010	30	69
	2013	40	48
	2016	25	81
	Andreafsky ^a	2002	-
2005		-	42
2010		42	64
2011		40	67
2019		57	41
2020		63	35

Cultural Knowledge and Traditional Practices

The Seward Peninsula region has been inhabited by humans for at least 12,000 years (Magdanz et al. 2007). The Inupiaq, Siberian Yupik, and Central Yup'ik people of the area have a deeply rooted practice of subsistence hunting, fishing, and gathering of wild resources. Until European contact in the early 19th century, many of these groups were semi-nomadic, moving with the seasons based on the availability of wild resources (Ray 1984).

There are two communities located within Unit 22A remainder, Stebbins and Saint Michael. Both are Central Yup'ik communities with strong family connections to the Yup'ik communities of the Yukon Delta and Lower Yukon River. Stebbins and Saint Michael have a mixed economy of wage labor jobs, fishing, and subsistence.

Stebbins is located on the southern shore of Norton Sound, 120 miles southeast of Nome. The Yup'ik name for the village is *Tapraq*, while the name Stebbins first appeared in 1900 (ADCCED 2019a). The community is in the Nome Census Area and encompasses 36 square miles of land and two square miles of water (ADCCED 2019a). Stebbins was incorporated in 1969 and had an estimated population of 645 people in 2017 (ADLWD 2018). The community is accessible by air or water and there is a 10.5-mile road connecting Stebbins with Saint Michael (Magdanz et al. 2007).

Saint Michael is also located on the southern shore of Norton Sound, on the opposite side of Saint Michael Island from Stebbins, 123 miles southeast of Nome. In 2017, Saint Michael had an estimated population of 389 people (ADLWD 2018). A trading post called Redoubt St. Michael was built by the Russian-American Company in 1833 in the area that is now Saint Michael. A U.S. military post was established in 1897. This area also became an important area during the gold rush as a gateway to the Yukon River, with as many as 10,000 people living there during the gold rush (Kawerak 2019).

Large land mammals were not abundant in the Seward Peninsula area during the 1800s. Moose did not start immigrating into the area until the mid-1900s, and while caribou were hunted traditionally, their numbers declined in the mid-1800s (Dau 2000). Reindeer were introduced from Siberia in 1892 under a Federal program initiated by Sheldon Jackson, in part to provide more meat for the Inupiat people in the area (Dau 2000). Historically, people in the Seward Peninsula area hunted a variety of species. As moose moved into the region, opportunistic harvest of the animals grew.

In 2013, the most recent year for which comprehensive subsistence survey data is available for Stebbins, moose comprised 6% of per capita overall wild food harvest. The ADF&G subsistence survey showed that 18.4% of Stebbins households attempted to harvest moose, with 12.6% being successful. Through significant sharing, 65.5% of households used moose (Mikow 2017).

The most recent subsistence survey for Saint Michael was conducted by Kawerak for the 2006 study year. During that period, 20% of households attempted to harvest moose, and 16% were successful. With sharing, 49% of households used moose (Ahmasuk and Trigg 2007).

There is more information available on moose hunting practices in Stebbins than Saint Michael. In 2013, ADF&G Division of Subsistence documented a wide search area for moose, with residents traveling as far as the Yukon River communities of Alakanuk and Emmonak for their hunting (**Figure 2**; Mikow 2017). This may indicate difficulty finding moose locally, as well as reflecting cultural connections with these Yukon River communities. Search areas for moose documented by Mikow (2017) include Federal public lands in the vicinity of both Stebbins and Saint Michael.

Of the moose harvested by Stebbins households, 77% occurs in August and September (spread evenly over the two months). A second period of moose hunting occurs in December and January and

comprises 23% of the community's harvest of the species. However, lack of snow cover due to late freeze-up, low snowfall and thinner ice on rivers, has made access to moose difficult and hazardous for hunters during recent winter hunting seasons (SPRAC 2017). The challenge posed by changing weather conditions was documented in ADF&G interviews conducted in Stebbins in 2014:

“Several key respondents explained that weather in recent years has made it difficult for hunters to take advantage of the winter hunt, a perspective that was echoed in a number of survey comments. Because of late freeze-up and lower snowfall, travel across the landscape has become difficult and at times, treacherous. Scant snow cover hampered travel by snowmachine and thinner ice made crossing rivers dangerous” (Mikow 2017:225).

Difficulty accessing moose in winter may increase pressure on residents to find moose in the fall. Of Stebbins households, 26% have report needing more moose in 2013, the most recent survey year (Mikow 2017).

Caribou are not available enough to mitigate challenges to accessing moose. Of those households reporting under-harvest of large mammals in 2013, 12% indicated that they needed more caribou. At its closest winter range, the Western Arctic herd is still 50 miles away from Stebbins. This contrasts with 20 years ago, when caribou were closer to the community during winter months. Subsistence harvest for moose and caribou has historically been supplemented by use of reindeer, but freezing rain conditions now often result in widespread scattering of the herds (Mikow 2017).

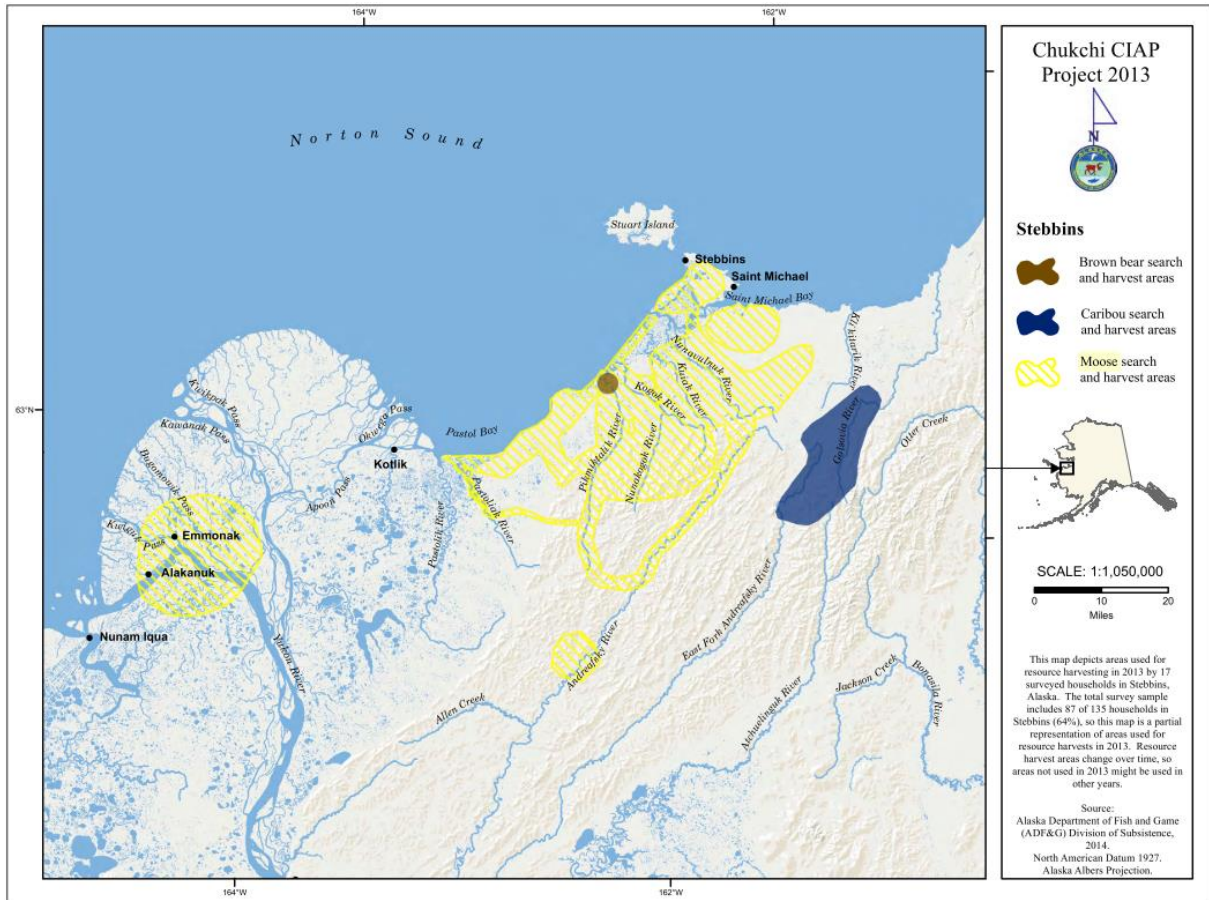


Figure 2. Large land mammal hunting areas, Stebbins, 2013. Moose search area for the year in yellow. Search and harvest areas reflect the practices of those individuals interviewed for a single year and should not be taken as a comprehensive indication of the extent of subsistence search and use areas by the community. (Credit: Mikow 2017.)

Harvest History

Most of the reported harvest within Unit 22A is attributable to local residents, defined here as Federally qualified subsistence users. On average, reported harvest was 9 moose annually for the 2003 – 2020 regulatory years. During this time period, 49% of the reported moose harvest was taken by local residents, while nonlocal residents of Alaska harvested 11%, and nonresidents harvested 35% of the total reported harvest (ADF&G 2021c). For the most recent five years, 2016 – 2020, reported harvest has been higher, averaging 13 moose annually. For those years, local residents took a smaller percentage of the reported harvest (33%) while non-residents took a larger percentage (45%) (ADF&G 2019; OSM 2021a).

Reported moose harvest in Unit 22A is not evenly distributed among the three hunt areas. This observation cannot be explained solely on the basis of human population size and expected harvest pressure. For instance, the Unit 22A Central hunt area is home to 36% of Unit 22A residents, but accounts for 58% of the total reported harvest. In contrast, the remaining two hunt areas (Unit 22A North and Unit 22A remainder) contain 64% of the human population but account for only 40% of the

total moose harvest (ADLWD 2018; ADF&G 2021c; OSM 2021a). One likely explanation for this disparity is the difference among hunt areas in permit requirements and associated reporting rates. Specifically, Unit 22A Central requires a State or Federal registration permit, which includes penalties for non-reporting, while the remaining hunt areas require a harvest ticket that includes no such penalties.

This suggests that reported harvest (**Figure 3**) does not sufficiently represent actual harvest within Unit 22A remainder. This is likely particularly true among local users. However, additional insight into local use can be gained by considering results from household surveys. For instance, in 2005 residents of Stebbins and St. Michael reported harvesting 5 and 2 moose, respectively (ADF&G 2019). However, harvest data obtained from community surveys conducted by Kawerak, the regional Native Association, indicate that 26 moose were harvested by residents of Stebbins and 17 moose were harvested by residents of St. Michael that year (Ahmasuk and Trigg 2007). More recently, in 2013, Stebbins residents reported no moose harvest, but household surveys indicate that 20 moose were taken, primarily in August and September (Mikow 2017). Annual community harvest data is only sporadically available for any given community, but typically exceeds reported harvest for the years it is available. Acknowledging that community harvest data is a snapshot and that trends over time may be more revealing, these community surveys are an important supplement to reported harvest when estimating total harvest among local users.

Reported harvest is likely to be a relatively reliable accounting of harvest among nonresident hunters. Assuming so, nonresident harvest is increasing. For the 2003 – 2008 time period, an average of 2 moose were taken annually by nonresidents, while for the 2015 – 2020 time period, an average of 6 moose were taken annually. In 2018, nonresident harvest was 15 moose, more than double that of any other previous year (ADF&G 2019) (**Figure 3**).

Guide and Transporter Use

Guides are regulated by the Alaska Big Game Commercial Services Board. To operate within a specific guide use area, a guide must be registered in that guide use area and it must be within a game management unit in which they are licensed to conduct hunts. In addition, guides must be authorized to operate within a given area by the public or private landowner (ADCCED 2019b). In Guide Use Area 22-07, which encompasses Unit 22A remainder, there are five active guides (ADCCED 2019b) though the closure currently precludes commercial use of Federal public lands within this area.

The bulk of the Federal public lands within Unit 22A remainder are managed by the Yukon Delta National Wildlife Refuge (Refuge) (**Figure 1**). The Refuge maintains an exclusive guide concession for the Andreafsky portion of the Refuge, which includes southern Unit 22A and adjacent areas in Unit 18. This concession, which is awarded to a single competitor every ten years, is currently held by the proponent of Proposal WP20-42. Prior to 2020, he guided clients on Federal and non-Federal lands adjacent to the closed area and was limited to 8 moose annually. Beginning in 2020, he could guide clients on the Federal public lands within Unit 22A remainder from Sept. 1-30, which corresponds with the State's non-resident moose season. Transporters are also authorized to work in the Andreafsky

area. There is no limit on the number of transporters that can operate in a given area, though there are limits on the number of people they may take in (Rearden 2019, pers. comm.).

BLM, which also manages lands within Unit 22A remainder, requires guides to secure permits to operate on Federal public lands. Unlike the Refuge guide use program, the BLM program does not limit the number of permits issued to guides. Currently, six guides are permitted on BLM lands in Unit 21E, where conditions are reported to be crowded. This has generated interest in operating out of Unit 22A (Seppi 2017 and 2019, pers. comm.). Currently, none of the guides authorized by the Big Game Commercial Services Board to operate in Guide Use Area 21-01 (the area adjacent to Unit 22A remainder) are authorized to work in Guide Use Area 22-07, though all of the five guides already authorized to work in 22-07 could pursue a BLM permit. Under BLM rules, transporters are not required to secure permits prior to operating on public BLM lands (Seppi 2017 and 2019, pers. comm.).

At its April 2019 meeting, the Council expressed concern about the potential impacts of guided moose hunting on moose migration into Unit 22A.

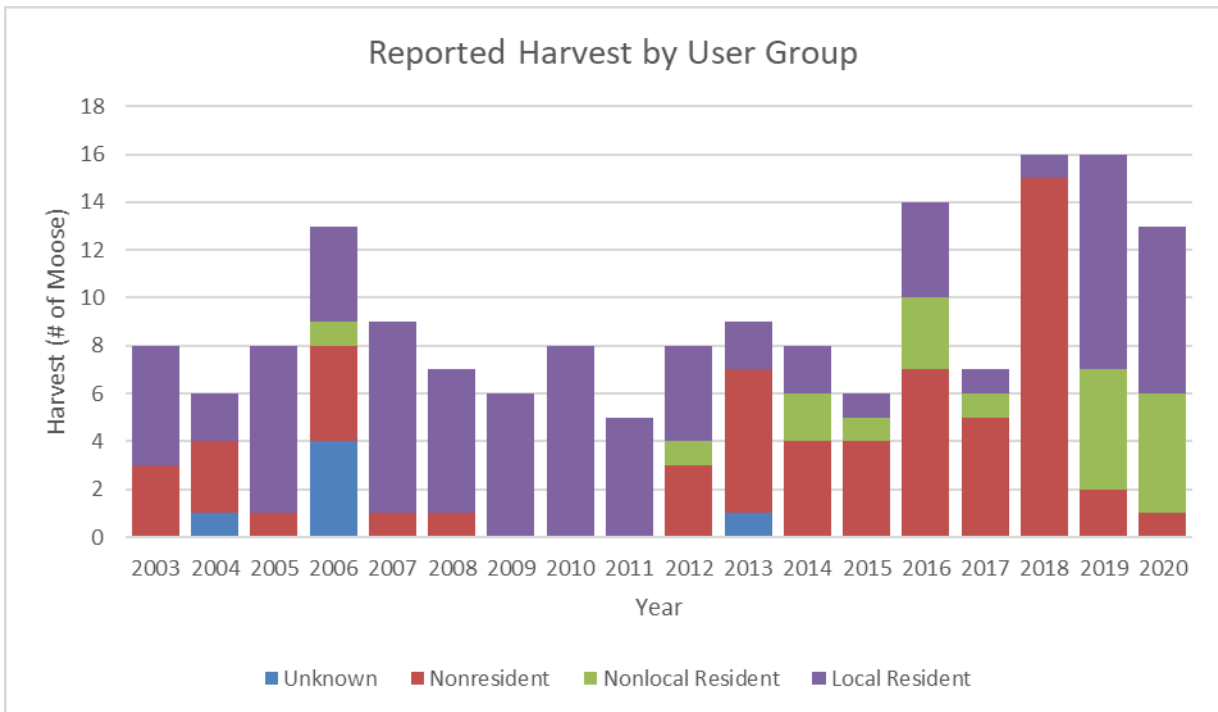


Figure 3. Reported moose harvest by user group in the Unit 22A remainder hunt area, 2003 – 2020 (ADF&G 2019, Dunker 2021, pers. comm.).

Other Alternative Considered

Another alternative to consider would be to fully rescind the closure. While there is no specific population data for Unit 22 remainder, the metrics from adjacent units show the population around this unit is above management objectives. This closure was originally established because of a conservation

concern, which data indicates is no longer a concern. Rescinding the closure may not have any negative effects on local rural residents in the area, as most of the non-Federally qualified harvest occurs from sport hunters utilizing the only authorized guide in the area. Incremental openings have occurred since 2017 without having a negative impact on the moose population. This option was not considered because local subsistence users report having difficulty in harvesting enough moose for their needs.

Effects

If the closure is completely rescinded, non-Federally qualified users would be able to hunt moose on Federal lands in Unit 22A remainder throughout the entirety of the State moose season. Currently, non-Federally qualified users may only hunt moose in this area from Sept. 1-30, which coincides with the State's non-resident season. Over the last 5 years, the average nonlocal harvest is 21% and an average of 45% has been harvested by nonresidents. Therefore, completely rescinding the closure would likely have little impact on total reported harvest.

However, as the rescission of the closure during September only occurred in 2020, more time is needed to assess the impacts of that change on the moose population and subsistence users. Based on biological metrics from adjacent units, the moose population in Unit 22A remainder is likely increasing and can withstand increases in harvest. Indeed, the moose population in Unit 18 is very high and increased cow harvest is recommended to help prevent the population from exceeding carrying capacity. The apparent dispersal of moose from Unit 18 minimizes conservation concerns for the Unit 22A remainder population. Additionally, only one guide with a maximum harvest of eight bull moose is permitted on the national wildlife refuge lands within Unit 22A remainder, which comprise 86% of the Federal lands in that hunt area.

The effects of the 2020 modification to the closure on subsistence users is currently unknown. While this closure was originally enacted for reasons of conservation, subsistence users have reported difficulty in harvesting enough moose to meet their needs. Due to the remoteness of the unit, opening Federal lands in September has the potential to further disperse non-Federally qualified users throughout the area and away from traditional hunting areas, reducing user conflicts. However, the converse is also a possibility due to the potential for more non-Federally qualified users accessing the unit either through transporters or self-supported hunts.

OSM PRELIMINARY CONCLUSION:

- x maintain status quo**
- _ modify or eliminate the closure**

Justification

Metrics from adjacent moose population suggest that the Unit 22A remainder moose population may be growing and can withstand the potential increases in harvest resulting from the 2020 rescission of the closure during September. However, more time is needed to assess the impacts of this regulation change on the population and subsistence users.

Maintaining the status quo until additional information is available is the most conservative approach and provides an assurance that subsistence use continues to be prioritized. In addition, fully rescinding the closure is likely to result in increased pressure from non-Federally qualified users and may result in increased guide and transporter use of the area. Given the temporal and spatial use patterns of local moose hunters, increased commercial traffic may result in increased conflict in this area. This may be exacerbated by the challenges Federally qualified subsistence users face in gaining access to harvestable moose.

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WCR22-11/12 Executive Summary

Closure Location and Species	Unit 22B, west of the Darby Mountains—Moose
Current Regulation	<p>WCR22-11</p> <p><i>Unit 22B, west of the Darby Mountains—1 bull by State registration permit. Quotas and any needed closures will be announced by the Anchorage Field Office Manager of the BLM, in consultation with NPS and ADF&G.</i></p> <p style="text-align: right;"><i>Sept. 1- Sept. 14</i></p> <p><i>Federal public lands are closed to the taking of moose except by federally qualified subsistence users hunting under these regulations.</i></p> <p>WCR22-12</p> <p><i>Unit 22B, west of the Darby Mountains—1 bull by either Federal or State registration permit. Quotas and any needed season closures will be announced by the Anchorage Field Office Manager of the BLM, in consultation with NPS, and ADF&G.</i></p> <p style="text-align: right;"><i>Jan. 1- Jan. 31</i></p> <p><i>Federal public lands are closed to the taking of moose except by residents of White Mountain and Golovin hunting under these regulations.</i></p>
OSM Preliminary Conclusion	Maintain status quo
Seward Peninsula Subsistence Regional Advisory Council Recommendation	
Interagency Staff Committee Comments	
ADF&G Comments	
Written Public Comments	None

FEDERAL WILDLIFE CLOSURE REVIEW
WCR22-11/12

Closure Location: Unit 22B, west of the Darby Mountains—Moose

Current Federal Regulation

Unit 22B – Moose

WCR22-11

Unit 22B, west of the Darby Mountains—1 bull by State registration permit. Quotas and any needed closures will be announced by the Anchorage Field Office Manager of the BLM, in consultation with NPS and ADF&G.

Sept. 1- Sept. 14

Federal public lands are closed to the taking of moose except by federally qualified subsistence users hunting under these regulations.

WCR22-12

Unit 22B, west of the Darby Mountains—1 bull by either Federal or State registration permit. Quotas and any needed season closures will be announced by the Anchorage Field Office Manager of the BLM, in consultation with NPS, and ADF&G.

Jan. 1- Jan. 31

Federal public lands are closed to the taking of moose except by residents of White Mountain and Golovin hunting under these regulations.

Closure Dates: Year-round

Current State Regulation

Unit 22B–Moose

Unit 22B, remainder

Residents: One bull by permit available in person in Brevig Mission, Golovin, Nome, Teller, and White Mountain from July 25-Aug. 25. Harvest quota to be announced. Season will be closed by emergency order when quota is reached.

Sept. 1- 14

Unit 22B–Moose

OR

Residents: One antlered bull by permit available in person in White Mountain and Golovin beginning Dec. 1. Harvest quota to be announced. Season will be closed by emergency order when quota is reached.

Jan. 1-31.

Nonresidents

No open season

Regulatory Year Initiated: 2002

Extent of Federal Public Lands

Unit 22B is comprised of approximately 42% of Federal public lands and consists of 39% Bureau of Land Management (BLM) managed lands, and 3% National Park Service (NPS) managed lands.

Customary and Traditional Use Determination

Rural residents of Unit 22 have a customary and traditional use determination for moose in Unit 22.

Regulatory History

In 2002, the Federal Subsistence Board (Board) adopted Proposal WP02-34 as modified by the Office of Subsistence Management (OSM) to revise the moose season and harvest limit, and to restrict harvest to Federally qualified subsistence users for the conservation of a declining moose population in the affected area of Unit 22B. The Board reduced the season from Aug. 1 – Jan. 31 to Aug. 10 – Sept. 23 and Jan. 1 – 31 in Unit 22B west of the Darby Mountains. The Board adopted a requirement for a State registration permit with a combined State/Federal harvest not to exceed 42 moose for the fall hunt. For the winter hunt, the Board adopted a requirement for either a Federal or State registration permit with a total combined Federal/State harvest for both the August/September and January seasons not to exceed 48 moose.

In 2004, Special Action Requests WSA04-01 and WSA04-02 were submitted to adjust the moose harvest quotas in Unit 22B, west of the Darby Mountains for both the fall and winter seasons. Special Action WSA04-01 was approved by the Board to reduce the combined fall Federal/State harvest quota to 23 moose. Special Action WSA04-02 also was approved by the Board to reduce the total Federal/State harvest quota for both the August/September and January seasons to 30 moose.

In 2005, the Board adopted Proposal WP05-14a which codified the regulatory changes made by Special Action Requests WSA04-01 and WSA04-02. The Board also adopted Proposal WP05-15 to

allow the winter harvest quota to remain flexible and delegate authority for quota announcements and closures to the Anchorage Field Office Manager of the BLM, in consultation with NPS and ADF&G.

In 2006, the Board adopted Proposal WP06-40, which shifted season dates, removed the quota numbers from regulation and delegated authority to the Anchorage Field Office Manager of the BLM, in consultation with NPS and ADF&G to announce any needed closures and quotas.

At their winter 2011 and 2015 meetings, during the previous closure reviews (WCR10-11, WCR10-12, and WCR14-11/12), the Seward Peninsula Subsistence Regional Advisory Council (Council) recommended to retain the closures because of the continued low moose population in Unit 22B.

In both September 2013 and 2014, the State announced emergency orders to close the fall moose season in Unit 22B west of the Darby Mountains. This hunt area was covered under registration permit hunt RM840 with fall harvest quota of 20 bulls.

At the 2020 Board of Game (BOG) meeting, proposal 35 was adopted as amended to change the availability of moose permits in Unit 22. Moose permits are only available in person in Unit 22 from July 25 to August 25. This change applies to moose permits RM843 and RM840.

In August 2020, the Board approved a revised closure policy, which stipulated all closures will be reviewed every four years. The policy also specified 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.

Closure last reviewed: 2014 – WCR14-11/12

Justification for Original Closure (ANILCA Section 815 (3) criteria):

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...

In 2002, the Board adopted Proposal WP02-34 as modified by OSM to revise the moose season and harvest limit, and to restrict harvest to Federally qualified subsistence users for the conservation of a declining moose population in the affected area of Unit 22B. The Board also reduced the season from Aug. 1 – Jan. 31 to Aug. 10 – Sept. 23 and Jan. 1 – 31 in Unit 22B west of the Darby Mountains. The Board approved a requirement for a State registration permit with a combined State/Federal harvest not to exceed 42 moose for the fall hunt. For the winter hunt, the Board approved a requirement for either a Federal or State registration permit with a total combined Federal/State harvest for both the August/September and January seasons not to exceed 48 moose.

Council Recommendation for Original Closure:

The Council unanimously supported Proposal WP02-34 as modified by OSM. The Council believed this proposal would provide sufficient opportunity for Federally qualified subsistence users while taking the most conservative approach to preserving the moose population.

State Recommendation for Original Closure:

The State supported Proposal WP02-34 as modified by OSM to revise the moose season, set a harvest quota, require a registration permit and restrict harvest to Federally qualified subsistence users.

Biological Background

Moose migrated into the Seward Peninsula in the 1930s and by the late 1960s became a resident species due to suitable habitat in Unit 22. Moose populations increased during the 1970s and peaked in the mid-1980s (Gorn 2010). Density independent factors, specifically severe winters, were believed to have caused the population to decrease during the early 1990s (Nelson 1995). Populations within Unit 22 have never recovered to the peak levels of the 1980s. Brown bear predation on calves is considered the main limiting factor on Unit 22 moose populations (Gorn 2010).

State management goals for moose in Unit 22D include (Gorn and Dunker 2014):

- Unit 22 unit-wide: maintain a combined population of 5,100 – 6,800 moose
- Unit 22B West: increase and stabilize the population at 1,000 – 1,200 moose
- Maintain a minimum bull:cow ratio of 30 bulls:100 cows in Units 22A, 22B, 22D, and 22E.

In 2020, ADF&G estimated the total Unit 22 moose population as 6,775 moose, which is within State management objectives. ADF&G also considered the status of the Unit 22B moose population to be stable-increasing, but below State management objectives (ADF&G 2020a). Between 1999 and 2016 the Unit 22B west moose population ranged from 570-798 moose, averaging 690 moose. As survey area size differed slightly between years, density is included for comparison. Over the same time period, moose density in Unit 22B west ranged from 0.24-0.38 moose/mi² (**Figure 1**) (Gorn and Dunker 2014, Dunker 2021, pers. comm.).

Since 2008, the only composition survey conducted in Unit 22B west occurred in 2015. Bull:cow ratios were 41 bulls:100 cows, which is well above State management objectives (Dunker 2021, pers. comm.). Between 1992 and 2008, bull:cow ratios across Unit 22B ranged from 12-58 bulls:100 cows (Gorn and Dunker 2014).

Fall calf:cow ratios of < 20 calves:100 cows, 20-40 calves:100 cows, and > 40 calves:100 cows may indicate declining, stable, and growing moose populations, respectively (Stout 2012). In 2015, the calf:cow ratio was 20 calves:100 cows in Unit 22B west (Dunker 2021, pers. comm.). Between 1992 and 2008, calf:cow ratios across Unit 22B ranged from 0-28 calves:100 cows (Gorn and Dunker 2014). Between 1999 and 2016, the percentage of short-yearlings measured in the Unit 22B moose population

ranged from 6-14%, with the highest percent occurring in 2016 (Gorn and Dunker 2014, Dunker 2021, pers. comm.).

Winter browse habitat is no longer believed to be a major limiting factor for moose at their current population levels. However, brown bear predation on calves is thought to be a significant factor suppressing moose populations in Unit 22 (Gorn 2010). Brown bear densities may have increased over the last decade, and moose recruitment rates have generally been low. A study between 1996 and 1998 on calf survival indicated that 71% of calves died within the first month and up to 75% died by three months (Gorn 2010). Additionally, wolves may be a factor in suppressing the moose population because wolves have become more numerous (SPRAC 2011). Bear and wolf numbers may be higher because many residents do not actively hunt wolves or bears as they have in the past (SPRAC 2011).

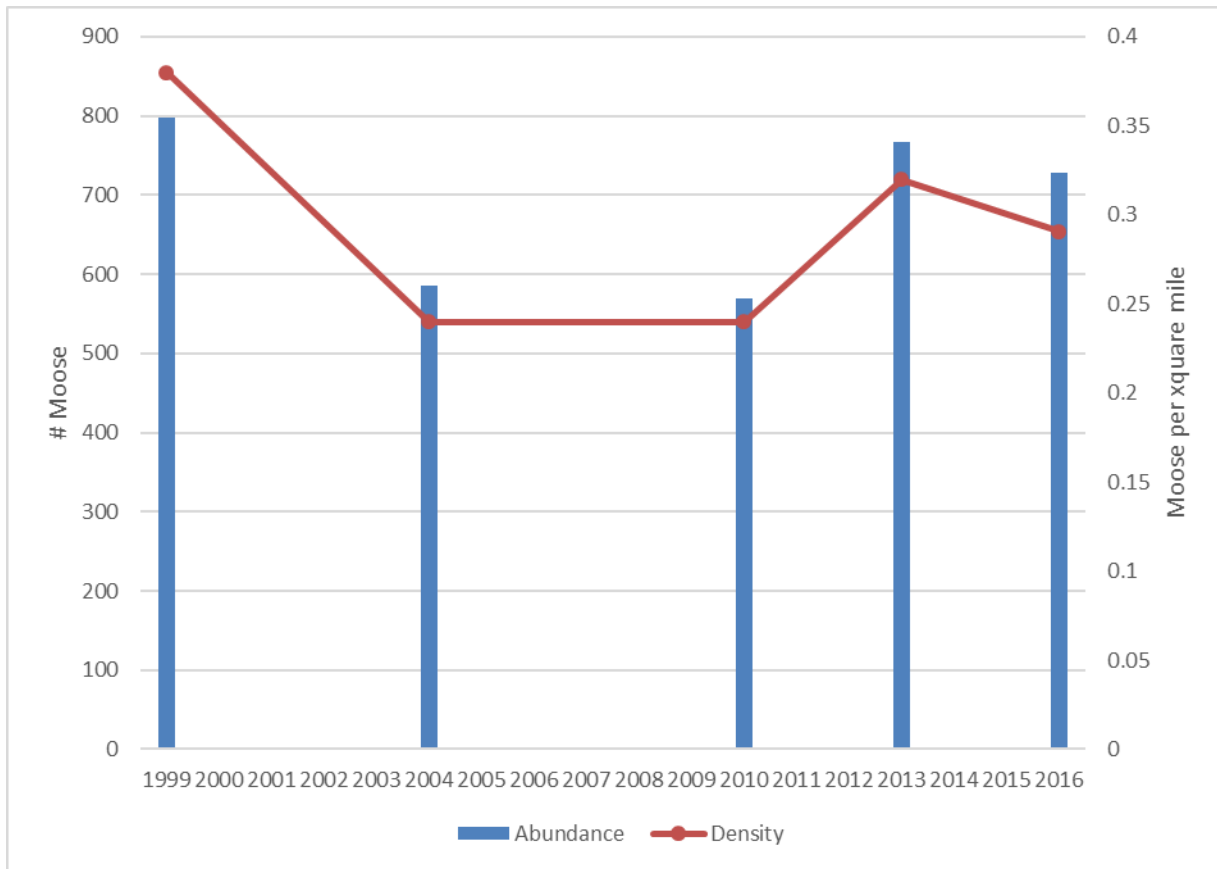


Figure 1. Moose abundance and density in Unit 22B West (Gorn and Dunker 2014, Dunker 2021, pers. comm.).

Harvest History

ADF&G estimates an average of 250-300 moose are harvested from all of Unit 22 each year. The Regulatory Year (RY) 2019 harvestable surplus was 326 moose, and the RY 2018 harvestable surplus was 313 moose (ADF&G 2020a, Dunker 2021, pers. comm.). In Unit 22B specifically, harvest occurs by Alaska residents under State regulations by registration permit RM840 during the September hunt and registration permit RM843 during a January season. No non-resident harvest has occurred in Unit

22B remainder since the nonresident season was eliminated in 2002. Within the closure area, harvest occurs by Federally qualified subsistence users under Federal regulations by State registration permit during the September season and by State (RM843) or Federal (FM2202) registration permit during the January season. All harvest under State regulations has occurred on non-Federal lands since 2002 due to the Federal lands closure. Only one moose was reported harvested by Federal permit (FM2202) in 2001, which was before this closure was enacted (OSM 2021).

Moose harvests in Unit 22B west are managed by quotas. Between 2014 and 2019, total reported moose harvest ranged from 30-38 moose. During the fall RM840 hunt, moose harvest met or exceeded harvest quotas in all years except 2018, when reported harvest was just under quota. The fall RM840 hunt closed early by emergency order every year since 2014, with seasons ranging from 4-9 days (**Table 1**) (ADF&G 2019, 2020a, 2020b, 2021).

Between 2005 and 2013 the reported fall harvest ranged from 14–23 moose and the reported winter harvest ranged from 2–6 moose. Local residents of Unit 22 accounted for 69%–74% of moose harvested between 1994 and 2004 and 78%–90% between 2005 and 2013 (Gorn 2010). Residents of White Mountain and Golovin were the primary users of moose in Unit 22B west of the Darby Mountains and moose are their primary food source (FSB 2002).

Table 1. RM840 (fall) and RM843 (winter) moose harvest and quotas in Unit 22B West (ADF&G 2019, 2020a, 2020b, 2021, Dunker 2021, pers. comm.).

Year	RM840 Quota	RM840 Harvest	RM840 Season Length (days)	RM843 Quota	RM843 Harvest	RM843 Season Length (days)	Total Harvest
2014/15	20	20	8	11	10		30
2015/16	20	22	6	11	10		32
2016/17	23	24	9	10	13		37
2017/18	23	25	7	9	13		38
2018/19	23	21	6	13	16		37
2019/20	23	27	6	7	7	13	34
2020/21	23	26	4	8	8	4	34

Other Alternatives Considered

An alternative for WCR22-12, which limits harvest to residents of White Mountain and Golovin, would be to open the winter hunt to all Federally qualified subsistence users, but maintain a closure to non-Federally qualified users. If all Federally qualified subsistence users from Unit 22 were allowed to harvest in the winter hunt, residents of Golovin and White Mountain may lose a meaningful priority to harvest a moose. The possible increase in hunting pressure and competition from Federally qualified subsistence users within Unit 22 alone would likely reach the quota within several days as all State hunts in Unit 22 currently do. The demand for moose in Unit 22 is high, and if there were another hunt

open to all Federally qualified subsistence users, the demand may exceed availability, and the quota may be reached before residents of White Mountain and Golovin had a chance to harvest what they need.

Effects

If these closures are rescinded, non-Federally qualified users would be able to harvest moose on Federal public lands within Unit 22B, west of the Darby Mountains. The Unit 22B west moose population is below State management objectives, and Federally qualified subsistence users may experience increased competition and decreased harvest success.

As the moose harvest in Unit 22B west is managed by harvest quotas, rescinding or modifying these closures would likely result in a zero to minimal increase in harvest. However, competition with non-Federally and other Federally qualified users on Federal lands could reduce harvest opportunity for residents of White Mountain and Golovin.

OSM PRELIMINARY CONCLUSION:

- x maintain status quo**
- _ modify or eliminate the closure**

Justification

The moose population in the portion of Unit 22B west of the Darby Mountains continues to be below State management objectives and recruitment remains low. Therefore, Federal public lands should remain closed to non-Federally qualified users for the conservation of a healthy population and to allow the continuation of subsistence uses of moose (Section 815(3)) during the fall and winter hunts.

The winter hunt should remain open to the harvest of moose by residents of White Mountain and Golovin only. The Federal closure during the winter hunt will help ensure the continuation of subsistence uses of moose (Section 815(3)) for residents of these communities due to the continued low number of animals available for harvest.

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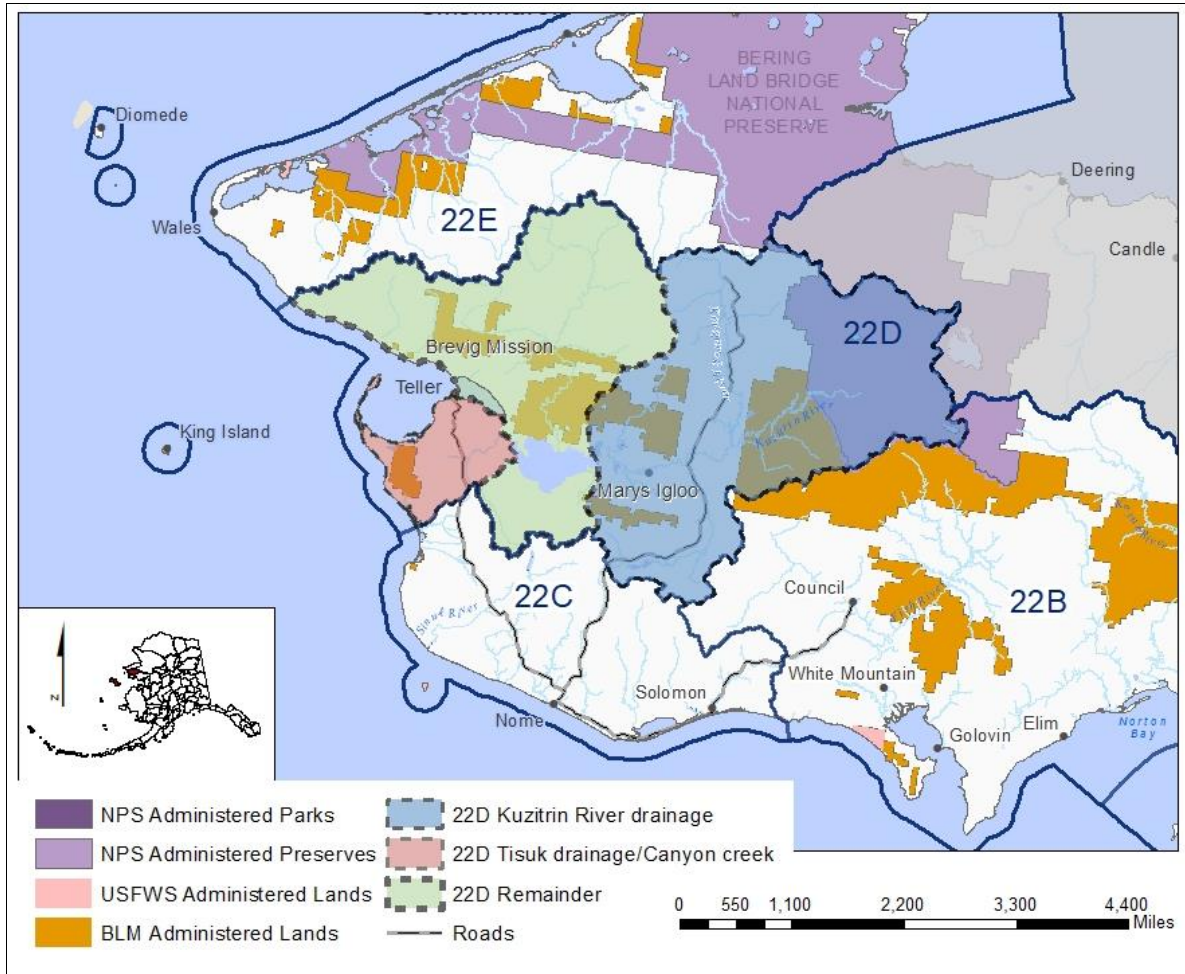
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WCR22-13 Executive Summary

Closure Location and Species	Unit 22D, within the Kougarok, Kuzitrin, and Pilgrim River drainages —Moose
Current Regulation	<p>Unit 22D–Moose</p> <p><i>Unit 22D, that portion within the Kougarok, Kuzitrin, and Pilgrim River drainages—1 bull by State registration permit. Quotas and any needed closures will be announced by the Anchorage Field Office Manager of the BLM, in consultation with NPS and ADF&G.</i></p> <p><i>Federal public lands are closed to the taking of moose except by residents of Units 22D and 22C hunting under these regulations</i></p> <p style="text-align: right;"><i>Sept. 1- Sept. 14</i></p>
OSM Preliminary Conclusion	Maintain status quo
Seward Peninsula Subsistence Regional Advisory Council Recommendation	
Interagency Staff Committee Comments	
ADF&G Comments	
Written Public Comments	None

FEDERAL WILDLIFE CLOSURE REVIEW
WCR22-13

Closure Location: Unit 22D, within the Kougarok, Kuzitrin, and Pilgrim River drainages —Moose (Map 1).



Map 1. Federal moose hunt areas in Unit 22D.

Current Federal Regulation

Unit 22D–Moose

Unit 22D, that portion within the Kougarok, Kuzitrin, and Pilgrim River drainages—1 bull by State registration permit. Quotas and any needed closures will be announced by the Anchorage Field Office Manager of the BLM, in consultation with NPS and ADF&G.

Sep. 1-14

Federal public lands are closed to the taking of moose except by residents of Units 22D and 22C hunting under these regulations

Closure Dates: Year-round

Current State Regulation

Unit 22D–Moose

Unit 22D, Kuzitrin River drainage (includes Kougarok and Pilgrim rivers), and Southwest area located west of Tisuk River drainage, west of the west bank of Canyon Creek beginning at McAdam’s Creek continuing to Tuksuk Channel

Residents: One bull by permit available in person in Brevig Mission, Golovin, Nome, Teller, and White Mountain from July 25-Aug. 25. Harvest quota to be announced. Season will be closed by emergency order when quota is reached.

Sept. 1-14

OR

Residents: One antlered bull by permit available online at <http://hunt.alaska.gov> or in person in Brevig Mission, Golovin, Nome, Teller, and White Mountain (a season may be announced Jan. 1-Jan. 31).

May be announced

Nonresidents

No open season

Regulatory Year Initiated: 2002

Extent of Federal Public Lands

Unit 22D is comprised of approximately 23% of Federal public lands and consists of 12% Bureau of Land Management (BLM) managed lands, and 11% National Park Service (NPS) managed lands.

Customary and Traditional Use Determination

Rural residents of Unit 22 have a customary and traditional use determination for moose in Unit 22.

Regulatory History

The Federal subsistence moose harvest in the portion within the Kuzitrin drainage in Unit 22D was restricted to antlered bulls in 1998 by the Federal Subsistence Board (Board) due to a declining local moose population and heavy hunting pressure. The Board approved a special action request in 2001 (WSA01-09), closing Federal public lands to moose hunting except by Federally qualified subsistence users and modifying the seasons and harvest limits for the 2001 fall and winter seasons (OSM 2001a and 2001b). This special action was prompted, in part, by an Alaska Department of Fish and Game (ADF&G) Emergency Order issued on July 3, 2001 which shortened the upcoming resident and nonresident moose season in the most heavily hunted parts of Units 22B and 22D (Persons 2002).

In 2002, the Board adopted a modification of Proposal WP02-34 to change the Federal subsistence moose hunting regulations in Unit 22 by defining new hunt areas, setting the fall season to Aug. 20 – Sep. 30, setting moose harvest limits to 1 bull by Federal registration permit and establishing the combined Federal/State moose harvest quota of 33 moose for the newly defined areas. In addition, Federal public lands in Unit 22D were closed to the taking of moose except by Federally qualified subsistence users (OSM 2003a). The Board also adopted a modification of Proposal WP02-35 which further restricted moose harvest to rural residents of Unit 22C and 22D based on an ANILCA Section 804 analysis (OSM 2003b).

In 2005, the Board approved Special Action Request WSA05-01 to reduce the hunting season for all of Unit 22 from Aug. 20 – Sep. 30 to Sep. 1 – 14, in response to conservation concerns from harvests exceeding the joint Federal/State harvest quota for the Kuzitrin River drainage in 2003 and 2004 (OSM 2005). Overharvesting occurred in 2003 and 2004 despite efforts by the Board and State to reduce the harvest by closing the seasons early via special actions and emergency orders.

In 2006, the Board adopted Proposal WP06-40 with modification to reduce the moose season from Aug. 20 – Sep. 30 to Sep. 1 – 14. The action on Proposal WP06-40 was consistent with the temporary action taken on Special Action WSA05-01 (OSM 2006). Proposal WP06-40 also removed the quota numbers from the regulations and delegated the authority to announce any needed closures and quotas to the Bureau of Land Management (BLM) Field Office Manager, in consultation with National Park Service (NPS) and ADF&G (OSM 2006).

In 2011 and 2014, the Seward Peninsula Regional Advisory Council (Council) was presented with a review of the closure (WCR10-13 and WCR14-13, respectively) and recommended that the closure be maintained (SPSRAC 2011, OSM 2010).

In August 2020, the Board approved a revised closure policy, which stipulated all closures will be reviewed every four years. The policy also specified 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.

Closure last reviewed: 2014 – WCR14-13

Justification for Original Closure (ANILCA Section 815 (3) criteria):

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 combination of low moose numbers and low recruitment were direct indicators of a continuing conservation concern which warranted protection of this moose population. In response to this concern

and the need for conservative management actions, the Board closed Federal public lands to moose hunting in Units 22D except by rural residents of Unit 22D and Unit 22C (OSM 2003a, 2003b).

Council Recommendation for Original Closure:

The Council supported Proposal WP02-34 to close the moose harvest on Federal public lands in Unit 22B, west of the Darby Mountains, Unit 22D within the Kougarok, Kuzitrin, and Pilgrim river drainages and west of the Tisuk River drainage and Canyon Creek, and Unit 22E to non-Federally qualified users. In addition, harvest quotas were established, and the harvest season reduced from Aug. 1 – Jan. 31 to Aug. 20 – Sep. 30. The Council also supported Proposal WP02-35 which restricted the taking of moose in Unit 22D only to the residents of Unit 22D and Unit 22C. The Council stated that the modified proposals would provide sufficient opportunity for Federally qualified subsistence users while taking the most conservative approach to managing the moose population.

State Recommendation for Original Closure:

The State supported a modification to revise the moose season to Aug. 20 – Sep. 14, set the harvest limit to 1 antlered bull by State registration permit and restrict the harvest to Federally qualified subsistence users. It also supported the conclusions of the Section 804 analysis to give a priority to rural residents of Unit 22D and 22C to hunt moose in the Kougarok, Kuzitrin, and Pilgrim River drainages.

Biological Background

Moose migrated into the Seward Peninsula in the 1930s and by the late 1960s became a resident species due to suitable habitat in Unit 22. Moose populations increased during the 1970s and peaked in the mid-1980s (Gorn 2010). Density independent factors, specifically severe winters, were believed to have caused the population to decrease during the early 1990s (Nelson 1995). Populations within Unit 22 have never recovered to the peak levels of the 1980s. Brown bear predation on calves is considered the main limiting factor on Unit 22 moose populations (Gorn 2010).

State management goals for moose in Unit 22D include (Gorn and Dunker 2014):

- Unit 22 unit-wide: maintain a combined population of 5,100 – 6,800 moose
- Unit 22D: maintain a population of 2,000-2,500 moose
- Maintain a minimum bull:cow ratio of 30 bulls:100 cows in Units 22A, 22B, 22D, and 22E.

In 2020, ADF&G estimated the total Unit 22 moose population as 6,775 moose which is within State management objectives. ADF&G also considered the status of the Unit 22D moose population to be decreasing-stable (ADF&G 2020). Between 1993 and 2020, the moose population in Unit 22D ranged from 1,106 – 1,829 moose with the lowest estimate occurring in 2014. Between 1993 and 2014, for the Kuzitrin drainage area specifically, the moose population ranged from 615 – 1,251 moose with the lowest count occurring in 2014 (**Figure 1**) (ADF&G 2020, Dunker 2021, pers. comm.).

Between 2000 and 2019, bull:cow ratios within the Kuzitrin River survey area ranged from 15-40 bulls:100 cows, averaging 26 bulls:100 cows (**Figure 2**). In recent years (2016-2019), bull:cow ratios

were below State management objectives in 2016 (20 bulls:100 cows) and just above objectives in 2017 and 2019 (32-33 bulls:100 cows, respectively) (Gorn and Dunker 2014, Dunker 2021, pers. comm.).

Fall calf:cow ratios of < 20 calves:100 cows, 20-40 calves:100 cows, and > 40 calves:100 cows may indicate declining, stable, and growing moose populations, respectively (Stout 2012). Between 2000 and 2019, calf:cow ratios within the Kuzitrin River survey area ranged from 9-33 calves:100 cows, averaging 16 calves:100 cows (**Figure 2**). In recent years (2016-2019), calf:cow ratios ranged from 10-14 calves:100 cows. Low recruitment rates such as these may be an indicator that the moose population within the Kuzitrin River Drainage is declining (Gorn and Dunker 2014, Dunker 2021, pers. comm.). From 1993-2020, the percentage of yearlings measured in the spring population surveys within the Kuzitrin drainage ranged from 10-19%, averaging 13% (ADF&G 2020, Dunker 2021 pers. comm.).

There is limited habitat data for Unit 22D. Although winter browse was seen as a limiting factor when moose density/numbers were at their highest during the mid-1980s, current moose populations have been managed based on what winter browse can easily support throughout Unit 22D. Browse is no longer viewed as a limiting factor to moose in this unit and brown bear predation on calves is now seen as the most significant factor influencing moose numbers (Gorn and Dunker 2014).

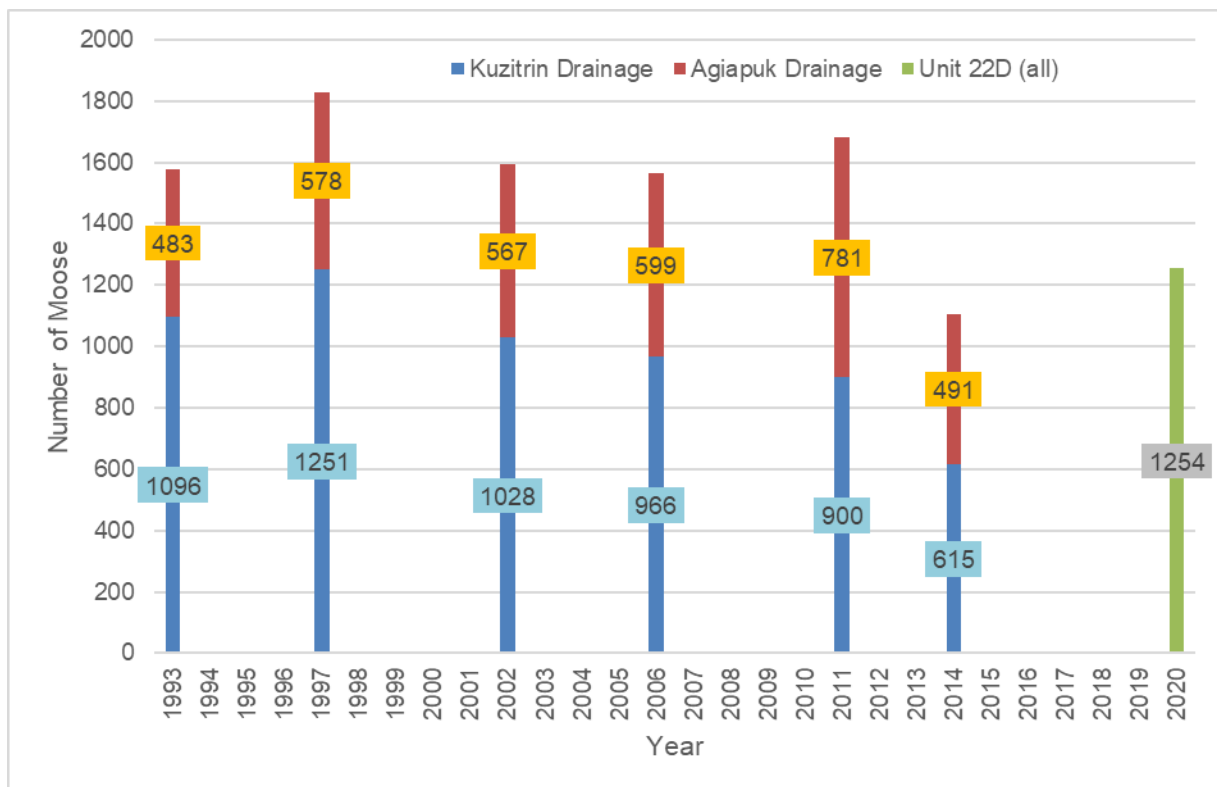


Figure 1. Moose population estimates within Unit 22D (ADF&G 2020, Dunker 2021, pers. comm.).

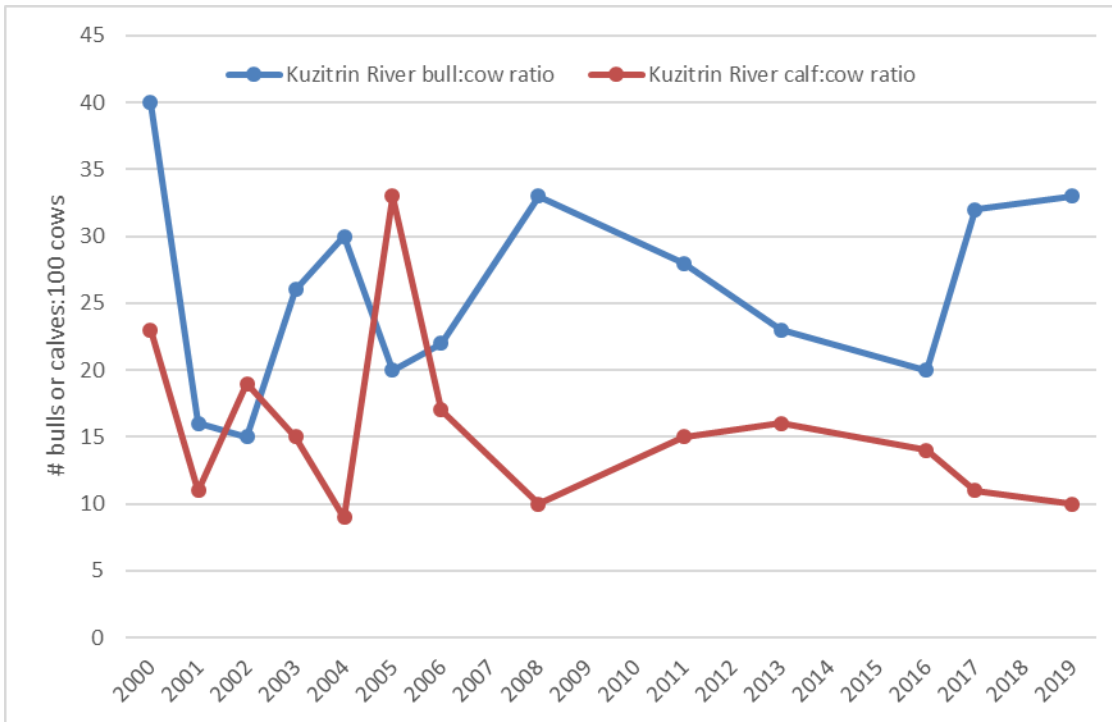


Figure 2. Bull:cow and calf:cow ratios within the Kuzitrin survey area of Unit 22D (Gorn and Dunker 2014, Dunker 2021, pers. comm.).

Harvest History

ADF&G estimates an average of 250-300 moose are harvested from all of Unit 22 each year, and that the 2019 harvestable surplus was 326 moose and the 2018 harvestable surplus was 313 moose (ADF&G 2020, Dunker pers. comm. 2021). In Unit 22D specifically, harvest occurs by Alaska residents under State regulations by registration permit RM840 during the September hunt and registration permit RM849 during a *may be announced* season. No non-resident harvest has occurred in Unit 22D since the nonresident season closed in 2002. Within the closure area, harvest occurs by Federally qualified subsistence users under Federal regulations by State registration permit during the September season and by Federal registration permit (FM2204) during the December season. All harvest under State regulations has occurred on non-Federal lands since 2002 due to the Federal lands closure. No harvest has occurred during the Federal winter season.

Moose harvests in Unit 22D are managed by quotas. Between 2014 and 2019, reported moose harvest in the Kuzitrin River drainage and southwest hunt areas of Unit 22D ranged from 24-46 moose, exceeding harvest quotas in all years (**Table 2**). The hunts were also closed by emergency order in all years except 2016. Since 2017, the seasons have closed in five days or less (ADF&G 2019, 2020, 2021).

Table 1. RM840 moose harvest and quotas in Unit 22D Kuzitrin and Southwest (ADF&G 2019, 2020, 2021).

Year	Quota	Harvest	EO closure	Season Length (days)
2014	37	41	Yes	8
2015	37	46	Yes	10
2016	30	39	No	14
2017	22	36	Yes	5
2018	22	29	Yes	3
2019	22	24	Yes	4
2020	27		Yes	3

Effects

If the closure was rescinded, non-Federally qualified users would be able to harvest moose on Federal public lands within Unit 22D, that portion within the Kougarok, Kuzitrin, and Pilgrim River drainages. As the State hunt is managed by harvest quotas, rescinding the closure would likely result in a zero to minimal increase in harvest. However, lifting the closure would decrease opportunity for Federally qualified subsistence users who would have to compete with non-Federally qualified users for moose harvest on Federal public lands. If the closure was modified to allow all Federally qualified subsistence users to hunt, there may be an increase in competition for rural residents of Unit 22.

OSM PRELIMINARY CONCLUSION:

- maintain status quo
- modify or eliminate the closure

Justification

The Unit 22D moose population is below management objectives, bull:cow ratios are relatively low indicating few surplus bulls available for harvest, and calf:cow ratios are very low indicating a declining population. While harvests under State regulations are managed by a quota, this quota is usually exceeded. Rescinding or modifying the closure would also decrease harvest opportunity for Federally qualified subsistence users by increasing competition for a small, quickly met quota of harvestable moose.

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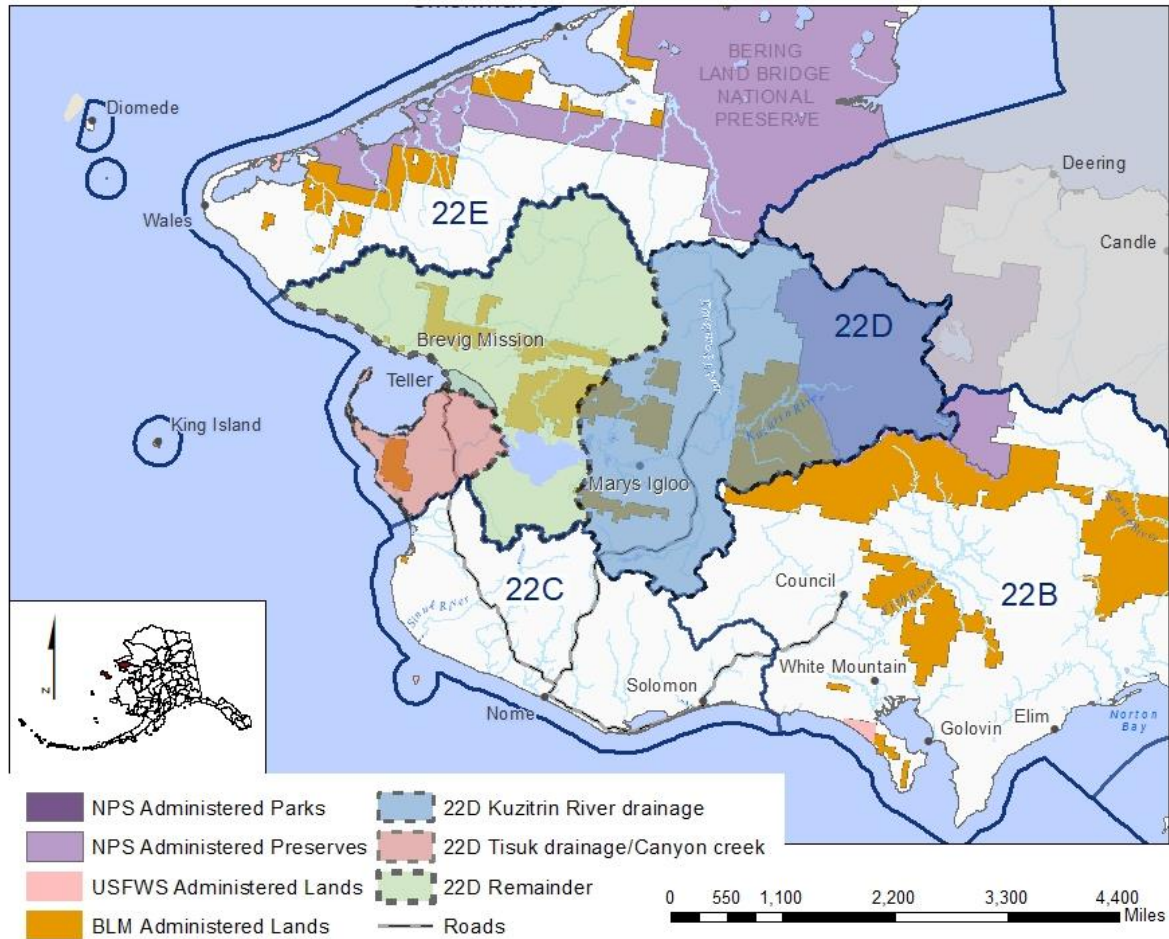
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WCR22-14 Executive Summary

Closure Location and Species	Unit 22D, west of the Tisuk River drainage and Canyon Creek — Moose
Current Regulation	<p>Unit 22D–Moose</p> <p><i>Unit 22D, that portion west of the Tisuk River drainage and Canyon Creek—1 bull by State registration permit. Quotas and any needed closures will be announced by the Anchorage Field Office Manager of the BLM, in consultation with NPS and ADF&G</i> <i>Sep. 1-14</i></p> <p><i>Unit 22D, that portion west of the Tisuk River drainage and Canyon Creek—1 bull by Federal registration permit. Quotas and any needed closures will be announced by the Anchorage Field Office Manager of the BLM, in consultation with NPS and ADF&G.</i> <i>Dec. 1-31</i></p> <p><i>Federal public lands are closed to the taking of moose except by residents of Units 22D and 22C hunting under these regulations</i></p>
OSM Preliminary Conclusion	Maintain status quo
Seward Peninsula Subsistence Regional Advisory Council Recommendation	
Interagency Staff Committee Comments	
ADF&G Comments	
Written Public Comments	None

**FEDERAL WILDLIFE CLOSURE REVIEW
WCR22-14**

Closure Location: Unit 22D, west of the Tisuk River drainage and Canyon Creek —Moose (**Map 1**).



Map 1. Federal moose hunt areas in Unit 22D.

Current Federal Regulation

Unit 22D–Moose

Unit 22D, that portion west of the Tisuk River drainage and Canyon Creek—1 bull Sep. 1-14 by State registration permit. Quotas and any needed closures will be announced by the Anchorage Field Office Manager of the BLM, in consultation with NPS and ADF&G

Unit 22D–Moose

Unit 22D, that portion west of the Tisuk River drainage and Canyon Creek—1 bull Dec. 1-31 by Federal registration permit. Quotas and any needed closures will be announced by the Anchorage Field Office Manager of the BLM, in consultation with NPS and ADF&G.

Federal public lands are closed to the taking of moose except by residents of Units 22D and 22C hunting under these regulations

Closure Dates: Year-round

Current State Regulation

Unit 22D–Moose

Unit 22D, Residents: One bull by permit available in person RM840 Sept. 1-14 Kuzitrin River in Brevig Mission, Golovin, Nome, Teller, and drainage White Mountain from July 25-Aug. 25. Harvest (includes quota to be announced. Season will be closed by Kougarok and emergency order when quota is reached. Pilgrim rivers), and Southwest

OR

area located west of Tisuk River Residents: One antlered bull by permit available RM849 May be drainage, west of online at <http://hunt.alaska.gov> or in person in announced the west bank of Brevig Mission, Golovin, Nome, Teller, and Canyon Creek White Mountain (a season may be announced beginning at Jan. 1-Jan. 31). McAdam’s Creek

continuing to Nonresidents No open season Tuksuk Channel

Regulatory Year Initiated: 2002

Extent of Federal Public Lands

Unit 22D is comprised of approximately 23% of Federal public lands and consists of 12% Bureau of Land Management (BLM) managed lands and 11% National Park Service (NPS) managed lands.

Customary and Traditional Use Determination

Rural residents of Unit 22 have a customary and traditional use determination for moose in Unit 22.

Regulatory History

The Federal subsistence moose harvest in the portion of Unit 22D west of the Tisuk River drainage and Canyon Creek drainage was restricted to antlered bulls in 1998 by the Federal Subsistence Board (Board) due to a declining local moose population and heavy hunting pressure. The Board approved a special action request in 2001 (WSA01-09), closing Federal public lands to moose hunting except by Federally qualified subsistence users and modifying the seasons and harvest limits for the 2001 fall and winter seasons (OSM 2001a and 2001b). This special action was prompted, in part, by an Alaska Department of Fish and Game (ADF&G) Emergency Order issued on July 3, 2001 which shortened the upcoming resident and nonresident moose season in the most heavily hunted parts of Units 22B and 22D (Persons 2002).

In 2002, the Board adopted a modification of Proposal WP02-34 to change the Federal subsistence moose hunting regulations in Unit 22 by defining new hunt areas, setting the fall season to Aug. 20 – Sep. 30, setting moose harvest limits to 1 bull by Federal registration permit and establishing the combined Federal/State moose harvest quota of 33 moose for the newly defined areas. In addition, Federal public lands in Unit 22D were closed to the taking of moose except by Federally qualified subsistence users (OSM 2003a). The Board also adopted a modification of Proposal WP02-35, which further restricted moose harvest to rural residents of Unit 22D and 22C based on an ANILCA Section 804 analysis (OSM 2003b).

In 2005, the Board approved Special Action Request WSA05-01 to reduce the hunting season for all of Unit 22 from Aug. 20 – Sep. 30 to Sep. 1 – 14, in response to conservation concerns from harvests exceeding the joint Federal/State harvest quota for the Kuzitrin River drainage in 2003 and 2004 (OSM 2005). Overharvesting occurred despite efforts by the Board and State to reduce the harvest by closing the seasons early via special actions and emergency orders.

In 2006, the Board adopted Proposal WP06-40 with modification to reduce the moose season from Aug. 20 – Sep. 30 to Sep. 1 – 14. The action on Proposal WP06-40 was consistent with the temporary action taken on Special Action WSA05-01 (OSM 2006). Proposal WP06-40 also removed the quota numbers from the regulations and delegated the authority to announce any needed closures and quotas to the Bureau of Land Management (BLM) Field Office Manager, in consultation with National Park Service (NPS) and ADF&G (OSM 2006).

In 2011 and 2014 the Council was presented with a review of the closure (WCR10-14 and WCR14-14, respectively) and recommended that the closure be maintained (SPSRAC 2011, OSM 2010).

In August 2020, the Board approved a revised closure policy, which stipulated all closures will be reviewed every four years. The policy also specified 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.

Closure last reviewed: 2014 – WCR14-14

Justification for Original Closure (ANILCA Section 815 (3) criteria):

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 combination of low moose numbers and low recruitment were direct indicators of a continuing conservation concern which warranted protection of this moose population. In response to this concern and the need for conservative management actions, the Board closed Federal public lands to moose hunting in Unit 22D except by rural residents of Unit 22D and Unit 22C (OSM 2003a, 2003b).

Council Recommendation for Original Closure:

The Council supported Proposal WP02-34 to close the moose harvest on Federal public lands in Unit 22B, west of the Darby Mountains; Unit 22D within the Kougarok, Kuzitrin and Pilgrim River drainages and west of the Tisuk River drainage and Canyon Creek; and Unit 22E to non-Federally qualified users. In addition, harvest quotas were established, and the harvest season reduced from Aug. 1 – Jan. 31 to Aug. 20 – Sep. 30. The Council also supported Proposal WP02-35 which restricted the taking of moose in Unit 22D only to the residents of Unit 22D and Unit 22C. The Council stated that the modified proposals would provide sufficient opportunity for Federally qualified subsistence users while taking the most conservative approach to managing the moose population.

State Recommendation for Original Closure:

The State supported a modification to revise the moose season to Aug. 20 – Sep. 14, set the harvest limit to 1 antlered bull by State registration permit and restrict the harvest to Federally qualified subsistence users. It also supported the conclusions of the Section 804 analysis to give a priority to rural residents of Unit 22D and 22C to hunt moose in the area west of the Tisuk River drainage and Canyon Creek.

Biological Background

Moose migrated into the Seward Peninsula in the 1930s and by the late 1960s became a resident species due to suitable habitat in Unit 22. Moose populations increased during the 1970s and peaked in the mid-1980s (Gorn 2010). Density independent factors, specifically severe winters, were believed to have caused the population to decrease during the early 1990s (Nelson 1995). Populations within Unit 22 have never recovered to the peak levels of the 1980s. Brown bear predation on calves is considered the main limiting factor on Unit 22 moose populations (Gorn 2010).

State management goals for moose in Unit 22D include (Gorn and Dunker 2014):

- Unit 22 unit-wide: maintain a combined population of 5,100 – 6,800 moose
- Unit 22D: maintain a population of 2,000-2,500 moose
- Maintain a minimum bull:cow ratio of 30 bulls:100 cows in Units 22A, 22B, 22D, and 22E.

In 2020, ADF&G estimated the total Unit 22 moose population as 6,775 moose, which is within State management objectives. ADF&G also considered the status of the Unit 22D moose population to be decreasing-stable (ADF&G 2020). Between 1993 and 2020, the moose population in Unit 22D ranged from 1,106-1,829 moose with the lowest estimate occurring in 2014 (**Figure 1**). While ADF&G does not conduct moose surveys specifically within the closure area, surveys are conducted within the Kuzitrin and Agiapuk River drainages within Unit 22D. The Agiapuk drainage survey area is located in Unit 22D remainder (**Map 1**). Between 1993 and 2014, for the Kuzitrin drainage area specifically, the moose population ranged from 615-1,251 moose with the lowest count occurring in 2014. Over the same time period within the Agiapuk drainage, the moose population ranged from 483-781 moose (**Figure 1**) (ADF&G 2020, Dunker 2021, pers. comm.).

Between 2000 and 2019 bull:cow ratios within the Kuzitrin River survey area ranged from 15-40 bulls:100 cows, averaging 26 bulls:100 cows. Over the same time period, bull:cow ratios within the Agiapuk (Unit 22D remainder) survey area ranged from 18-44 bulls:100 cows, averaging 28 bulls:100 cows (**Figure 2**). In recent years (2016-2019), bull:cow ratios were below State management objectives in all years within the Agiapuk survey area (18-24 bulls:100 cows) and were below objectives within the Kuzitrin survey area in 2016 (20 bulls:100 cows) and just above objectives in 2017 and 2019 (32-33 bulls:100 cows, respectively). (Gorn and Dunker 2014, Dunker 2021, pers. comm.).

Fall calf:cow ratios of < 20 calves:100 cows, 20-40 calves:100 cows and > 40 calves:100 cows may indicate declining, stable, and growing moose populations, respectively (Stout 2012). Between 2000 and 2019, calf:cow ratios within the Kuzitrin River survey area ranged from 9-33 calves:100 cows, averaging 16 calves:100 cows. Over the same time period, calf:cow ratios within the Agiapuk survey area ranged from 6-29 calves:100 cows, averaging 21 calves:100 cows (**Figure 3**). In recent years (2016-2019), calf:cow ratios in the Kuzitrin River survey area ranged from 10-14 calves:100 cows. Low recruitment rates such as these may be an indicator that the moose population within the Kuzitrin River Drainage is declining (Gorn and Dunker 2014, Dunker 2021, pers. comm.). From 1993-2020, the percentage of yearlings measured in the spring population surveys within the Kuzitrin and Agiapuk River drainages averaged 13% and 17%, respectively (ADF&G 2020, Dunker 2020, pers. comm.).

There is limited habitat data for Unit 22D. Although winter browse was seen as a limiting factor when moose density/numbers were at their highest during the mid-1980s, current moose populations have been managed based on what winter browse can easily support throughout Unit 22D. Browse is no longer viewed as a limiting factor to moose in this unit, and brown bear predation on calves is now seen as the most significant factor influencing moose numbers (Gorn and Dunker 2014).

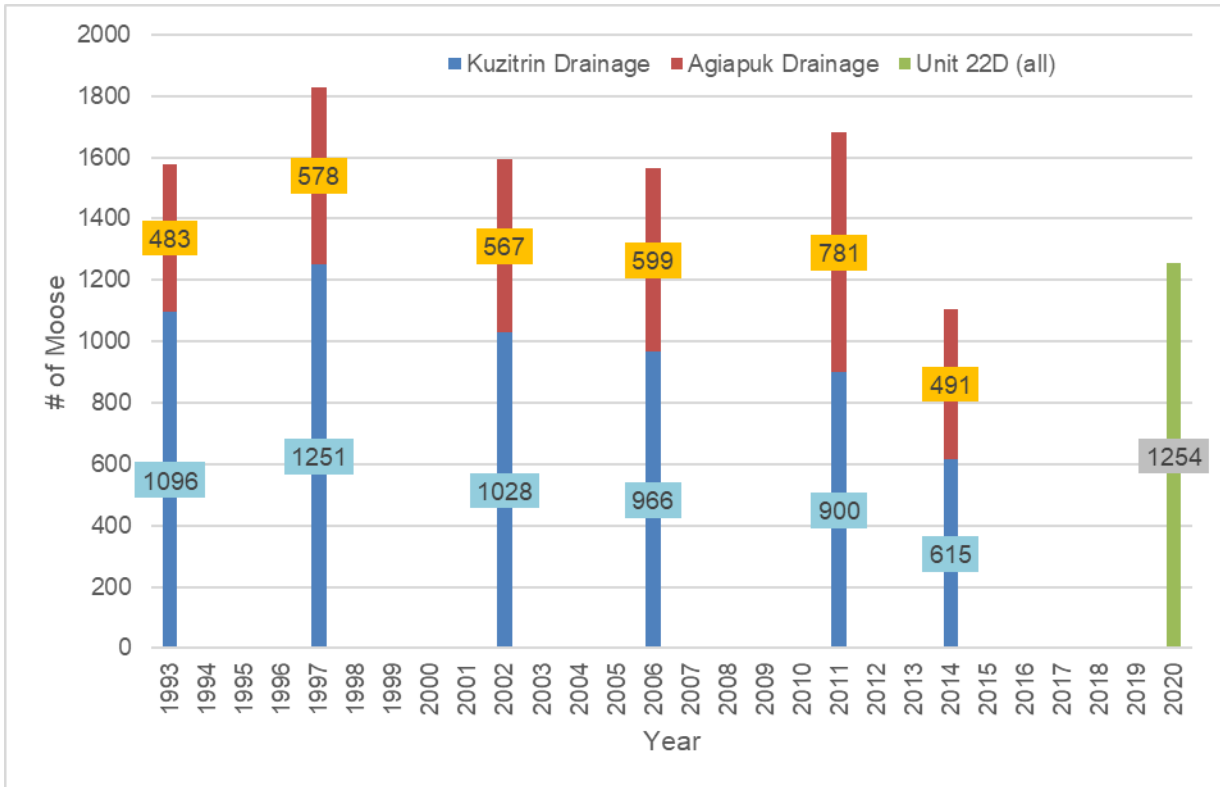


Figure 1. Moose population estimates within Unit 22D (ADF&G 2020, Dunker 2021, pers. comm.).

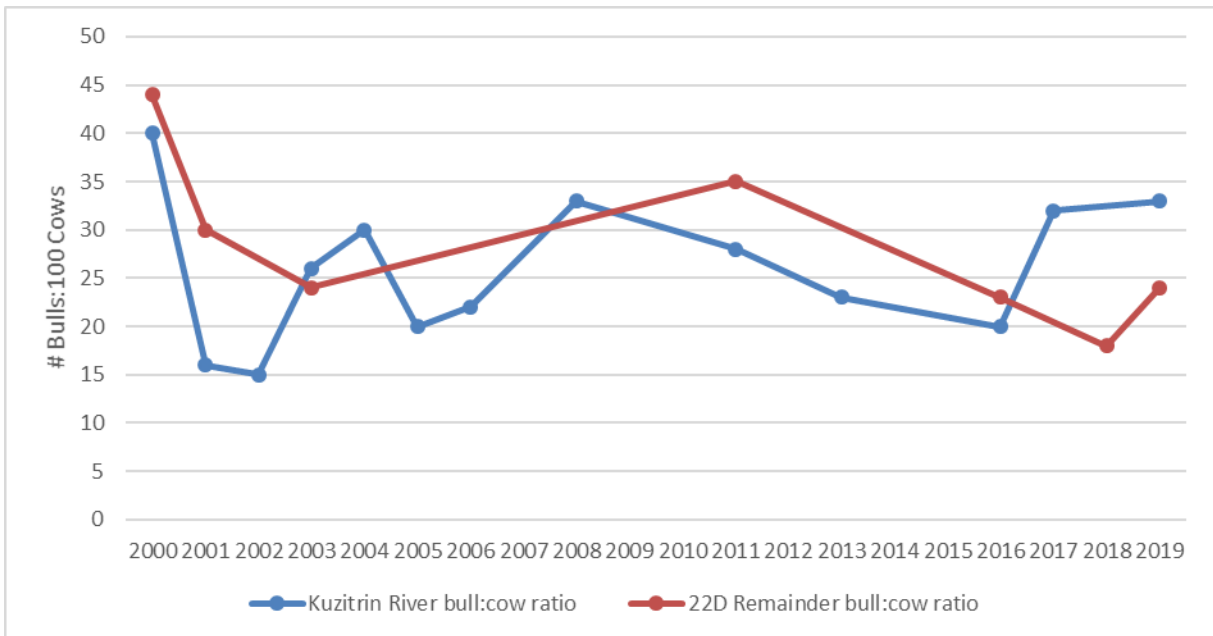


Figure 2. Bull:cow ratios within the Kuzitrin and Unit 22D remainder (Agiapuk) survey area of Unit 22D (Gorn and Dunker 2014, Dunker 2021, pers. comm.).

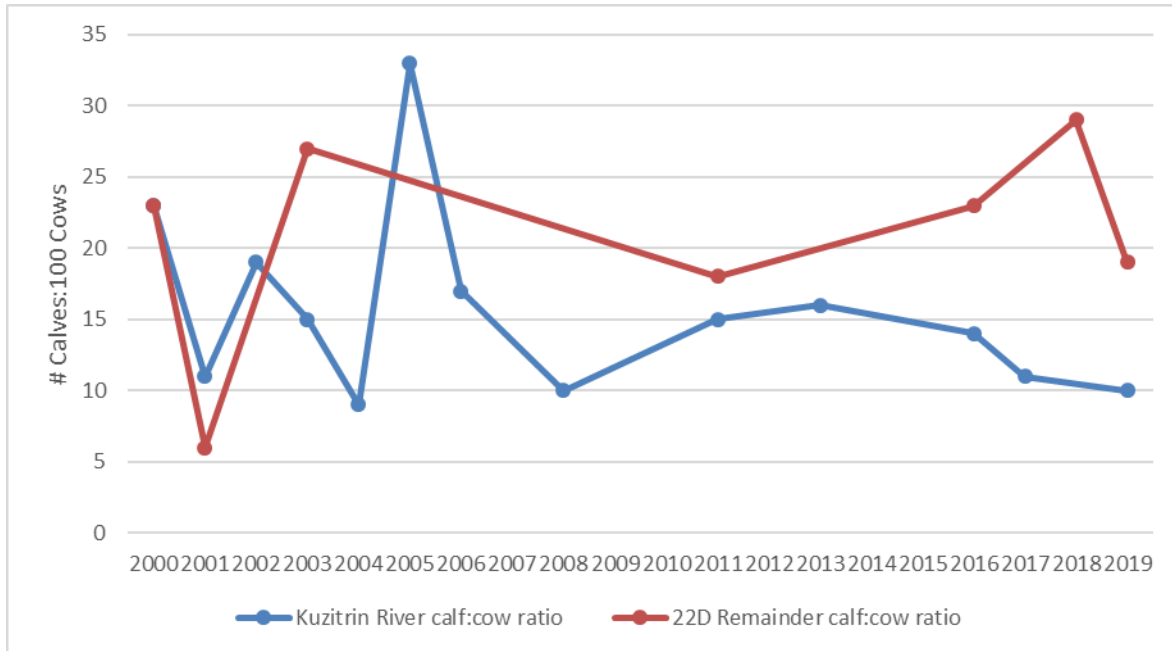


Figure 3. Calf:cow ratios within the Kuzitrin and Unit 22D remainder (Agiapuk) survey area of Unit 22D (Gorn and Dunker 2014, Dunker 2021, pers. comm.).

Harvest History

ADF&G estimates an average of 250-300 moose are harvested from all of Unit 22 each year and that the 2019 harvestable surplus was 326 moose and the 2018 harvestable surplus was 313 moose (ADF&G 2020, Dunker pers. comm. 2021). In Unit 22D specifically, harvest occurs by Alaska residents under State regulations by registration permit RM840 during the September hunt and registration permit RM849 during a *may be announced* season. No non-resident harvest has occurred in Unit 22D since the State non-resident season closed in 2002. Within the closure area, harvest occurs by Federally qualified subsistence users under Federal regulations by State registration permit during the September season and by Federal registration permit (FM2204) during the December season. All harvest under State regulations has occurred on non-Federal lands since 2002 due to the Federal lands closure. No harvest has occurred during the Federal winter season.

Moose harvests in Unit 22D are managed by quotas. Between 2014 and 2019 reported moose harvest in the Kuzitrin River drainage and southwest hunt areas of Unit 22D ranged from 24-46 moose, exceeding harvest quotas in all years (**Table 1**). The hunts were also closed by emergency order in all years except 2016. Since 2017, the seasons have closed in five days or less (ADF&G 2019, 2020, 2021).

Table 1. RM840 moose harvest and quotas in Unit 22D Kuzitrin and Southwest (ADF&G 2019, 2020, 2021).

Year	Quota	Harvest	EO closure	Season Length (days)
2014	37	41	Yes	8
2015	37	46	Yes	10
2016	30	39	No	14
2017	22	36	Yes	5
2018	22	29	Yes	3
2019	22	24	Yes	4
2020	27	32	Yes	3

Effects

If the closure was rescinded, non-Federally qualified users would be able to harvest moose on Federal public lands within Unit 22D, that portion west of the Tisuk River drainage and Canyon Creek. As the State hunt is managed by harvest quotas, rescinding the closure would likely result in zero to minimal increases in harvest. If the closure was modified to allow all Federally qualified subsistence users to harvest moose there may be an increase in competition for a limited resource. However, lifting the closure would decrease opportunity for Federally qualified subsistence users who would have to compete with non-Federally qualified users for moose on Federal public lands.

OSM PRELIMINARY CONCLUSION:

- maintain status quo
- modify or eliminate the closure

Justification

The Unit 22D moose population is below management objectives, bull:cow ratios are relatively low indicating few surplus bulls available for harvest, and calf:cow ratios are very low indicating a declining population. While harvests under State regulations are managed by a quota, this quota is usually exceeded. The Unit 22D moose population within the closure area cannot withstand any increases in harvest. Opening or modifying the closure area would also decrease opportunity for Federally qualified subsistence users as they would have to compete with other Federally qualified subsistence users and non-Federally qualified subsistence users.

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OSM 2003a. Staff analysis WP02–34. Office of Subsistence Management. FWS. Anchorage, AK.

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WCR22-16 Executive Summary

Closure Location and Species	Unit 22E—Moose
Current Regulation	<p>Unit 22E—Moose</p> <p><i>Unit 22E—1 antlered bull. Aug. 1-Mar. 15</i></p> <p><i>Federal public lands are closed to the taking of moose except by Federally qualified subsistence users hunting under these regulations</i></p>
OSM Preliminary Conclusion	Maintain status quo
Seward Peninsula Subsistence Regional Advisory Council Recommendation	
Interagency Staff Committee Comments	
ADF&G Comments	
Written Public Comments	None

FEDERAL WILDLIFE CLOSURE REVIEW
WCR22-16

Closure Location: Unit 22E (Figure 1)—Moose

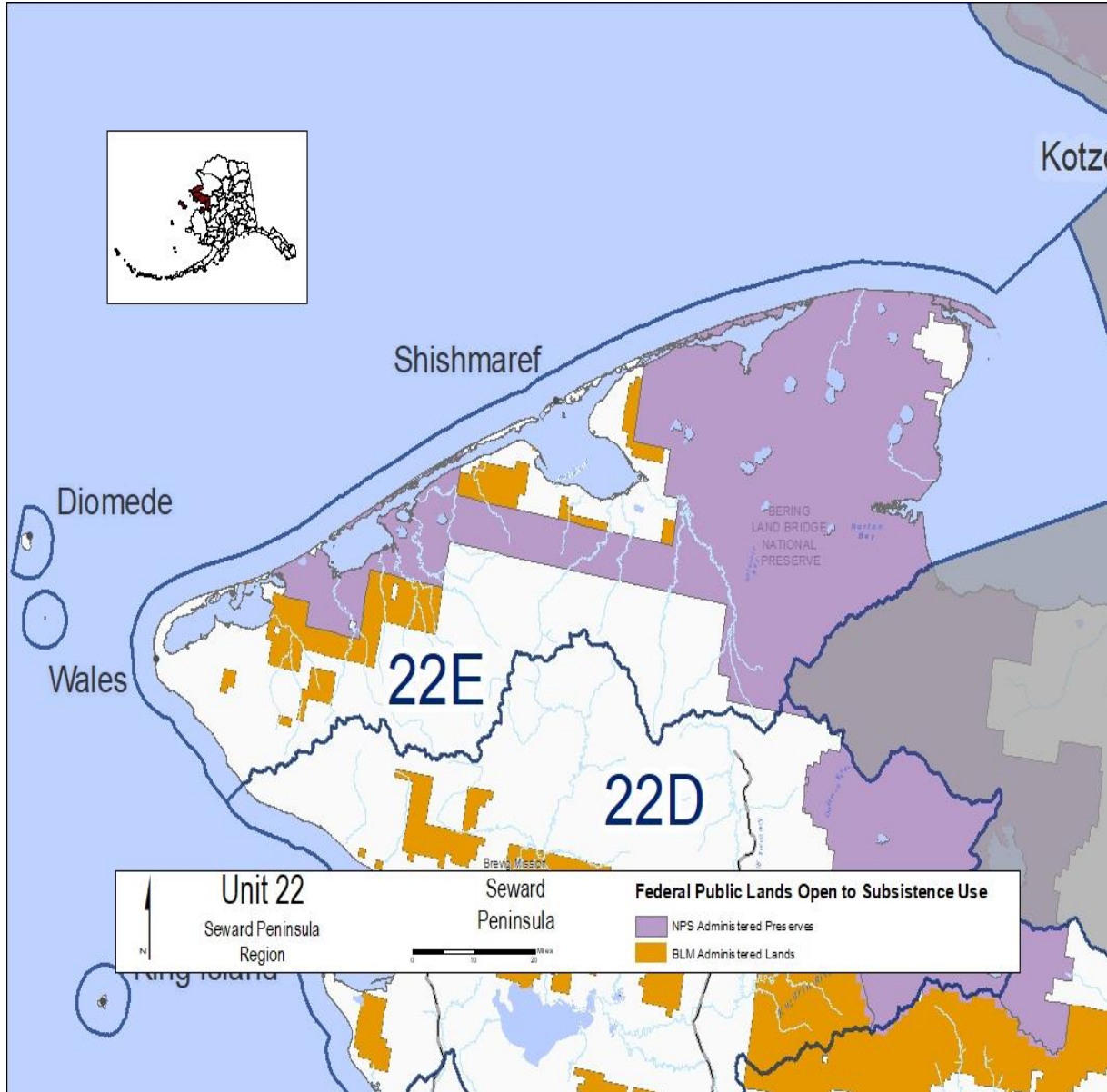


Figure 1. Unit 22E moose hunt area.

Current Federal Regulation

Unit 22E–Moose

Unit 22E—1 antlered bull.

Aug. 1-Mar. 15

Federal public lands are closed to the taking of moose except by Federally qualified subsistence users hunting under these regulations

Closure Dates: Year-round

Current State Regulation

Unit 22E–Moose

Residents: One bull

HT Aug. 1-Dec. 31

OR

Residents: One antlered bull

HT Jan. 1-Mar. 15

Non-residents: One bull with 50-inch antlers or antlers with 4 or more brow tines on at least one side by permit available online at <http://hunt.alaska.gov> or in person in Nome beginning July 24.

RM855 Sept. 1-14.

Harvest quota to be announced. Season closed by emergency order when quota is reached

Regulatory Year Initiated: 2002

Extent of Federal Public Lands

Unit 22E is comprised of approximately 62% Federal public lands and consists of 55% National Park Service (NPS) managed lands and 7% Bureau of Land Management (BLM) managed lands.

Customary and Traditional Use Determination

Rural residents of Unit 22 have a customary and traditional use determination for moose in Unit 22.

Regulatory History

In 2002 the Federal Subsistence Board (Board) adopted Proposal WP02-34. In Unit 22E, this action restricted moose harvest to bulls only, reduced the season from Aug. 1 – Mar. 31 to Aug. 1 – Dec. 30 and closed Federal public lands to the harvest of moose, except by Federally qualified subsistence users. This proposal was brought forth to address conservation concerns for the moose population and to provide for the continuation of subsistence uses of moose on Federal public lands in Unit 22.

The Alaska Board of Game (BOG) also adopted new regulations for moose in Unit 22E in 2002, changing the harvest limit from one moose to one antlered bull, shortening the season by three months and closing the nonresident season.

In the summer of 2003, the Native Village of Wales submitted a Temporary Special Action Request, WSA03-09, to change the harvest season for moose and muskox taken for the *Kingikmiut* Dance Festival from Nov. 15 – Dec. 31 to Jan. 1 – Mar. 15. This Temporary Special Action was approved by the Board in October 2003. The Native Village of Wales subsequently submitted Proposal WP04-69 to permanently change the harvest season for moose and muskox taken for the *Kingikmiut* Dance Festival, as described above. The proposal was adopted by the Board at its May 2004 meeting.

In 2008, the BOG adopted a proposal that established a resident winter season for one antlered bull Jan. 1 – Jan. 31, as well as a nonresident registration hunt with a 10 bull harvest quota. These changes were a result of an increasing moose population as determined by Alaska Department of Fish and Game (ADF&G).

In 2010, the Board adopted Proposal WP10-79 which changed the harvest limit from one bull to one antlered bull and extended the season from Aug. 1 – Dec. 31 to Aug. 1 – Mar. 15 in Unit 22E. These changes were requested in order to provide more harvest opportunity for Federally qualified subsistence users and to eliminate the inadvertent harvest of cow moose.

At its February 2011 meeting the Seward Peninsula Regional Advisory Council (Council) voted unanimously to submit a proposal requesting that the closure of Federal public lands to moose harvest by non-Federally qualified subsistence users in Unit 22E be rescinded, based on the recovery of the population. However, no proposal was submitted during the regulatory cycle.

At its January 2014 meeting, in response to an increasing moose population, the BOG extended the Unit 22E winter resident moose season from Jan. 1 – Jan. 31 to Jan. 1 – Mar. 15.

In 2015, the Council reviewed Wildlife Closure Review WCR14-16 and voted to submit a proposal for the upcoming wildlife regulatory cycle to rescind the closure given the recovery of the Unit 22E moose population.

In 2016, the Board rejected Proposals WP16-46 and WP16-47, both submitted by the Council. Proposal WP16-46 requested rescinding the moose hunting closure to non-Federally qualified users in Unit 22E. While the Unit 22E moose population had increased above State management objectives, the adjacent moose population in Unit 22D had declined. New information suggested the apparent population increase in Unit 22E may have been due to redistribution of moose during low snow years. Therefore, the Council opposed, and the Board rejected Proposal WP16-46. Proposal WP16-47 requested establishing an antlerless moose season from July 15 – Dec. 31 in Unit 22E. The Board rejected Proposal WP16-47 due to conservation concerns as part of the consensus agenda.

In August 2020 the Board approved a revised closure policy, which stipulated all closures will be reviewed every four years. The policy also specified 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.

Closure last reviewed: 2016 – WP16-46

Justification for Original Closure (ANILCA Section 815 (3) criteria):

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...

Federal public lands were closed by the (Board) due to conservation concerns for the declining moose population and to provide Federally qualified subsistence users an opportunity to harvest the limited number of moose on Federal public lands in Unit 22E. The Board adopted Proposal WP02-34 which narrowed the moose season, revised the harvest to bulls only and restricted the harvest to Federally qualified subsistence users within Units 22D and 22E based on conservation concerns for the moose population and to provide for the continuation of subsistence uses of moose on Federal public lands in the units.

Council Recommendation for Original Closure:

The Council supported WP02-34 as modified by OSM, stating that the modified proposal would provide sufficient opportunity for subsistence users while taking the most conservative approach to preserving the moose population.

State Recommendation for Original Closure:

The State supported Proposal WP02-34 as modified by OSM to revise the moose season, harvest limit and restrict harvest to Federally qualified subsistence users in Units 22D and 22E.

Biological Background

Moose migrated into the Seward Peninsula in the 1930s and by the late 1960s became a resident species due to suitable habitat in Unit 22. Moose populations increased during the 1970s and peaked in the mid-1980s (Gorn 2010). Density independent factors, specifically severe winters, were believed to have caused the population to decrease during the early 1990s (Nelson 1995). Populations within Unit 22 have never recovered to the peak levels of the 1980s. Brown bear predation on calves is considered the main limiting factor on Unit 22 moose populations (Gorn 2010).

State management goals for moose in Unit 22E include (Gorn and Dunker 2014, Dunker 2021, pers. comm.):

- Unit 22 unit-wide: maintain a combined population of 5,100 – 6,800 moose
- Unit 22E: increase and stabilize the population at 600-800 moose
- Maintain a minimum bull:cow ratio of 30 bulls:100 cows in Units 22A, 22B, 22D, and 22E.

Between 2001 and 2020, moose populations in Unit 22E ranged from 169-701 moose (Gorn and Dunker 2014, Dunker 2021, pers. comm.) (**Table 1**). The population was well above the State management goals (Gorn 2010) and believed to be stable in 2015, although at very low density (< 0.5 moose/mi²) (Gorn 2015, pers. comm., SPRAC 2015b). However, moose move between Unit 22E and the Agiapuk River Drainage in Unit 22D where moose populations had declined in 2015. Therefore, the apparent population increases in Unit 22E may have been due to redistribution of moose between areas, possibly because of a low snow year (SPRAC 2015b). A moose population survey of Units 22E and 22D was planned in March 2018 but did not occur due to inclement weather (Seppi 2018, pers. comm.). In 2020, ADF&G estimated the total Unit 22 moose population as 6,775 moose, which is within State management objectives. ADF&G also considered the status of the Unit 22E moose population to be increasing/stable in 2020 (ADF&G 2020).

Calf:cow ratios of < 20 calves:100 cows, 20-40 calves:100 cows, and > 40 calves:100 cows may indicate declining, stable, and growing moose populations, respectively (Stout 2012). Calf:cow ratios in 2016 and 2019 suggest the Unit 22E moose population is stable (**Table 2**). Between 2003 and 2020, the percentage of short yearlings (10-month-old moose) ranged from 10-19% and appeared to be stable (Gorn 2014, Dunker 2021, pers. comm.). Between 2014 and 2019, bull:cow ratios exceeded State management objectives, ranging from 33-40 bulls:100 cows (**Table 2**) (Gorn 2014, SPRAC 2015b, Dunker 2021, pers. comm.).

Table 1. Abundance estimates and ratios of short yearlings:100 adults for moose in Unit 22E (Gorn and Dunker 2014, Dunker 2021, pers. comm.).

Year	Estimated Abundance	Short Yearlings:100 adults
2001	169	8
2003	504	23
2006	587	22
2011	669	11
2014	701	16
2020	662	16

Table 2. Bull:cow and calf:cow ratios for moose in Unit 22E (Gorn 2014, Dunker 2021, pers. comm.).

Year	Bulls:100 Cows	Calves:100 cows
2014	40	
2016	38	21
2019	33	16

Harvest History

ADF&G estimates an average of 250-300 moose are harvested from all of Unit 22 each year, and that the harvestable surplus for regulatory year (RY) 2019 was 313 moose and 326 moose for RY20 (ADF&G 2020 & Dunker 2021, pers. comm.). In Unit 22E specifically, resident harvest is difficult to document due to underreporting and because only general harvest tickets are required. In 2017, ADF&G estimated a 6-8% annual harvest rate for moose in Unit 22E, which had an estimated 4-6%

harvestable portion (ADFG 2017). A State registration permit (RM855) is required for non-residents, which results in accurate harvest numbers for nonresidents. All harvest under State regulations has occurred on non-Federal lands since 2002 due to the Federal lands closure.

Reported moose harvest has been relatively low in Unit 22E, averaging 18 moose annually between 2004 and 2019 (**Table 3, Figure 1**). Moose harvest is known to be underreported in the region. Reported harvest and estimates of unreported harvest from household subsistence surveys estimate total harvest to be approximately 8% of the total Unit 22E population (Dunker 2021, pers. comm.). Local residents (Federally qualified subsistence users), defined as those with a customary and traditional use determination, accounted for 47.5% of the reported harvest between 2004 and 2019 (**Table 3**). However, accounting for unreported harvest, local harvest averaged an estimated 86% of the total Unit 22 harvest between 2004 and 2014, while nonlocal resident harvest averaged only 8% for the same time period. Annual nonresident harvest has increased substantially since 2008, when the State opened a nonresident season. Between 2015 and 2019, nonresident harvest averaged 12 moose, accounting for 51% of the reported moose harvest during that time period (ADF&G 2015, 2021).

Table 3. Reported moose harvest in Unit 22E, 2004-2019 (ADF&G 2015, 2021)

Regulatory Year	Local Resident Harvest*	Nonlocal Resident Harvest	Nonresident Harvest (RM855)	Unknown Residency Harvest	Total Harvest
2004	9	0	0	0	9
2005	8	1	0	0	9
2006	4	2	0	1	7
2007	15	2	0	0	17
2008	10	4	1	3	18
2009	11	4	1	5	21
2010	8	4	1	3	14
2011	3	3	2	4	12
2012	5	1	1	7	14
2013	4	2	10	4	20
2014	8	5	7	0	20
2015	7	0	12	2	21
2016	11	2	13	0	26
2017	9	0	15	1	25
2018	12	4	13	0	29
2019	10	1	9	0	20

*Local Residents include all Federally qualified users with C&T (all residents of Unit 22)

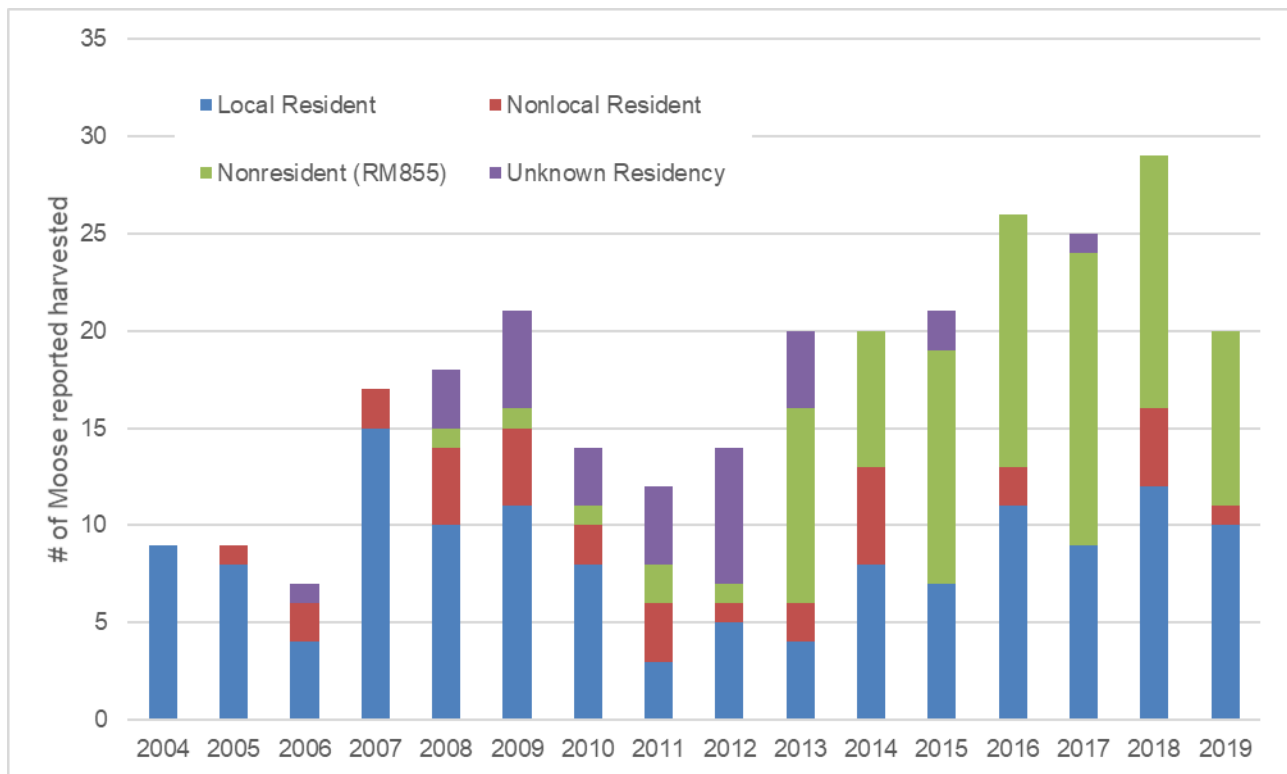


Figure 1. Reported moose harvest in Unit 22E by user group (ADF&G 2015, 2021).

Other Alternatives Considered

Another alternative to consider would be to fully rescind the closure because the moose population has increased substantially since 2002 when the closure was initiated because of conservation concerns. Population estimates and bull:cow ratios for moose in Unit 22E are currently within ADF&G management objectives. Although, concerns exist over rescinding the closure and the effect that may have on Federally qualified subsistence users who may experience more competition from sport hunters in the area.

Effects

If the closure is rescinded, all users could hunt moose on Federal public lands in Unit 22E. This could increase total moose harvest within the subunit, especially non-resident harvest which has substantially increased since 2013. Unit 22E is one of four subunits on the Seward Peninsula that requires only a harvest ticket (with no harvest quota) and not a registration permit (managed by harvest quotas that are met or exceeded each year). If the closure is rescinded, increases in the number of non-Federally qualified subsistence users hunting in Unit 22E may cause user conflicts and increased harvest pressure.

ADF&G considers the Unit 22E moose population to be stable to increasing and the population is within State management objectives of 600-800 moose set in 2017. Bull:cow ratios are also adequate and exceed objectives. However, these metrics may be influenced by redistribution of the Unit 22D moose population, which has been declining.

OSM PRELIMINARY CONCLUSION:

- x maintain status quo**
- _ modify or eliminate the closure**

Justification

The Unit 22E moose population has increased to within State management objectives since 2017. However, in the same timeframe there has been a decline in the moose population in Unit 22D. More investigation into the cause of this shift is needed before decisions affecting populations can be made. Harvest rate may become an issue if the closure is rescinded. If the closure is rescinded, pressure from nonlocal residents may cause user conflicts and increased harvest pressure.

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WP22-41 Executive Summary

General Description	<p>Wildlife Proposal, WP22-41, requests that the Federal in-season manager be delegated authority to open and close seasons, announce harvest limits, and set sex restrictions for caribou in all or portions of Units 9A, 9B, 9C, 17A, 17B, 17C, 18, 19A, and 19B via delegation of authority letter (Appendix 1). <i>Submitted by: Togiak National Wildlife Refuge (NWR) and Yukon Delta NWR</i></p>
Proposed Regulation	<p>Unit 9–Caribou</p> <p><i>Unit 9A—up to 2 caribou by State registration permit</i> <i>Aug. 1 – Mar. 15. Season may be announced</i></p> <p><i>Unit 9B— up to 2 caribou by State registration permit</i> <i>Aug. 1 – Mar. 31. Season may be announced</i></p> <p><i>Unit 9C, that portion within the Alagnak River drainage— up to 2 caribou by State registration permit</i> <i>Aug. 1 – Mar. 15. Season may be announced</i></p> <p><i>Unit 9C, that portion draining into the Naknek River from the north, and Graveyard Creek and Coffee Creek— up to 2 caribou by State registration permit.</i> <i>Aug. 1 – Mar. 15. Season may be announced</i></p> <p>Unit 17–Caribou</p> <p><i>Unit 17A-all drainages west of Right Hand Point— up to 2 caribou by State registration permit</i> <i>Aug. 1 – Mar. 31. Season may be announced</i></p> <p><i>Units 17B and 17C-that portion of 17C east of the Wood River and Wood River Lakes— up to 2 caribou by State registration permit</i> <i>Aug. 1 – Mar. 31. Season may be announced</i></p> <p>Unit 18–Caribou</p> <p><i>Unit 18-that portion to the east and south of the Kuskokwim River— up to 2 caribou by State registration permit</i> <i>Aug. 1 – Mar. 15. Season may be announced</i></p> <p><i>Unit 18, remainder— up to 2 caribou by State registration permit</i> <i>Aug. 1 – Mar. 15.</i></p>

WP22-41 Executive Summary

	<p align="right"><i>Season may be announced</i></p> <p>Unit 19–Caribou</p> <p><i>Units 19A and 19B (excluding rural Alaska residents of Lime Village)— up to 2 caribou by State registration permit</i></p> <p align="right"><i>Aug. 1 – Mar. 15. Season may be announced</i></p>
OSM Preliminary Conclusion	Support
Bristol Bay Subsistence Regional Advisory Council Recommendation	
Yukon-Kuskokwim Delta Subsistence Regional Advisory Council Recommendation	
Western Interior Alaska Subsistence Regional Advisory Council Recommendation	
Seward Peninsula Subsistence Regional Advisory Council Recommendation	
Interagency Staff Committee Comments	
ADF&G Comments	
Written Public Comments	None

DRAFT STAFF ANALYSIS
WP22-41

ISSUES

Wildlife Proposal, WP22-41, submitted by Togiak National Wildlife Refuge (NWR) and Yukon Delta NWR, requests that the Federal in-season manager be delegated authority to open and close seasons, announce harvest limits, and set sex restrictions for caribou in all or portions of Units 9A, 9B, 9C, 17A, 17B, 17C, 18, 19A, and 19B via delegation of authority letter (**Appendix 1**).

DISCUSSION

The proponents state that the summer 2019 and 2020 population estimate for the Mulchatna Caribou Herd (MCH) was 13,500 caribou, which represents a 50% decline from the previous five years and is well below the State’s minimum population objective of 30,000 caribou. The proponents note that 2019/20 Federal and State seasons were shortened due to conservation concerns. The 2020/21 season was also shortened, providing for a bulls-only harvest in August and September, while the rest of the season remained closed. The proponents state that this request will help conserve and recover the MCH and provide the flexibility needed to make harvest management decisions in a timely manner. The proponents recognize that this request will reduce harvest opportunity in the short run, but that conserving the MCH now will increase harvest opportunity in the future. The proponents also state that harvest of other resources such as moose may increase in response to this proposal.

Existing Federal Regulation

Unit 9—Caribou

Unit 9A—2 caribou by State registration permit Aug. 1 – Mar. 15.

Unit 9B—2 caribou by State registration permit Aug. 1 – Mar. 31.

Unit 9C, that portion within the Alagnak River drainage—2 caribou by State registration permit Aug. 1 – Mar. 15.

Unit 9C, that portion draining into the Naknek River from the north, and Graveyard Creek and Coffee Creek—2 caribou by State registration permit. Aug. 1 – Mar. 15.

Unit 17—Caribou

Unit 17A-all drainages west of Right Hand Point—2 caribou by State registration permit Aug. 1 – Mar. 31.

Units 17B and 17C-that portion of 17C east of the Wood River and Wood River Lakes—2 caribou by State registration permit Aug. 1 – Mar. 31.

Unit 18–Caribou

Unit 18—that portion to the east and south of the Kuskokwim River—2 caribou by State registration permit Aug. 1 – Mar. 15.

Unit 18, remainder—2 caribou by State registration permit Aug. 1 – Mar. 15.

Unit 19–Caribou

Units 19A and 19B (excluding rural Alaska residents of Lime Village)—2 caribou by State registration permit Aug. 1 – Mar. 15.

Proposed Federal Regulation

Unit 9–Caribou

Unit 9A—up to 2 caribou by State registration permit Aug. 1 – Mar. 15.
Season may be announced

Unit 9B— up to 2 caribou by State registration permit Aug. 1 – Mar. 31.
Season may be announced

Unit 9C, that portion within the Alagnak River drainage— up to 2 caribou by State registration permit Aug. 1 – Mar. 15.
Season may be announced

Unit 9C, that portion draining into the Naknek River from the north, and Graveyard Creek and Coffee Creek— up to 2 caribou by State registration permit. Aug. 1 – Mar. 15.
Season may be announced

Unit 17–Caribou

Unit 17A—all drainages west of Right Hand Point— up to 2 caribou by State registration permit Aug. 1 – Mar. 31.
Season may be announced

Units 17B and 17C—that portion of 17C east of the Wood River and Wood River Lakes— up to 2 caribou by State registration permit Aug. 1 – Mar. 31.
Season may be announced

Unit 18–Caribou

Unit 18—that portion to the east and south of the Kuskokwim River— up to 2 caribou by State registration permit Aug. 1 – Mar. 15.
Season may be announced

Unit 18, remainder— up to 2 caribou by State registration permit Aug. 1 – Mar. 15.

Season may be announced

Unit 19—Caribou

Units 19A and 19B (excluding rural Alaska residents of Lime Village)— up to 2 caribou by State registration permit Aug. 1 – Mar. 15.
Season may be announced

Existing State Regulation

Note: No seasons are open to nonresidents within the range of the MCH.

Unit 9—Caribou

Residents: Units 9A and 9C, that portion within the Alagnak River drainage —one caribou by permit RC503 *Season not announced*

Residents: Unit 9B— two caribou by permit RC503 *Season not announced*

Residents: Unit 9C, that portion north of the north bank of the Naknek River and south of the Alagnak River drainage— two caribou by permit RC503 *Season not announced*

Unit 17—Caribou

Residents: Units 17A remainder, 17B and 17C east of the east banks of the Wood River, Lake Aleknagik, Agulowak River, Lake Nerka and the Agulukpak River— one caribou by permit RC503 *Season not announced*

Unit 18—Caribou

Residents: One caribou by permit RC503 *Season not announced*

Unit 19—Caribou

Residents: Units 19A and 19B— one caribou by permit RC503 *Season not announced*

Extent of Federal Public Lands

Collectively, Units 9A, 9B, 9C, 17A, 17B, 17C, 18, 19A, and 19B are comprised of 48% Federal public lands and consist of 32% U.S. Fish and Wildlife Service (USFWS) managed lands, 11% National Park Service (NPS) managed lands, and 5% Bureau of Land Management (BLM) managed lands (**Figure 1**). Land status by Unit is as follows.

Unit 9A is comprised of 40% Federal public lands and consists of 39% NPS managed lands and less than 1% each USFWS and BLM managed lands.

Unit 9B is comprised of 34% Federal public lands and consists of 26% NPS managed lands and 8% BLM managed lands

Unit 9C is comprised of 86% Federal public lands and consists of 78% NPS managed lands, 4% BLM managed lands and 4% USFWS managed lands.

Unit 17A is comprised of 87% Federal public lands and consists of 87% USFWS managed lands and less than 1% BLM managed lands.

Unit 17B is comprised of 8% Federal public lands and consists of 6% NPS managed lands, 1% BLM managed lands, and 1% USFWS managed lands.

Unit 17C is comprised of 25% Federal public lands and consists of 15% USFWS managed lands and 10% BLM managed lands.

Unit 18 is comprised of 67% Federal public lands and consists of 64% USFWS managed lands and 3% BLM managed lands.

Unit 19A is comprised of 23% Federal public lands and consists of 21% BLM managed lands and 2% USFWS managed lands.

Unit 19B is comprised of 13% Federal public lands and consists of 11% NPS managed lands, 2% BLM managed lands and less than 1% USFWS managed lands.

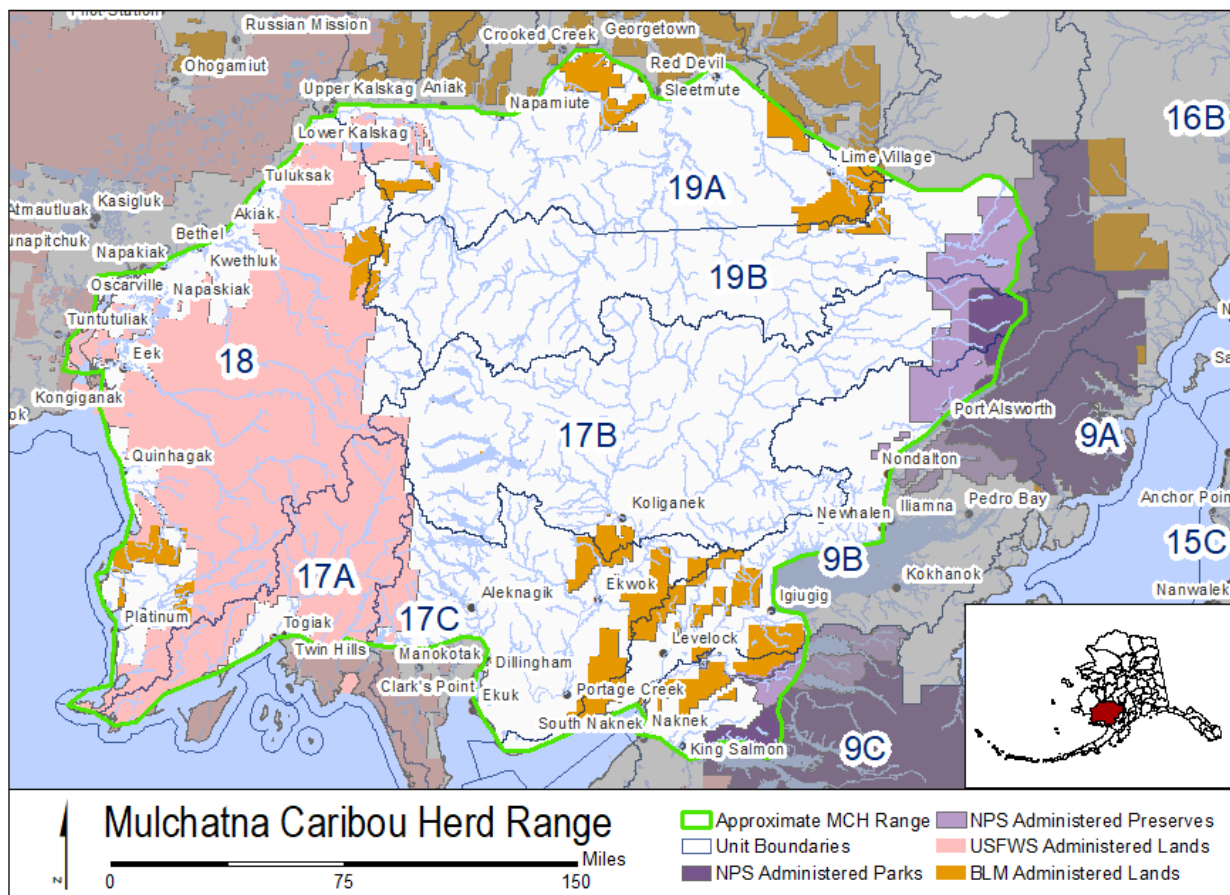


Figure 1. The Mulchatna Caribou Herd range covers ~60,000 square miles, primarily within Units 9B, 9C, 17A, 17B, 17C, 18, 19A and 19B.

Customary and Traditional Use Determinations

Residents of Units 9B, 9C and 17 have a customary and traditional use determination for caribou in Units 9A and Unit 9B.

Residents of Units 9B, 9C, 17, and Egegik have a customary and traditional use determination for caribou in Unit 9C.

Residents of Units 9B, 17, Eek, Goodnews Bay, Lime Village, Napakiak, Platinum, Quinhagak, Stony River, and Tuntutuliak have a customary and traditional use determination for caribou in Unit 17A, that portion west of the Izavieknik River, Upper Togiak Lake, Togiak Lake, and the main course of the Togiak River.

Residents of Units 9B, 17, Akiak, Akiachak, Lime Village, Stony River, and Tuluksak have a customary and traditional use determination for caribou in Unit 17A, that portion north of Togiak Lake that includes Izavieknik River drainages.

Residents of Units 9B, 17, Kwethluk, Lime Village, and Stony River have a customary and traditional use determination for caribou in Units 17A and 17B, those portions north and west of a line beginning from

the Unit 18 boundary at the northwestern end of Nenevok Lake, to the southern point of upper Togiak Lake, and northeast to the northern point of Nuyakuk Lake, northeast to the point where the Unit 17 boundary intersects the Shotgun Hills.

Residents of Units 9B, 17, Akiachak, Akiak, Bethel, Eek, Goodnews Bay, Lime Village, Napakiak, Platinum, Quinhagak, Stony River, Tuluksak, and Tuntutuliak have a customary and traditional use determination for caribou in Unit 17B, that portion of Togiak National Wildlife Refuge within Unit 17B.

Residents of Units 9B, 9C, 9E, 17, Lime Village, and Stony River have a customary and traditional use determination for caribou in Unit 17 remainder.

Residents of Unit 18, Lower Kalskag, Manokotak, Stebbins, St. Michael, Togiak, Twin Hills, and Upper Kalskag have a customary and traditional use determination for caribou in Unit 18.

Residents of Unit 19A and 19B, Unit 18 within the Kuskokwim River drainage upstream from, and including, the Johnson River, and residents of St. Mary's, Marshall, Pilot Station, and Russian Mission have a customary and traditional use determination for caribou in Units 19A and 19B.

Regulatory History

As a result of the dramatic population increase the MCH experienced during the 1990s, harvest regulations were liberalized throughout the range of the herd. By 1997, both State and Federal seasons in portions of Units 9, 17, and 19 extended from fall through spring, with liberal harvest limits and few restrictions. The subsequent population decline, beginning in 2004, resulted in the implementation of more restrictive regulations. Following is a summary of State and Federal regulatory changes since 2006.

At its spring 2006 meeting, the Alaska Board of Game (BOG) implemented more restrictive regulations for both resident and non-resident hunters. For resident hunters, they established an Aug. 1 – Mar. 15 season throughout the range of the herd. Previously, resident seasons ended on March 31 or April 15. The BOG also reduced the harvest limit throughout much of the range to three caribou, with only one caribou allowed Aug. 1 – Sep. 30. Nonresident seasons, which previously extended fall through spring, were reduced to Aug. 1 – Sep. 30.

The BOG further restricted harvest from the MCH in 2007. At that time, they reduced the resident harvest limit to two caribou with the restriction that no more than one bull could be taken and not more than one caribou could be taken Aug. 1 – Jan. 31. In addition, same day airborne harvest was eliminated for Units 9B, 17B, and 17C. The non-resident seasons were reduced to Sep. 1 – 15 at this time.

The Federal Subsistence Board (Board) considered Proposal WP07-23 in 2007, which requested Federal regulations for caribou in Units 9B and 17 be modified to reflect the recent changes in State regulation. Following the recommendation of several Subsistence Regional Advisory Councils (Councils), the Board adopted this proposal with modification to also include Units 18, 19A and 19B. However, this proposal was submitted prior to the BOG's 2007 regulatory changes and the Board's modification did not

accommodate the more recent changes in State regulation. Consequently, Federal regulations were aligned with the State's 2006 regulations rather than the 2007 regulations.

Following continued decline of the MCH, the BOG adopted Proposal 57 in 2009, which eliminated the nonresident caribou season throughout the range of the MCH.

The Board considered three proposals in 2010, all of which proposed further restrictions to harvest of the MCH. Proposal WP10-51 requested that Federal caribou seasons in Units 9A, 9B, 17B, a portion of 17C, 18, 19A, and 19B be changed to Aug. 1–Mar. 31. The Board adopted this proposal with modification to end the seasons on March 15, as recommended by several Councils. Proposal WP10-53 requested that the harvest limit for caribou be set at two caribou throughout the range of the MCH, with the restriction that no more than one bull may be taken and no more than one caribou may be taken Aug. 1 – Jan. 31. The Board adopted this proposal. Proposal WP10-60 requested that the harvest limit for caribou in Unit 18 be reduced from three caribou to two caribou. This proposal was adopted by the Board with modification to include the restriction that no more than one bull may be taken and no more than one caribou may be taken Aug. 1 – Jan. 31, consistent with action taken on WP10-53. The result of the Board's actions in 2010 was that State and Federal regulations for caribou within the range of the MCH were largely aligned.

The BOG initiated intensive management for predator reduction within the range of the MCH in 2011. At their spring 2011 meeting, they established a predation management area in Units 9B, 17B, and 17C. At their spring 2012 meeting, they added Units 19A and 19C to the predation management area.

In 2012, the Board considered Proposal WP12-42, which requested that, in Unit 18, the harvest limit be reduced from two caribou to one caribou and the season be reduced from Aug. 1 – Mar. 15 to Aug. 1 – Sep. 3 and Dec. 20 – last day of February. The Board adopted the proposal with modification, which resulted in the establishment of two separate hunt areas in Unit 18. For the portion of Unit 18 east and south of the Kuskokwim River, the season was reduced as proposed, while the harvest limit remained at two caribou, with the restriction that not more than one caribou may be taken Aug. 1 – Sep. 30 or Dec. 20 – Jan. 31. For the remainder of Unit 18, there were no changes to regulations.

Shortly after the Board's decision on WP12-42, it received two Special Action Requests to make similar changes for the remainder of the 2011/12 regulatory year. WSA11-10 requested that the caribou season in Unit 18 be shortened by 2 weeks, to end on February 29, rather than March 15. WSA11-11 requested that Federal public lands in the portion of Unit 18 south and east of the Kuskokwim River be closed to the harvest of caribou by all users beginning March 1. The Board rejected both requests on the grounds that it would be detrimental to subsistence users and that there was insufficient evidence that the situation required immediate action.

In February 2013, the BOG adopted Proposal 45A, which required use of a registration permit (RC503) in Units 9A, 9B, portions of 9C, 17, 18, 19A, and 19B. Previously, MCH harvest was allowed with just a harvest ticket. These changes were aimed at improving harvest management and assessment of the MCH's response to the ongoing intensive management program.

The Board considered two Special Action Requests in 2013. The first, Temporary Special Action WSA13-02, requested alignment of Federal permit requirements and season dates with the recently modified State regulations. As a result of the Board's approval of this request, Federally qualified subsistence users hunting under Federal regulations were required to obtain a State registration permit in Units 9A, 9B, 9C, 17A, 17B, 17C, 18, 19A, and 19B. The Board's action also shortened the to-be-announced season in Units 17A remainder and 17C remainder from Aug. 1–Mar. 31 to Aug. 1–Mar. 15. These changes were in effect for the remainder of the 2013/14 regulatory year. The second request, Temporary Special Action WSA13-03, requested the closure of Federal public lands in Units 9A, 9B, 9C, 17A, 17B, 17C, 18, 19A, and 19B to the harvest of caribou, except by Federally qualified subsistence users. The Board rejected WSA13-03 on the grounds that the MCH population was within State management objectives, and composition metrics were showing improvement.

In 2014, the Board adopted Proposal WP14-22 with modification, which resulted in the requirement of a State registration permit for Federally qualified subsistence users hunting under Federal regulations in Units 9A, 9B, 9C, 17A, 17B, 17C, 18, 19A, and 19B. It also resulted in a shortening of the to-be-announced season in Units 17A remainder and 17C remainder, from Aug. 1 – Mar. 31 to Aug. 1 – Mar. 15. Finally, it delegated authority to the Togiak National Wildlife Refuge Manager to take specific in-season management actions in portions of Units 17A and 17C. This included the authority to open and close seasons, establish harvest limits and restrictions, and identify hunt areas. These changes were meant to align Federal and State regulations across the range of the MCH, while providing improved harvest reporting.

In February 2015, the BOG adopted Proposal 47 with an amendment to accommodate the request made in Proposal 48. As a result of this action, caribou seasons in Units 9B and 17 were changed from Aug. 1 – Mar. 15 to Aug. 1 – Mar. 31. This change was made to accommodate hunters who reported that travel conditions often prohibited caribou hunting after the last day of March.

In March 2016, BOG adopted Proposal 134, which resulted in liberalization of the harvest restrictions for caribou harvested within the range of the MCH. Specifically, the harvest limit remained at two caribou, but the restrictions that no more than one bull may be taken and no more than one caribou may be taken from Aug. 1 – Jan. 31 were eliminated. By 2016, the bull:cow ratio had reached the management threshold and conservation of bulls had become less critical compared to 2007, when the restrictions were implemented. Fewer restrictions also resulted in a less complicated regulatory structure and were not expected to result in unsustainable levels of harvest.

The same spring, the Board considered Proposal WP16-29/30, which requested that caribou seasons in Unit 9B and portions of Unit 17 be extended from Aug. 1 – Mar. 15 to Aug. 1 – Mar. 31. This proposal was intended to provide additional subsistence opportunity and to align Federal and State regulations for caribou hunting within the range of the MCH. The Board adopted this proposal with modification to move in-season management language from unit-specific regulations to a delegation of authority letter. However, this proposal was submitted prior to the BOG's 2016 regulatory changes and the Board's modification did not accommodate the recent changes to State regulation. Consequently, Federal regulations were aligned with the State's 2016/17 regulations rather than the 2017/18 regulations.

In February 2018, the BOG adopted Proposal 127. As a result, the portion of Unit 9C north of the Naknek River and south of the Alagnak River drainage became part of the MCH RC503 permit area, rather than part of the Northern Alaska Peninsula Caribou Herd (NAPCH) TC505 permit area. The BOG's action also established an Aug. 1 – Mar. 31 resident season in the hunt area north of the Naknek River. This action brought State harvest regulations into line with the current distribution of the MCH and NAPCH caribou herds.

In April 2018, the Board considered Proposal WP18-21, which responded to the 2016 and 2018 changes made in State regulation. Specifically, WP18-21 requested that the harvest limit for the MCH be changed to two caribou with no additional restrictions in portions of Units 9, 17 and 19, and that the caribou season in Unit 9C north of the Naknek River be changed from a may-be-announced season to an Aug. 1 – Mar. 15 season with a harvest limit of two caribou. The Board adopted WP18-21 with modification to create a new hunt area, removing the portion of Unit 9C that drains into the Naknek River from the north and Graveyard Creek and Coffee Creek from Unit 9C remainder. This action brought Federal harvest regulations into line with the current distribution of the MCH and NAPCH caribou herds and also aligned the harvest limit throughout the range of the MCH. However, the Board's action did not address the Federal public lands closure within the new hunt area. Originally implemented for the conservation of the NAPCH, this closure is now the only Federal public lands closure within the range of the MCH.

The Board also considered Proposal WP18-31 in April 2018, which requested that the MCH season in Unit 18 be shortened from Aug. 1 – Mar. 15 to Aug. 1 – Feb. 28, due to an observed scarcity of caribou. The Board rejected this proposal on the grounds that it would have a negligible effect on harvest or on the conservation status of the population, given that the State season would continue to be open until March 15. The Board noted that the regulatory complexity this change would introduce was unnecessary in the absence of a conservation benefit.

In August 2019, the Alaska Department of Fish and Game (ADF&G) issued emergency order 04-16-19, which decreased the harvest limit of the RC503 caribou registration permit hunt from two caribou to one caribou for the 2019/20 regulatory year. The RC503 permit targets the MCH in Units 9A, 9B, 9C, 17A, 17B, 17C, 18, 19A, and 19B (range of the MCH). ADF&G issued this emergency order to conserve the MCH due to recent survey data indicating the MCH population is 13,500 caribou, which is well below the minimum State objective of 30,000 caribou.

In November 2019, the Board approved Special Action Request WSA19-07 with modification to decrease the harvest limit for Mulchatna caribou from two to one caribou across the range of the MCH for the 2019/20 regulatory year. The modification included closing Units 18, 19A and 19B to caribou hunting except by Federally qualified subsistence users, with a harvest limit of one bull caribou and delegating authority to the Togiak NWR Manager to open and close seasons throughout the range of the herd and to set sex restrictions in Units 9A, 9B, 9C, 17A, 17B and 17C for the 2019/20 regulatory year. The Board approved the request due to serious conservation concerns for the MCH and support from the affected Regional Advisory Councils and local users.

The Togiak NWR Manager exercised his delegated authority to close caribou hunting on Federal public lands across the range of the MCH on December 31, 2019 for the remainder of the season. As of December 16, 2019, 79 caribou had been reported harvested, with an additional seven caribou known to be harvested but not reported. Agency staff determined no harvestable surplus existed that would allow for herd growth and closed the season to promote herd recovery.

In January 2020, ADF&G issued emergency order 04-02-20, which closed the RC503 caribou registration permit hunt on January 31, 2020. ADF&G issued this emergency order because of MCH population declines. Both ADF&G and USFWS staff conducted extensive outreach efforts to notify communities of the caribou hunting closure (BBRAC 2020, WIRAC 2020).

In April 2020, the Board considered Wildlife Closure Review WCR20-04/06, which reviewed caribou hunting closures in Units 9C and 9E. The Board voted to modify the closure, rescinding the closure in the portion of Unit 9C that drains into the Naknek River from the north, and Graveyard Creek and Coffee Creek (Unit 9C Naknek), while maintaining the closures in the other hunt areas in concurrence with the Bristol Bay Council's recommendation. The closure in Unit 9C Naknek to caribou hunting except by residents of Unit 9C and Egegik had been the only closure in regulation within the range of the MCH. The closure was a vestige of the Board's action on Proposal WP18-21, which shifted the regulatory emphasis within Unit 9C Naknek from the NAPCH to the MCH, to reflect current distribution patterns of these two herds. However, during its deliberation of Proposal WP18-21, the Board did not address the Federal public lands closure, which had been originally implemented for the conservation of the NAPCH.

In July 2020, the Board approved Special Action Request WSA20-04 with modification to delegate authority to the Togiak NWR manager to open/close seasons, announce harvest limits, and set sex restrictions across the range of the MCH for the 2020-2022 regulatory cycle (similar to this proposal). The Board approved the request because of conservation concerns for the MCH due to substantial population declines, because delegating authority to an in-season manager provided the management flexibility needed to respond quickly to changing conditions, and because of support from the affected Regional Advisory Councils and local users.

In July 2020, ADF&G issued emergency order 04-04-20, announcing a bulls-only hunt across the range of the MCH (RC503) in Units 9A, 9B, 9C, 17A, 17B, 17C, 18, 19A, and 19B from Aug. 1-Sept. 20, 2020. The rest of the 2020/21 season remained closed. Later that month, the Togiak NWR Manager exercised his delegated authority to announce an identical Federal hunt for 2020/21. The Togiak NWR manager and ADF&G determined that a limited bulls-only hunt would provide some harvest opportunity without compromising herd recovery, but that additional harvest, especially of cows, needed to be avoided to allow for herd growth.

Current Events

The BOG received several proposals concerning the MCH during the Central and Southwest Region call for proposals in 2020. They will consider proposed changes in Units 9 and 17 in January of 2022 (re-scheduled meeting from January 2021 due to the COVID-19 pandemic). Proposed changes for Unit 18

and 19 will be addressed at Western Arctic/Western Region and Interior and Eastern Arctic Region meetings, respectively.

Proposal 19, submitted by Togiak NWR requests establishing new population and harvest objectives for the MCH, following completion of a habitat assessment to determine carrying capacity. Proposal 20, submitted by ADF&G, requests establishing a Tier II subsistence hunting season and harvest limit for the MCH due to low population estimates and harvestable surpluses. Proposal 20 would also close the season during rut to mitigate disruptions to breeding and standardize the season across the range of the MCH to reduce hunter confusion and encourage reporting. Proposal 21, submitted by ADF&G, requests establishing a second predation control area for MCH on Federal lands in Units 17 and 18 to reduce wolf predation and promote herd recovery.

Biological Background

The MCH has experienced dramatic changes in population size and distribution in the past 40 years. In the early 1980s, the population was estimated to include approximately 20,000 caribou. Its winter range included the north and west side of Iliamna Lake north of the Kvichak River. By the mid-1990s, the herd had grown to its peak size of approximately 200,000 caribou and absorbed the smaller Kilbuck caribou herd. The MCH increasingly began wintering in southern Unit 18 and southwestern Unit 19B. Population growth during this time was attributed to mild winters, movement into previously unexploited range, and relatively low predation and harvest rates.

Currently, the MCH range covers ~60,000 square miles, primarily within Units 9B, 9C, 17A, 17B, 17C, 18, 19A and 19B (**Figure 1**). The herd does not move seasonally as a single distinct group. Rather, caribou move from calving areas east of the Tikchik Mountains to either the eastern or western portion of their range for the rut and wintering. In the 2000s, movements of radio-collared caribou indicated that individual caribou had little fidelity to specific calving or wintering areas. Since 2008, however, radio-collared cows that winter in the eastern portion of their range calve in the Tundra Lake or Bonanza Hills areas (western Units 19A, 19B, 17B) while those that winter in the western portion of their range calve in the Kemuk Mountain/Koliganek area (southern Unit 17B, northern Unit 17C) (Barten 2015). ADF&G is hoping to radio-collar additional caribou and conduct more surveys to determine if the MCH is still one herd or if it has separated into two distinct herds (BBRAC 2020). Additionally, the potential for caribou in Katmai National Preserve to be a non-migratory population that is not part of the MCH was voiced during Tribal consultation for WSA19-07 and the Bristol Bay Council's winter 2020 meeting. The NPS expressed their intention to study these caribou in the near future (BBRAC 2020).

Photocensuses conducted during summer post-calving aggregations are used to estimate abundance (Barten 2015). These estimates show that in 2013, the MCH was estimated to be 18,016 caribou, the lowest estimate in over 30 years, and well below the State's population objective of 30,000 – 80,000 caribou (**Table 1**). Estimates over the next three years indicated that the population had grown, nearing the lower bound of this population objective from 2014-2016. However, the most recent estimates, obtained in July 2019 and 2020, shows that the population is less than half of the State's minimum population objective, at 13,448 caribou (ADF&G 2019c, 2020). The western segment of the MCH has declined appreciably since 2012, while the eastern segment's population increased between 2012 and 2015 and then declined back to 2012 levels in 2019 (**Figure 2**; ADF&G 2019e, Rinaldi 2020, pers.

comm.). Therefore, the population increases from 2014-2016 were due to increases in the eastern segment's population, while the 2019 decline are due to declines in both segments.

ADF&G and Togiak NWR plan to reevaluate the population objective range to determine if any adjustments are warranted (BBRAC 2020). In March 2020, ADF&G conducted two flights over the western segment of the herd and one flight over the eastern segment to monitor its status. ADF&G reported observing <2,500 caribou in the western segment, which was less than expected (YKDRAC 2020).

Estimates of composition are made during October aerial surveys. Given that the eastern and western population segments of the MCH have different seasonal ranges and are therefore subject to differing nutrition, predation, and other factors, composition ratios are summarized both collectively and individually by population segment. This allows for comparison between the eastern and western segments. As a whole, the MCH experienced a steady increase in bull:cow ratios between 2010 and 2016 (**Table 1**). In 2016, the ratio was 39 bulls:100 cows, which is the highest estimate since the late 1990s. The most recent estimate, in 2018, showed the bull:cow ratio was 32 bulls:100 cows, which is below the State's minimum bull:cow objective of 35 bulls:100 cows. Bull:cow ratios for the western segment have typically been higher than those for the eastern segment, though the difference has diminished in recent years (**Figure 3**). In 2017, this relationship was reversed. At that time, the eastern population segment had 33 bulls:100 cows while the western population segment had 31 bulls:100 cows (Barten 2017).

Calf:cow ratios have been variable for the MCH, ranging from 16 calves:100 cows in 2007 to 30 calves:100 cows in 2011 and 2014 (**Table 1**). In 2018, the most recent estimate, there were 34 calves:100 cows, which is above the State's minimum objective of 30 calves:100 cows and an improvement from 2017 (ADF&G 2019d). The calf:cow ratio has varied significantly between population segments. Between 2007 and 2013, the western population segment had consistently higher calf:cow ratios than the eastern segment. However, that relationship has been reversed since 2014 (**Figure 4**). In 2017, the eastern segment had 28 calves:100 cows while the western segment had 18 calves:100 cows (Barten 2017). Current calf:cow ratios are within the range of variability typical of herds occupying interior and southwest Alaska.

Habitat was not thought to be limiting the MCH based on nutritional indicators, including high pregnancy rates and calf weights (Barten 2015, ADF&G 2019d). However, now ADF&G and Togiak NWR are considering decreased range quality as a potential cause for the decline and are working together to design and implement a habitat assessment study (BBRAC 2020, WIRAC 2020, Moos 2021). Predation may be contributing to the population decline. ADF&G initiated a wolf predation control program near MCH calving grounds in southwestern Unit 17 in 2012 and expanded the control area in 2017 to include almost all of Unit 17B and portions of Units 9B and 19B (ADF&G 2019d, YKDRAC 2020). However, while wolf densities on the calving grounds are low, brown bear predation of calves on the calving grounds may be contributing to the population decline (WIRAC 2020). Heavy harvest pressure, icing events, deep snows and changing movement patterns may also have contributed to the population decline (YKDRAC 2020). In January 2021, ADF&G announced increased prevalence of *Brucella*, the bacteria responsible for brucellosis disease, in Mulchatna caribou (ADF&G 2021a).

Table 1. Mulchatna Caribou Herd composition counts and population estimates, 1975 – 2020 (Barten 2017, ADF&G 2019c, 2019d, 2020, Reiley 2021, pers. Comm. and Rinaldi 2020, pers. Comm.).

Year	Bulls: 100 cows	Calves: 100 cows	% of Total bulls			Composition sample size	Population Estimate
			Small bulls	Medium bulls	Large bulls		
1975	55	35	-	-	-	1,846	14,000
1978	50	65	-	-	-	758	7,500
1980	31	57	-	-	-	2,250	-
1981	53	45	-	-	-	1,235	20,600
1986	56	37	-	-	-	2,172	-
1987	68	60	-	-	-	1,858	52,500
1988	66	54	-	-	-	536	-
1993	42	44	-	-	-	5,907	150,000 ^a
1996	42	34	49	29	22	1,727	200,000 ^a
1998	41	34	28	43	29	3,086	-
1999	30	14	60	26	14	4,731	175,000 ^b
2000	38	24	47	33	20	3,894	-
2001	25	20	32	50	18	5,728	-
2002	26	28	57	30	13	5,734	147,000 ^b
2003	17	26	36	45	19	7,821	-
2004	21	20	64	29	7	4,608	85,000 ^b
2005	14	18	55	33	12	5,211	-
2006	15	26	57	34	9	2,971	45,000 ^b
2007	23	16	53	36	11	3,943	-
2008	19	23	47	36	17	3,728	30,000 ^b
2009	19	31	40	44	16	4,595	-
2010	17	20	30	44	26	4,592	-
2011	22	19	32	41	27	5,282	-
2012	23	30	38	38	24	4,853	22,930 ^c
2013	27	19	39	36	25	3,222	18,016 ^c
2014	35	30	44	31	25	4,793	27,225 ^c
2015	35	29	35	43	22	5,414	28,662 ^c
2016	39	22	43	29	28	5,195	28,775 ^c
2017	32	23	44	28	28	5,160	-
2018	32	34	-	-	-	-	-
2019	42	25	62	20	18	3,496	13,448 ^c
2020	34	36	59	20	20	5,357	13,500

^aEstimate derived from photo-counts, corrected estimates, subjective estimate of number of caribou in areas not surveyed, and interpolation between years when aerial photo surveys were not conducted.

^bEstimate of minimum population size based on July photo census.

^cEstimate based on Rivest et al. (1998) caribou abundance estimator.

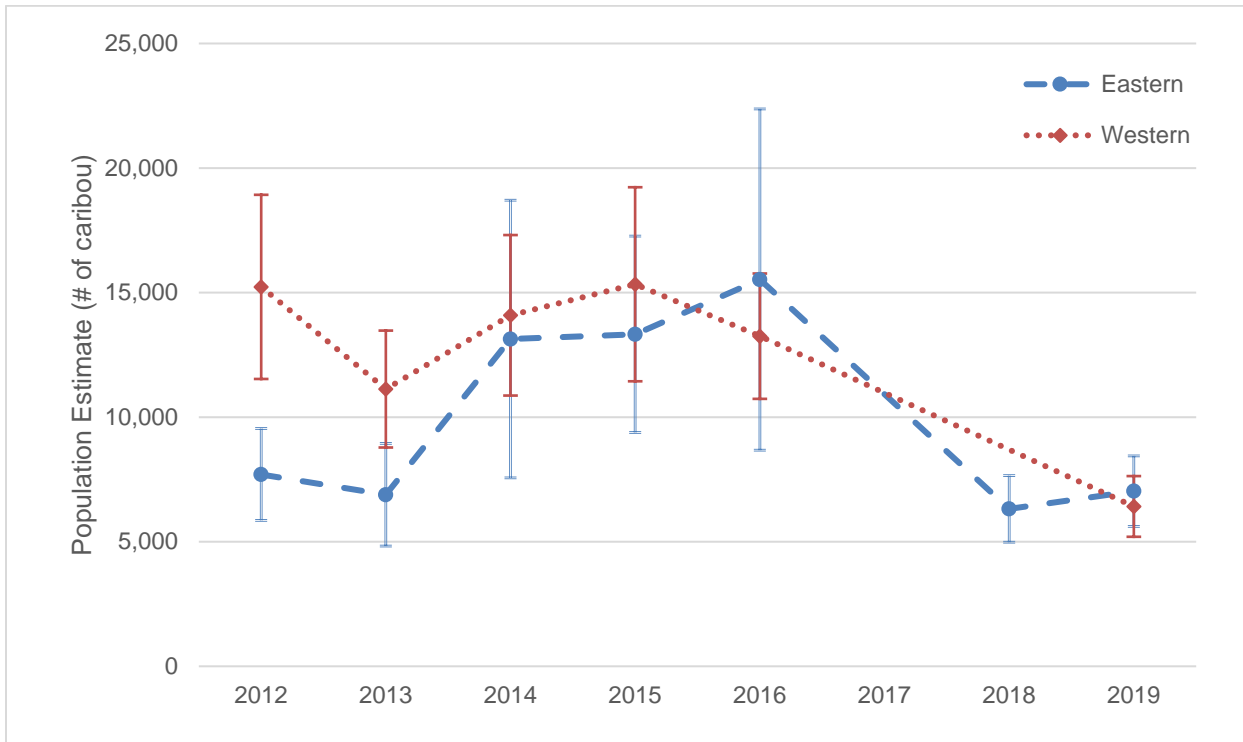


Figure 2. Population estimates of the eastern and western segments of the Mulchatna caribou herd with 95% confidence intervals (Rinaldi 2020, pers. comm.).

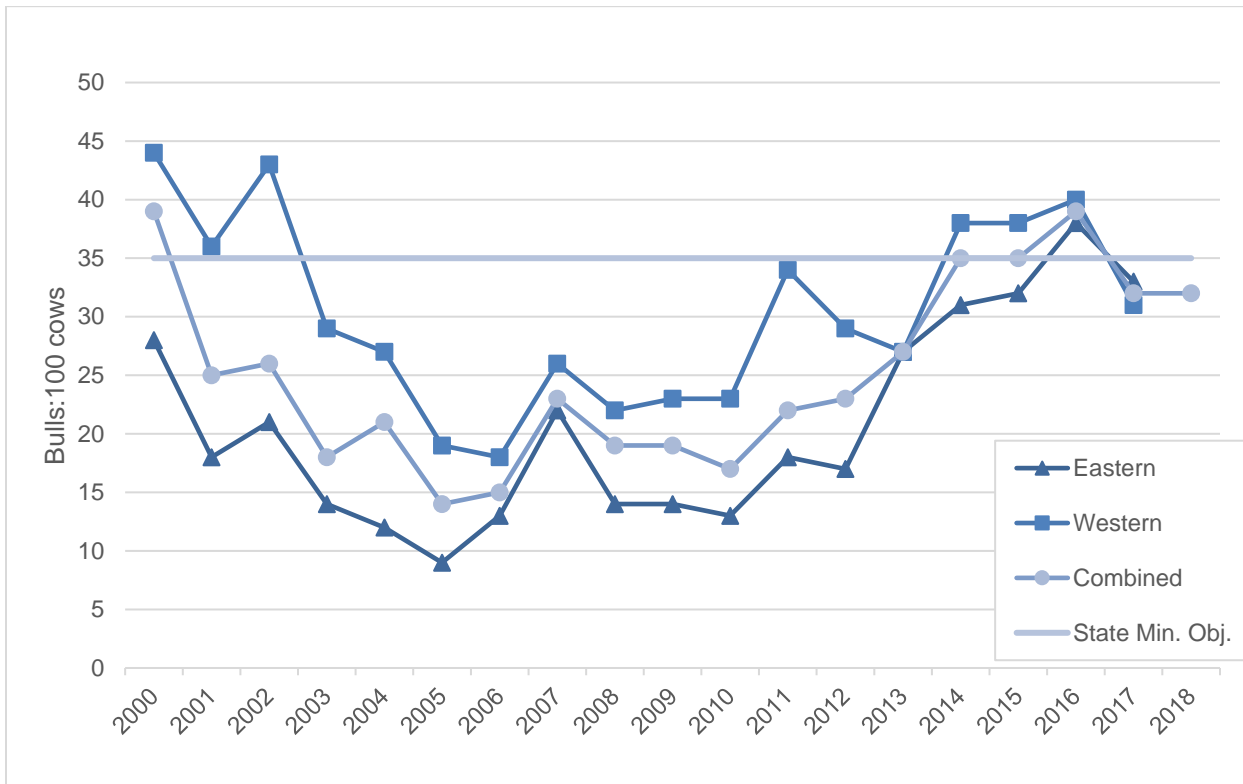


Figure 3. Mulchatna Caribou Herd fall bull:cow ratios, 2000 – 2018. The solid line represents the State’s minimum management objective of 35 bulls:100 cows (Barten 2017, ADF&G 2019d).

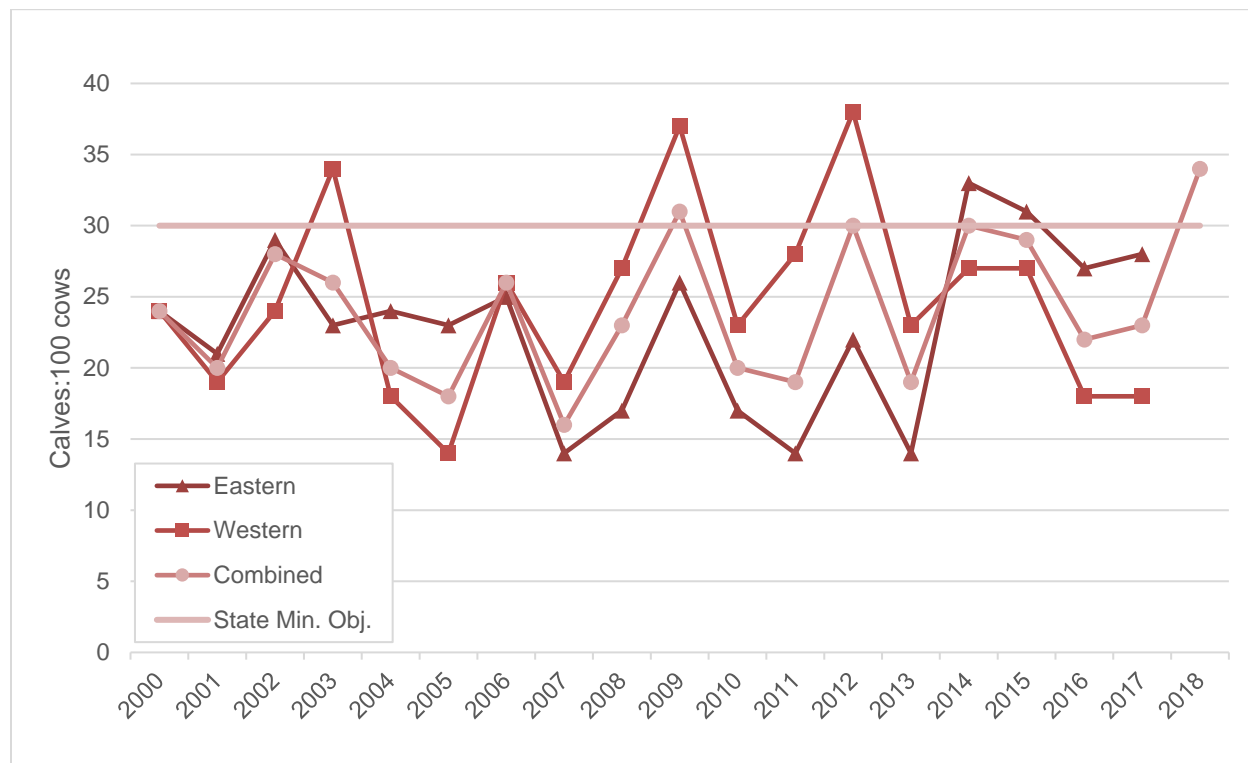


Figure 4. Mulchatna Caribou Herd fall calf:cow ratios, 2000 – 2018. The solid line represents the State’s minimum management objective of 30 calves:100 cows (Barten 2017, ADF&G 2019d).

Cultural Knowledge and Traditional Practices

At least five Alaska Native groups, Alutiiq, Central-Yup’ik, and the Athapaskan subgroups known as the Deg Xinag, Kolchan/Upper Kuskokwim, and Dena’ina, have historically inhabited and hunted in sections of Units 9, 17, and 19. Relationships between these groups varied from intermarriage, trading, and feuding (Snow 1981). All of these groups have a history of hunting caribou in this area and some participated in herding upon the introduction of reindeer in the 1890s (Willis 2006).

Historically, people in Western and Southwestern Alaska hunted caribou in the spring and fall with the occasional summer harvest. Historical accounts suggest that caribou was an important subsistence resource for food and the creation of winter clothing. Caribou were traditionally caught through the use of snares, surrounds, guide fences, bow and arrow, stalking, spears, and the Dena’ina utilized dogs (Clark 1981; Hosley 1981; Snow 1981; Townsend 1981; VanStone 1981). Vanstone mentioned that Central-Yup’ik groups used caribou hides in the creation of winter clothing and Hosley (1981) noted that the Kolchan made a paste out of caribou brains to tan hides for clothing purposes.

Russian fur traders travelled up the Alaskan coast and came into contact with the Alutiiq Koniag after 1760. It was not long after this initial contact that trading posts were established in the area that currently consists of Unit 9 (Clark 1981). As the Russians moved further north along the Alaska coast the fur trade expanded into what is now Units 17 and 19 (Snow 1981; Vanstone 1981). The arrival of the

Russians was followed by the creation of missions, boarding schools, canneries, and the arrival of both Russian and European trappers and prospectors (Hosley 1981; Snow 1981; Townsend 1981).

The most recent comprehensive subsistence surveys conducted by ADF&G have been used to provide examples for each unit in this proposal. ADF&G conducted a survey on the community of Naknek in Unit 9 during 2007, Manokotak in Unit 17 during 2008, and Nikolai in Unit 19 during 2011 (Holen et al. 2011; Holen et al. 2012; Ikuta et al. 2014). Within these communities, large mammal harvest is high and ranged between 12.1% on the low end and 52% on the high end (Holen et al. 2011; Ikuta et al. 2014). The per capita caribou harvest from Naknek, Manokotak, and Nikolai ranged from a low of 2 lbs/person in Nikolai to 21 lbs/person in Naknek (Holen et al. 2011; Ikuta et al. 2014). Even in those communities that reported no harvest for their study year, caribou was widely used, shared, and received. For example, in Manokotak for the 2008 study year, about 50% of the community households used caribou, 44% reported receiving caribou, and about 7% of the households reported sharing caribou with others (Holen et al. 2012).

Harvest History

Reported harvest of the MCH has decreased significantly since the early 2000s, when the herd was very large (**Figure 5**). Total reported harvest declined from 3,949 caribou in 2000 to 238 caribou in 2018. Harvest among all user groups declined during this period, but the decline was especially pronounced among nonlocal residents and nonresidents. Reduction of the State harvest limit in 2006 and elimination of the nonresident season in 2009 were influential in this decline (ADF&G 2017, 2019a).

Currently, harvest is dominated by local users, defined here as those with a customary and traditional use determination for caribou anywhere within the MCH range. Since 2009, the year the nonresident season was eliminated, 84% of reported harvest, or 263 caribou annually, can be attributed to local residents. The remainder, 49 caribou annually, were taken by nonlocal residents of Alaska (ADF&G 2017, 2019a). However, reported harvest may underestimate actual harvest. Though the magnitude of unreported harvest is unknown (Barten 2015, ADF&G 2019d), household survey data obtained by the ADF&G Subsistence Division provides some insights (**Table 2**). These surveys represent only a sampling of communities and years, so they cannot be used to quantify total annual harvest. In addition, they estimate an annual range of harvest for each community and are intended to demonstrate community harvest patterns and resource use, rather than precise numbers. However, they indicate that communities within the MCH range harvest more caribou than harvest reports suggest (**Table 2, Figure 5**). ADF&G suspects actual harvest is substantially higher than reported harvest in some years (ADF&G 2019d).

Acknowledging that reported harvest is not an accurate assessment of total harvest, it may provide insights into temporal and geographic harvest patterns. Among local users for the 2009 – 2018 time period, 81% of reported harvest occurred between December and March. March was the busiest month for harvest, accounting for 40% of the reported harvest by local users since 2009. These patterns are broadly similar to longer term averages (ADF&G 2017, 2019a).

Harvest is not evenly distributed across the range of the MCH. More caribou are harvested from the western segment of the population than from the eastern (BBRAC 2020). Since 2009, among local users,

54% of reported harvest has occurred in Unit 18, and 17% has occurred in Unit 17C. Less than 10% of reported harvest by local users is attributable to any other single unit. Converse trends exist for non-local users. Harvest in Unit 17B accounts for 53% (26 caribou annually), while Unit 18 accounts for 20% (10 caribou annually) of the reported harvest among this user group since 2009. Fewer than five caribou, on average, are reported harvested each year by nonlocal users in any other single unit.

During the 2019/20 season, 2,112 RC503 permits were issued, 1,776 permits were returned, and 446 permit holders hunted. From the returned permits, 127 caribou (84 bulls, 42 cows, 1 unknown) were reported harvested (ADF&G 2021b). Information and observations from law enforcement personnel indicated that actual harvest well exceeded reported harvest (Moos 2020, pers. comm.).

During the 2020/21 season, 28 were harvested. There were 20 harvested by local residents and 8 by non-local residents (Reiley 2021, pers. Comm.).

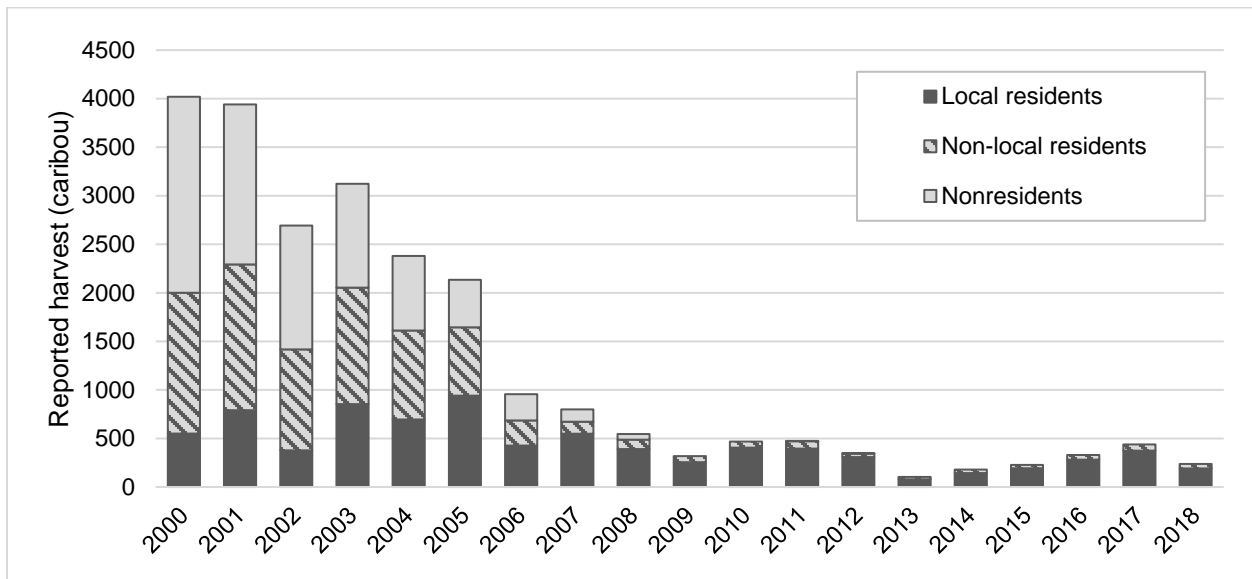


Figure 5. Reported harvest from the Mulchatna Caribou Herd by all users, 2000 – 2018. Nonresident seasons were eliminated in 2009 (ADF&G 2017, 2019a).

Table 2. Use of caribou by communities across the range of the Mulchatna Caribou Herd, 2000 – 2013, based on household surveys (ADF&G 2019b).

Unit	Community	Year	Households using caribou	Households harvesting caribou	Harvest	
					Number of caribou	95% CI
9B	Igiugig	2001	100%	91%	23	0%
		2005	100%	58%	24	22%
	Iliamna	2001	76%	43%	40	34%
		2004	77%	8%	3	62%
	Kokhanok	2001	94%	25%	20	84%
		2005	80%	26%	21	32%
	Levelock	2001	100%	53%	28	37%
		2005	100%	64%	27	33%

Unit	Community	Year	Households using caribou	Households harvesting caribou	Harvest	
					Number of caribou	95% CI
	Newhalen	2001	94%	65%	71	14%
		2004	88%	44%	49	9%
	Nondalton	2001	94%	27%	23	30%
		2004	53%	13%	18	9%
	Pedro Bay	2001	21%	0%	0	0%
		2004	28%	6%	1	0%
	Port Alsworth	2001	90%	10%	4	82%
		2004	86%	9%	6	21%
9C	King Salmon	2007	33%	12%	16	11%
	Naknek	2007	49%	21%	74	12%
	South Naknek	2007	62%	5%	2	6%
17A	Togiak	2001			106	27%
	Twin Hills	2001			8	31%
17B	Koliganek	2001	91%	57%	93	41%
		2005	89%	61%	91	28%
17C	Aleknagik	2001	89%	47%	48	23%
		2008	13%	0%	0	0%
	Clarks Point	2001	86%	57%	28	0%
		2008	36%	9%	2	216%
	Dillingham	2001	14%	6%	344	30%
		2010	36%	5%	63	52%
	Ekwok	2001	97%	31%	28	23%
	Manokotak	2001	88%	42%	68	17%
		2008	49%	8%	20	5%
	New Stuyahok	2001	98%	66%	260	13%
		2005	92%	59%	178	20%
	Portage Creek	2001	71%	29%	10	0%
18	Akiak	2010	78%	37%	55	21%
	Bethel	2011	55%	16%	446	20%
		2012	55%	13%	374	27%
	Eek	2013	61%	27%	47	28%
	Kwethluk	2010	87%	39%	111	21%
	Marshall	2010	7%	2%	6	136%
	Mountain Village	2010	6%	0%	0	
	Napakiak	2011	75%	32%	45	27%
	Napaskiak	2011	86%	41%	60	24%
	Oscarville	2010	92%	50%	10	28%
	Pilot Station	2013	6%	1%	3	102%
	Quinhagak	2013	65%	29%	125	21%
	Russian Mission	2011	11%	4%	5	96%
	Scammon Bay	2013	20%	4%	10	64%

Unit	Community	Year	Households using caribou	Households harvesting caribou	Harvest	
					Number of caribou	95% CI
19A	Tuluksak	2010	68%	22%	29	26%
	Tuntutuliak	2013	19%	8%	12	54%
	Red Devil	2005	0%	0%	0	0%
		2009	36%	18%	1	244%
	Sleetmute	2003	24%	10%	8	41%
		2004	18%	0%	0	0%
		2005	16%	0%	0	0%
		2009	3%	3%	2	75%
	Stony River	2003	53%	29%	14	22%
		2004	60%	20%	6	439%
		2005	33%	0%	0	0%
		2009	42%	8%	2	423%
	Upper Kalskag	2003	53%	35%	42	49%
		2004	30%	6%	4	24%
		2005	26%	15%	16	98%
		2009	15%	2%	1	605%

Effects of the Proposal

If this request is approved, the Federal in-season manager would be delegated authority to open and close seasons, announce harvest limits and set sex restrictions across the range of the MCH. While this change may decrease harvest opportunity for Federally qualified subsistence users in the short-term, it may also help conserve the MCH to ensure future harvest opportunities.

Given the recent, substantial decline in the MCH population, conservation measures are warranted. Low calf:cow ratios in the western segment of the MCH population in 2016 and 2017, where most of the harvest occurs, further contribute to conservation concerns (**Figure 4**). Furthermore, bull:cow ratios, which have been depressed since 2001, are hovering around the State's minimum objective of 35 bulls:100 cows (**Table 1**).

However, the effects of harvest on the population decline are unclear. In 2017 and 2018, reported harvest (440 and 238 caribou, respectively) only accounted for 3.3% and 1.8% of the estimated MCH population (13,500 caribou), respectively, which are very conservative harvest rates. Additionally, the magnitude of unreported harvest is unknown, with unknown effects on the MCH population. Therefore, the conservation benefits of adopting WP22-41 are uncertain.

Delegating authority to an in-season manager provides management flexibility, which is critical in responding to changing herd conditions in a timely manner. For example, an in-season manager could maximize harvest opportunity in the event of herd recovery, close all hunts in the event of further population declines to aid herd recovery, or (as was the case in 2020) balance harvest opportunity with herd recovery.

OSM PRELIMINARY CONCLUSION

Support Wildlife Proposal WP22-41

Justification

Conservation concerns exist for the MCH due to a substantial decline in abundance coupled with poor composition metrics. While the impact of harvest on the MCH is unclear, measures to conserve the herd and aid recovery are warranted. Delegating authority to an in-season manager provides the flexibility needed to make timely decisions and respond to changing conditions (e.g. MCH population decline or recovery).

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Appendix 1

Refuge Manager
Togiak National Wildlife Refuge
P.O. Box 270 MS 569
Dillingham, Alaska 99576

Dear Refuge Manager:

This letter delegates specific regulatory authority from the Federal Subsistence Board (Board) to the manager of the Togiak National Wildlife Refuge to issue emergency or temporary special actions if necessary to ensure the conservation of a healthy wildlife population, to continue subsistence uses of wildlife, for reasons of public safety, or to assure the continued viability of a wildlife population. This delegation only applies to the Federal public lands subject to Alaska National Interest Lands Conservation Act (ANILCA) Title VIII jurisdiction within Units 9A, 9B, 9C (that portion within the Alagnak River drainage), 9C (that portion draining into the Naknek River from the north, and Graveyard Creek and Coffee Creek), 17A (all drainages west of Right Hand Point), 17A remainder, 17B, 17C (that portion of 17C east of the Wood River and Wood River Lakes), 17C remainder, 18 (that portion to the east and south of the Kuskokwim River), 18 remainder, 19A and 19B (excluding rural Alaska residents of Lime Village) for the management of caribou on these lands.

It is the intent of the Board that actions related to management of caribou by Federal officials be coordinated, prior to implementation, with the Alaska Department of Fish and Game (ADF&G), representatives of the Office of Subsistence Management (OSM), the Bureau of Land Management (BLM) Anchorage Field Office manager, the Nushagak Peninsula Caribou Planning Committee, the Yukon Delta National Wildlife Refuge manager, the Superintendent of Katmai National Park and Preserve, the Superintendent of Lake Clark National Park and Preserve, and the Chair of affected Council(s) to the extent possible. The Office of Subsistence Management will be used by managers to facilitate communication of actions and to ensure proposed actions are technically and administratively aligned with legal mandates and policies. Federal managers are expected to work with managers from the State and other Federal agencies, the Council Chair or alternate, local tribes, and Alaska Native Corporations to minimize disruption to subsistence resource users and existing agency programs, consistent with the need for special action.

DELEGATION OF AUTHORITY

1. Delegation: The Togiak National Wildlife Refuge manager is hereby delegated authority to issue emergency or temporary special actions affecting caribou on Federal lands as outlined under the **Scope of Delegation**. Any action greater than 60 days in length (temporary special action) requires a public hearing before implementation. Special actions are governed by Federal regulation at 36 CFR 242.19 and 50 CFR 100.19.

2. Authority: This delegation of authority is established pursuant to 36 CFR 242.10(d)(6) and

50 CFR 100.10(d)(6), which state: “The Board may delegate to agency field officials the authority to set harvest and possession limits, define harvest areas, specify methods or means of harvest, specify permit requirements, and open or close specific fish or wildlife harvest seasons within frameworks established by the Board.”

3. Scope of Delegation: The regulatory authority hereby delegated is limited to the following authorities within the limits set by regulation at 36 CFR 242.26 and 50 CFR 100.26:

- To open and close seasons, announce harvest limits and set sex restrictions for caribou on Federal public lands in Units 9A, 9B, 9C (that portion within the Alagnak River drainage), 9C (that portion draining into the Naknek River from the north, and Graveyard Creek and Coffee Creek), 17A (all drainages west of Right Hand Point), 17B and 17C (that portion of 17C east of the Wood River and Wood River Lakes), 18 (that portion to the east and south of the Kuskokwim River), 18 remainder, 19A and 19B (excluding rural Alaska residents of Lime Village).

This delegation also permits you to close and reopen Federal public lands to nonsubsistence hunting, but does not permit you to specify methods and means, permit requirements, or harvest and possession limits for State-managed hunts.

This delegation may be exercised only when it is necessary to conserve caribou populations, to continue subsistence uses, for reasons of public safety, or to assure the continued viability of the populations. All other proposed changes to codified regulations, such as customary and traditional use determinations or adjustments to methods and means of take, shall be directed to the Board.

The Federal public lands subject to this delegated authority are those within Units 9A, 9B, 9C (that portion within the Alagnak River drainage), 9C (that portion draining into the Naknek River from the north, and Graveyard Creek and Coffee Creek), 17A (all drainages west of Right Hand Point), 17A remainder, 17B, 17C (that portion of 17C east of the Wood River and Wood River Lakes), 17C remainder, 18 (that portion to the east and south of the Kuskokwim River), 18 remainder, 19A and 19B (excluding rural Alaska residents of Lime Village).

4. Effective Period: This delegation of authority is effective from the date of this letter and continues until superseded or rescinded.

5. Guidelines for Delegation: You will become familiar with the management history of the wildlife species relevant to this delegation in the region, with current State and Federal regulations and management plans, and be up-to-date on population and harvest status information. You will provide subsistence users in the region a local point of contact about Federal subsistence issues and regulations and facilitate a local liaison with State managers and other user groups.

You will review special action requests or situations that may require a special action and all supporting information to determine (1) consistency with 50 CFR 100.19 and 36 CFR 242.19,

(2) if the request/situation falls within the scope of authority, (3) if significant conservation problems or subsistence harvest concerns are indicated, and (4) what the consequences of taking an action or no action may be on potentially affected Federally qualified subsistence users and non-Federally qualified users. Requests not within your delegated authority will be forwarded to the Board for consideration. You will maintain a record of all special action requests and rationale for your decision. A copy of this record will be provided to the Administrative Records Specialist in OSM no later than sixty days after development of the document.

For management decisions on special actions, consultation is not always possible, but to the extent practicable, two-way communication will take place before decisions are implemented. You will also establish meaningful and timely opportunities for government-to-government consultation related to pre-season and post-season management actions as established in the Board's Government-to-Government Tribal Consultation Policy (Federal Subsistence Board Government-to-Government Tribal Consultation Policy 2012 and Federal Subsistence Board Policy on Consultation with Alaska Native Claim Settlement Act Corporations 2015).

You will immediately notify the Board through the Assistant Regional Director for OSM, and coordinate with the Chair(s) or alternate of the affected Council(s), local ADF&G managers, and other affected Federal conservation unit managers concerning emergency and temporary special actions being considered. You will ensure that you have communicated with OSM to ensure the special action is aligned with ANILCA Title VIII, Federal Subsistence regulations and policy, and that the perspectives of the Chair(s) or alternate of the affected Council(s), OSM, and affected State and Federal managers have been fully considered in the review of the proposed special action.

If the timing of a regularly scheduled meeting of the affected Council(s) permits without incurring undue delay, you will seek Council recommendations on the proposed temporary special action(s). If the affected Council(s) provided a recommendation, and your action differs from that recommendation, you will provide an explanation in writing in accordance with 50 CFR 100.10(e)(1) and 36 CFR 242.10(e)(1).

You will issue decisions in a timely manner. Before the effective date of any decision, reasonable efforts will be made to notify the public, OSM, affected State and Federal managers, law enforcement personnel, and Council members. If an action is to supersede a State action not yet in effect, the decision will be communicated to the public, OSM, affected State and Federal managers, and the local Council members at least 24 hours before the State action would be effective. If a decision to take no action is made, you will notify the proponent of the request immediately. A summary of special action requests and your resultant actions must be provided to the coordinator of the appropriate Council(s) at the end of each calendar year for presentation to the Council(s).

You may defer a special action request, otherwise covered by this delegation of authority, to the Board in instances when the proposed management action will have a significant impact on a large number of Federal subsistence users or is particularly controversial. This option should be exercised judiciously and may be initiated only when sufficient time allows for it. Such deferrals should not be considered when immediate management actions are necessary for

conservation purposes. The Board may determine that a special action request may best be handled by the Board, subsequently rescinding the delegated regulatory authority for the specific action only.

6. Support Services: Administrative support for regulatory actions will be provided by the Office of Subsistence Management.

Sincerely,

Anthony Christianson
Chair

Enclosures

cc: Federal Subsistence Board

Assistant Regional Director, Office of Subsistence Management
Deputy Assistant Regional Director, Office of Subsistence Management
Subsistence Policy Coordinator, Office of Subsistence Management
Wildlife Division Supervisor, Office of Subsistence Management
Subsistence Council Coordinators, Office of Subsistence Management
Chair, Bristol Bay Subsistence Regional Advisory Council
Chair, Western Interior Alaska Subsistence Regional Advisory Council
Chair, Yukon-Kuskokwim Delta Subsistence Regional Advisory Council
Yukon Delta National Wildlife Refuge Manager
Katmai National Preserve Superintendent
Lake Clark National Preserve Superintendent
Bureau of Land Management, Anchorage Field Office Manager
Deputy Commissioner, Alaska Department of Fish and Game
Special Projects Coordinator, Alaska Department of Fish and Game
Interagency Staff Committee
Administrative Record

WP22-42 Executive Summary

General Description	Wildlife Proposal WP22-42 requests the Federal Subsistence Board increase the harvest limit of moose from 2 to 3 in Unit 18 remainder. <i>Submitted by: The Yukon Kuskokwim Delta Subsistence Regional Advisory Council.</i>
Proposed Regulation	Unit 18—Moose <i>Unit 18, remainder—2 3 moose, only one of Aug. 1- Apr. 30 which may be antlered. Antlered bulls may not be harvested from Oct. 1 through Nov. 30</i>
OSM Preliminary Conclusion	Support
Yukon Kuskokwim Delta Subsistence Regional Advisory Council	
Western Interior Subsistence Regional Advisory Council	
Seward Peninsula Subsistence Regional Advisory Council	
Interagency Staff Committee Comments	
ADF&G Comments	
Written Public Comments	None

DRAFT STAFF ANALYSIS
WP22-42

ISSUES

Proposal WP22-42, submitted by the Yukon Kuskokwim Delta Subsistence Regional Advisory Council (Council), requests the Federal Subsistence Board (Board) increase the harvest limit of moose from 2 to 3 in Unit 18 remainder (**Figure 1**).

DISCUSSION

The proponent states this request to increase the harvest limit by one additional moose in Unit 18 remainder is needed to continue subsistence uses and increase opportunity for sharing moose throughout the Yukon-Kuskokwim Delta region. Increasing the harvest limit will help to ensure long-term sustainability of the Lower Yukon River area moose population, which is currently too high to be supported by the local environment. If this moose population is not reduced, it is at risk of crashing due to over browsing of available forage. Additional harvest opportunity of one extra moose in Unit 18 remainder will support the Lower Yukon River communities' ability to provide for their families and community. It will also increase sharing opportunities with subsistence communities in other areas of the Yukon-Kuskokwim Delta that do not have as abundant of a moose population and are in need of subsistence food support. Increased harvest and sharing opportunity is especially needed in these times of low salmon returns on the Yukon and Kuskokwim Rivers and recent closures to the harvest of Mulchatna caribou.

Existing Federal Regulation

Unit 18—Moose

Unit 18, remainder—2 moose, only one of which may be antlered. Aug. 1- Apr. 30
Antlered bulls may not be harvested from Oct. 1 through Nov. 30

Proposed Federal Regulation

Unit 18—Moose

Unit 18, remainder—2 3 moose, only one of which may be antlered. Aug. 1- Apr. 30
Antlered bulls may not be harvested from Oct. 1 through Nov. 30

Existing State Regulation

Unit 18 - Moose

<i>Resident</i>	<i>Two moose only one of which may be an antlered bull, taking calves or cows accompanied by calves is prohibited</i>	<i>Aug. 1 – Sept. 30</i>
	<i>Or</i>	
	<i>Two antlerless moose</i>	
	<i>Or</i>	
<i>Remainder (includes Lower Yukon hunt area)</i>	<i>Two moose</i>	<i>Oct. 1 – Nov. 30</i>
		<i>Dec. 1 – Apr. 30</i>
<i>Non resident</i>	<i>One antlered bull</i>	<i>Sept. 1 – Sept 30</i>
	<i>Or</i>	
	<i>One antlerless moose</i>	<i>Dec. 1 – Mar. 15</i>

Extent of Federal Public Lands

Federal public lands comprise approximately 66.7% of Unit 18 and consist of 64.0% U.S. Fish and Wildlife Service (USFWS) managed lands and 2.7% Bureau of Land Management (BLM) managed lands.

Customary and Traditional Use Determinations

Residents of Unit 18, Aniak, Chuathbaluk, Kalskag, and Lower Kalskag have a customary and traditional use determination for moose in Unit 18, that portion of the Yukon River drainage upstream of Russian Mission and that portion of the Kuskokwim River drainage upstream of (but excluding) the Tuluksak River drainage.

Residents of Unit 18, St. Michael, Stebbins, Kalskag, and Lower Kalskag have a customary and traditional use determination for moose in Unit 18, that portion north of a line from Cape Romanzof to Kusilvak Mountain to Mountain Village, and all drainages north of the Yukon River downstream from Marshall.

Residents of Unit 18, Lower Kalskag, and Kalskag have a customary and traditional use determination for moose in the Unit 18 remainder area of this customary and traditional use determination.

Regulatory History

In November 2005, the Alaska Board of Game (BOG) adopted Proposal 4 in response to the rapid growth of the lower Yukon moose population. Action taken on the proposal modified the State harvest limit by allowing the harvest of antlered bulls only and established a winter season for antlered bulls and calves. During its November 2007 meeting, the BOG adopted Proposal 6, which lengthened the fall moose season for the lower Yukon and remainder areas of Unit 18 by 21 days and lengthened the winter season in the lower Yukon by 10 days.

At its March 2009 meeting, the BOG adopted Proposal 228, which liberalized the State harvest limit from antlered bulls to any moose for the Dec. 20–Jan. 20 season in the lower Yukon area of Unit 18. The BOG stated that the affected moose population increased to a size that could support the harvest of cows.

At its November 12, 2009 work session, the Board approved Special Action WSA08-13, which requested the harvest limit in the lower Yukon area of Unit 18 be increased to two moose per regulatory year, with one allowed in the fall and one in the winter.

At its November 13–16, 2009 meeting, the BOG adopted new regulations to extend the winter season from Jan. 20 to Feb. 28 and move the boundary between the lower Yukon and the remainder areas south, to a more discernible geographic landmark.

In 2010, the Yukon Delta National Wildlife Refuge (NWR) submitted Proposal WP10-56, which requested that the harvest limit in the lower Yukon area of Unit 18 (that portion north and west of a line from Cape Romanzof to Kusilvak Mountain to Mountain Village, excluding all Yukon River drainages upriver from Mountain Village) be changed to two moose per regulatory year. Hunters were allowed to harvest one antlered bull in the fall season and one moose in the winter season. Hunters that did not harvest a moose in the fall would be allowed to harvest two moose during the winter season. The proposal also requested that the Yukon Delta NWR manager be delegated the authority to restrict the harvest in the winter season to one antlered bull or one moose per regulatory year, after consultation with the Alaska Department of Fish and Game (ADF&G). The proposal was adopted by the Board with modification to extend the winter season to February 28.

Also in 2010, the Yukon Delta NWR submitted Proposal WP10-57, which requested a change in a portion of the regulatory boundary description for Unit 18, north and west of a line from Cape Romanzof to Kusilvak Mountain to Mountain Village, excluding all Yukon River drainages upriver from Mountain Village. This area was referred to as the lower Yukon hunt area. The proposal was adopted by the Board with modification to remove the Cape Romanzof to Kusilvak Mountain section and replace it with a descriptor for the Kashunuk River drainage.

In 2012, the Yukon Delta NWR submitted Proposal WP12-49, requesting the moose season in Unit 18, that portion north and west of the Kashunuk River including the north bank from the mouth of the river upstream to the old village of Chakaktolik, and west of a line from Chakaktolik to Mountain Village excluding all Yukon River drainages upriver from Mountain Village, be revised from the fall and winter dates (Aug. 10 - Sept. 30 and Dec. 20 - Feb. 28) to Aug. 1 through the last day of February. The harvest limit was two moose, only one of which may be antlered. The harvest of an antlered bull would be limited to the dates of Aug. 1 – Sept. 30. The proposal was adopted with modification by the Board at its January 2012 meeting to allow for the harvest of an antlered bull starting on Aug. 1 instead of Sept. 1.

In 2014, the Council submitted Proposal WP14-23, which requested an extension of the moose season in Unit 18, that portion north and west of the Kashunuk River including the north bank from the mouth of the river upstream to the old village of Chakaktolik to Mountain Village and excluding all Yukon River drainages upriver from Mountain Village, from August to the last day of February, to Aug. 1 – Mar. 31. It also requested removal of the bull-only restriction from Aug. 1 –Sept. 30. The proposal was adopted with modification by the Board, which resulted in combining the lower Yukon portion of Unit 18 with Unit 18 remainder, establishing a single Yukon drainage hunt area. The modification also stipulated that antlered bulls may not be harvested Oct. 1 – Nov. 30. The harvest limit in Unit 18 remainder was also increased to two moose.

In 2018, the Board adopted Proposal WP18-29, submitted by the Orutsararmiut Native Council, which requested the moose season in Unit 18 remainder be lengthened from Aug. 1- Mar. 31 to Aug. 1- Apr. 30. The Council concurred with the analysis and agency reports that the moose population seemed to be doing very well in the area and supported providing additional subsistence opportunity through an extended season.

At its January 17–20, 2020 meeting, the BOG adopted Proposal 8 regulations to extend the winter season from Mar. 15 to Apr. 30. The BOG stated that the moose population was continuing to increase and suspected that the Paimiut area had surpassed carrying capacity. Extending the season to Apr. 30 would help manage the growing population (BOG 2020).

In 2021, the Board approved emergency special action WSA21-02, submitted by the Council, requesting the Board increase the harvest limit for moose in Unit 18 remainder from 2 moose to 3 moose for the rest of the 2020/21 hunting season, which ended on April 30, 2021. The Board approved this request as the moose population in the Unit 18 remainder hunt area exceeded management objectives and habitat carrying capacity. While increasing the harvest limit may not have been enough to slow the growth of the population, it increased opportunity for harvest by Federally qualified subsistence users and helped support sharing in an area that has had a decline in salmon and caribou harvest.

Biological Background

Moose began to migrate into the Yukon-Kuskokwim Delta during the mid- to late-1940s and have become an important subsistence resource for locals (Perry 2014). Moose rely on willow and shrub

habitats for browsing and for cover from predators (Tape et al. 2016). The taller vegetation heights estimated in the northern and western portions of the state provide more suitable cover and increased forage availability above the snowpack for moose populations than was present in the past (Tape et al. 2016), yet most of the Yukon-Kuskokwim Delta is lowland treeless tundra and is not suitable as winter moose habitat. Consequently, much of the region supports only low to very low density moose populations. However, productive habitat does exist along river corridors, with approximately 4,500 mi² and 3,500 mi² of suitable moose habitat occurring along the Yukon and Kuskokwim Rivers, respectively (Perry 2014). The Yukon River moose population currently occupies most of the available riparian habitat, is at moderate to high density, is growing, and has high calf production and yearling recruitment (Perry 2014).

ADF&G management goals for moose in Unit 18 include: allowing populations to increase to levels sustainable by the current habitat; maintaining healthy age and bull:cow structures; monitoring the population size, trend, and composition; maintaining a continual and sustainable bull harvest; improving harvest reporting; and minimizing user group conflicts related to moose (Perry 2014). Specific objectives for the unit are to allow the lower Yukon River moose populations to increase above 2,500 – 3,500 moose, maintaining a minimum of 30 bulls:100 cows, conduct seasonal composition surveys, and conduct winter censuses and recruitment surveys (Perry 2014).

Population and composition surveys are conducted in five survey areas in Unit 18 (**Figure 2**; Perry 2014, OSM 2021). The Lowest Yukon, Andreafsky, and Paimiut survey areas are located within the Unit 18 remainder hunt area. These survey areas were purposely kept small to allow for multiple areas to be surveyed annually.

Between 1988 and 2008, surveys to estimate population size were conducted in the Lowest Yukon survey area of Unit 18 (**Table 1**; OSM 2021). At that time, the survey area encompassed the riparian corridor along the main stem of the Yukon River downstream of Mountain Village (Perry 2014). In February 2017, the survey area was expanded to accommodate the widening distribution of moose. The results of the 2017 survey estimated the population to be 8,226 moose in the expanded survey area, or 4.7 moose/mi² (OSM 2021). By comparison, the moose population and density within the original survey area in 2017 was estimated to be 5,719 with 4.8 moose/mi², compared to 2.4 moose/mi² in 2008 (**Figure 3**; OSM 2021). The most recent survey was done in Feb./March 2021. The results of this survey estimated the current population to be 12,031 moose in the expanded survey area, at 6.89 moose/mi². This implies that the Lowest Yukon moose population in Unit 18 has grown at an annual rate of 10% per year from 2017 to 2021 (ADF&G 2021a). This is well above the States management objective of 2,500 – 3,500 moose for this area (Perry 2014).

In the adjacent Andreafsky survey area, which includes the Yukon River from Pilot Station downstream to Mountain Village (Perry 2014), surveys were most recently conducted in 2021. The population was estimated at 6852 moose. The density was estimated in combination with the Paimiut survey area at 3.68 moose/mi² (ADF&G 2021b). Like the moose population in the Lowest Yukon survey area, the population in the Andreafsky area has grown substantially since the early 2000s (**Figure 3**), but it remains at lower density compared to the Lowest Yukon population (OSM 2021).

Population estimates were conducted in the Paimiut survey area in February 2013 and was estimated 6,031 moose with a density of 3.84 moose/mi², which was an increase from the population estimate of 3,614 moose and density of 2.3 moose/mi² calculated in 2006 (**Table 1, Figure 3**; OSM 2021, Perry 2014). In 2021, the moose population within the Paimiut survey area was estimated at 4,786 moose (ADF&G 2021b).

Adequate survey conditions for fall composition surveys are only present every three or four years. Consequently, composition surveys are completed as conditions allow (Perry 2014). The most recent Lowest Yukon survey area composition data was collected in November 2016. The bull:cow and calf:cow ratios were calculated at 25 bulls:100 cows and 81 calves:100 cows, respectively. While the bull:cow ratio is below the management objectives for the unit, the cow:calf ratio is high and indicates a growing population. Bull:cow ratios in the Andreafsky (63 bulls:100 cows in 2020) and Paimiut (57 bulls:100 cows in 2019) areas were more than double of those in the Lowest Yukon area and well above State management objectives (**Table 2**; ADF&G 2020).



Figure 1 Unit 18 remainder hunt area.

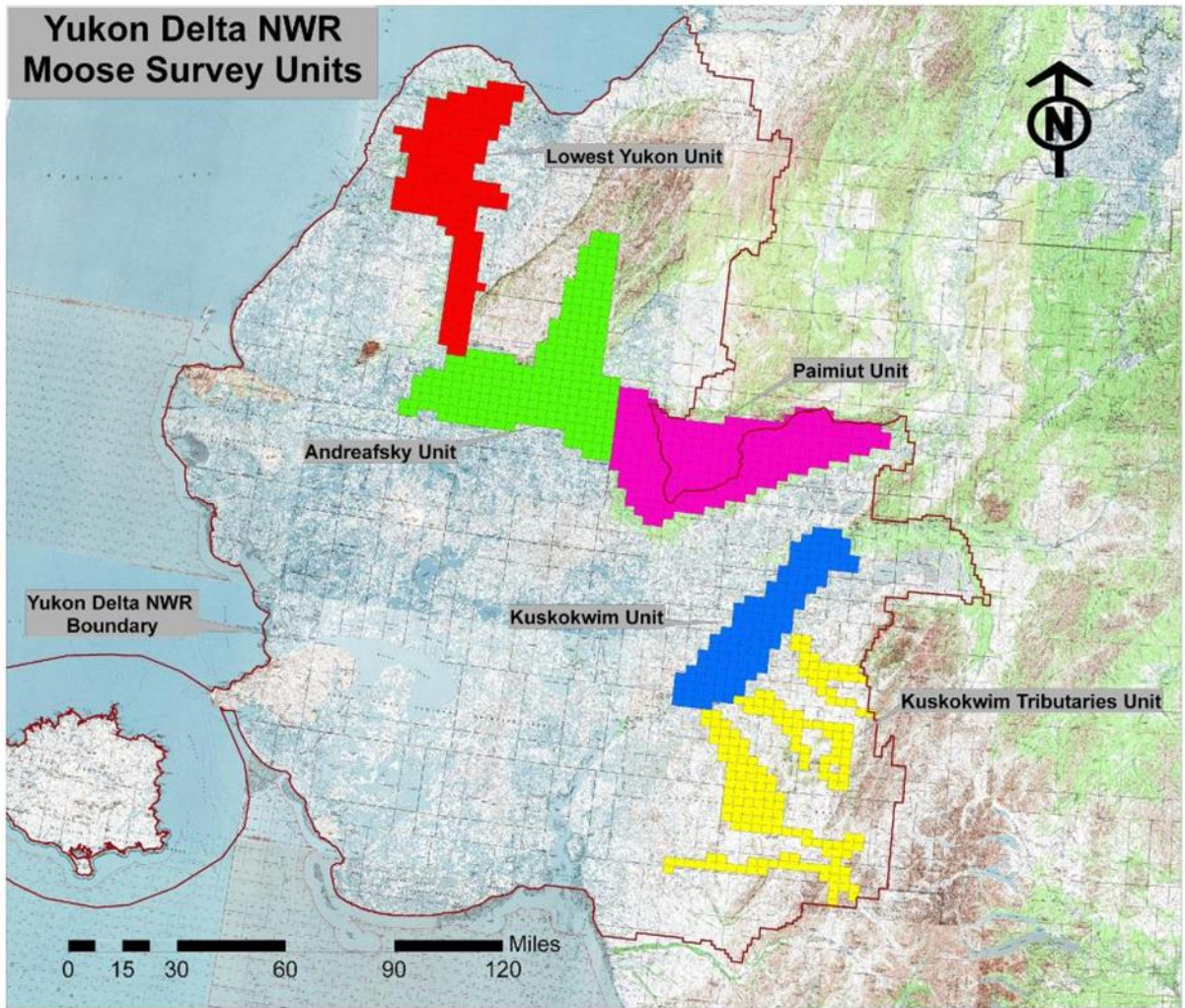


Figure 2. Yukon Delta National Wildlife Refuge Moose Survey Units (Rearden 2015 as cited in OSM 2021).

Table 1. Moose population estimates from spring census surveys in the survey areas located within Unit 18 remainder (OSM 2021, ADF&G 2021a, ADF&G 2021b).

Census Area	Year	Estimate at 95%CI	Density (mi ²)	Census Technique
Lowest Yukon	1988	0	NA	Minimum count
	1992	28	0.02	Minimum count
	1994	65	0.04	Minimum count
	2002	674 ± 21.9%	0.59	Spatial method
	2005	1342 ± 21.0%	1.12	Spatial method
	2008	2,827 ± 11.98%	2.37	Spatial method
	2008	3,319 ± 16.08%	2.78	Spatial method w/ SCF
	2017	5,719± 12%	4.79	Geospatial
	2017*	8,226 ± 11%	4.71	Geospatial
	2021	12,031 ± 33%	6.89	Geospatial
Andreafsky	1995	52 ± 74.0%	0.04	Gassaway method
	1999	524 ± 29.8%	0.23	Spatial method
	2002	418 ± 22.4%	0.26	Spatial method
	2012	2,748 ± 19.8%	1.72	Spatial method
	2012	3,170 ± 24.3%	1.99	Spatial method w/ SCF
	2021	6,852 ± 20.2%	3.68**	Geospatial
Paimiut	1992	994 ± 19.7%	0.64	Gassaway method
	1998	2,024 ± 12.93%	1.3	Gassaway method
	2002	2,382 ± 16.1%	1.52	Spatial method
	2006	3,614 ± 18.1%	2.3	Spatial method
	2013	5,598 ± 17.8%	3.56	Spatial method
	2013	6,031 ± 20.0%	3.84	Spatial method w/ SCF
	2021	4,786 ± 14.5%	3.68**	Geospatial
*Census area was increased in 2017 in the Lowest Yukon area.				
** Andreafsky and Paimiut density estimates done as one combined unit.				

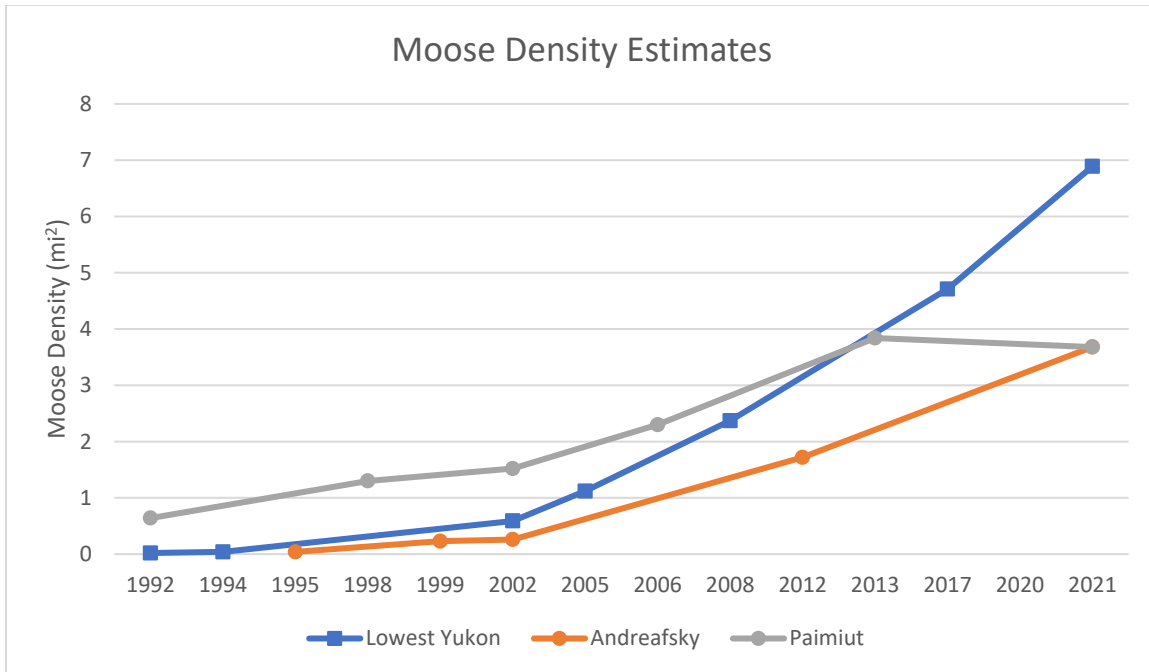


Figure 3 Moose density trend for Lowest Yukon, Andreafsky, and Paimiut survey areas. Note: Andreafsky and Paimiut density estimates were combined in 2021.

Table 2. Composition survey data from the moose survey areas located within Unit 18 remainder (ADF&G 2020).

Area	Year	Bull: 100 Cows	Calf: 100 Cows
Lowest Yukon Survey Area	2010	30	69
	2013	40	48
	2016	25	81
Andreafsky Survey Area	2010	42	61
	2019	57	41
	2020	63	35
Paimut Survey Area	2013	40	48
	2016	58	54
	2019	57	40

Harvest History

ADF&G’s harvest records for the general moose hunt in Unit 18 only includes Unit 18 remainder as moose harvest in the other hunt areas of Unit 18 are by registration permit. Over the past 10 years, the largest portion of the harvest has been by Alaska residents. Total reported harvest has increased roughly 26% from 587 moose in 2010 to 795 moose in 2019. While the number of hunters has stayed

relatively the same in the past 10 years, the success rate for those hunters has increased from 52% to 73% (Figure 4, ADF&G 2021c).

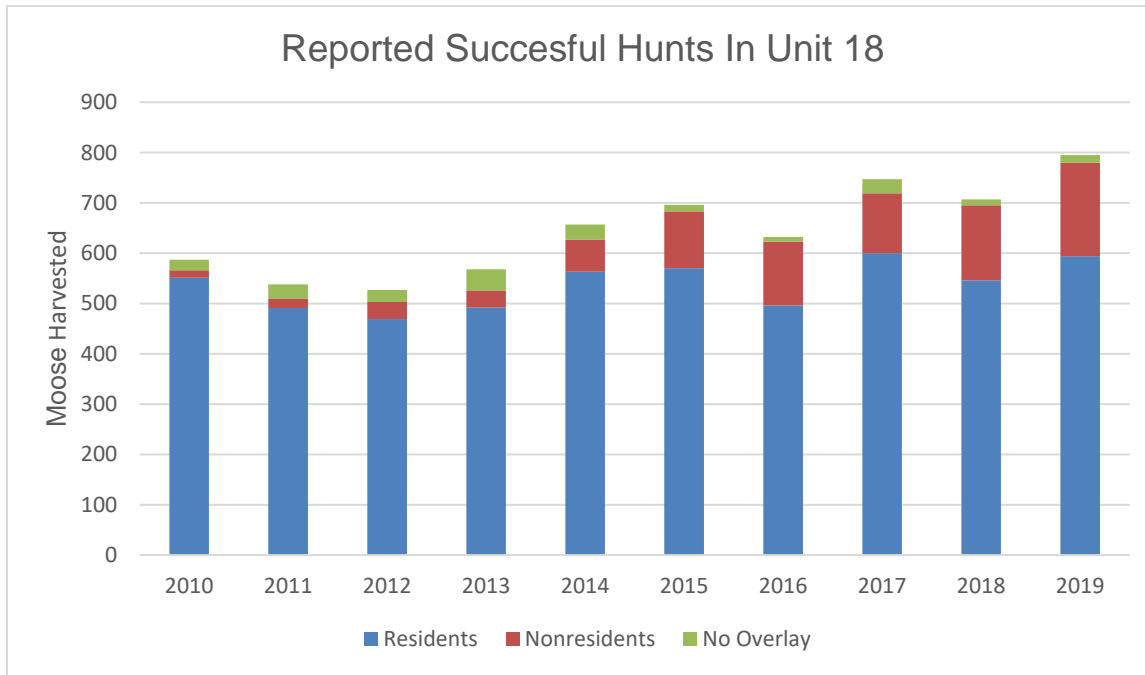


Figure 4. Reported general season moose harvested in Unit 18 (ADF&G 2021c).

Effects of the Proposal

If this proposal is adopted by the Board, the harvest limit for moose in the Unit 18 remainder hunt area will increase from two to three moose for Federally qualified subsistence users. No impacts are expected on non-Federally qualified users or the moose population, which exceeds management population objectives and is believed to exceed habitat carrying capacity. The requested increased harvest limit may slow the continued growth of this moose population, which would be a positive effect. In addition, the expanded harvest limit would increase opportunity for Federally qualified subsistence users and might promote further sharing of moose throughout the Yukon-Kuskokwim region and support subsistence families in need.

OSM PRELIMINARY CONCLUSION

Support Proposal WP22-42.

Justification

The moose population in the Unit 18 remainder hunt area far exceeds management objectives and is believed to exceed the habitat carrying capacity. Increasing the harvest limit from 2 to 3 moose may help limit the growth of this moose population and will provide additional opportunity for Federally qualified subsistence users.

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WCR22–45 Executive Summary

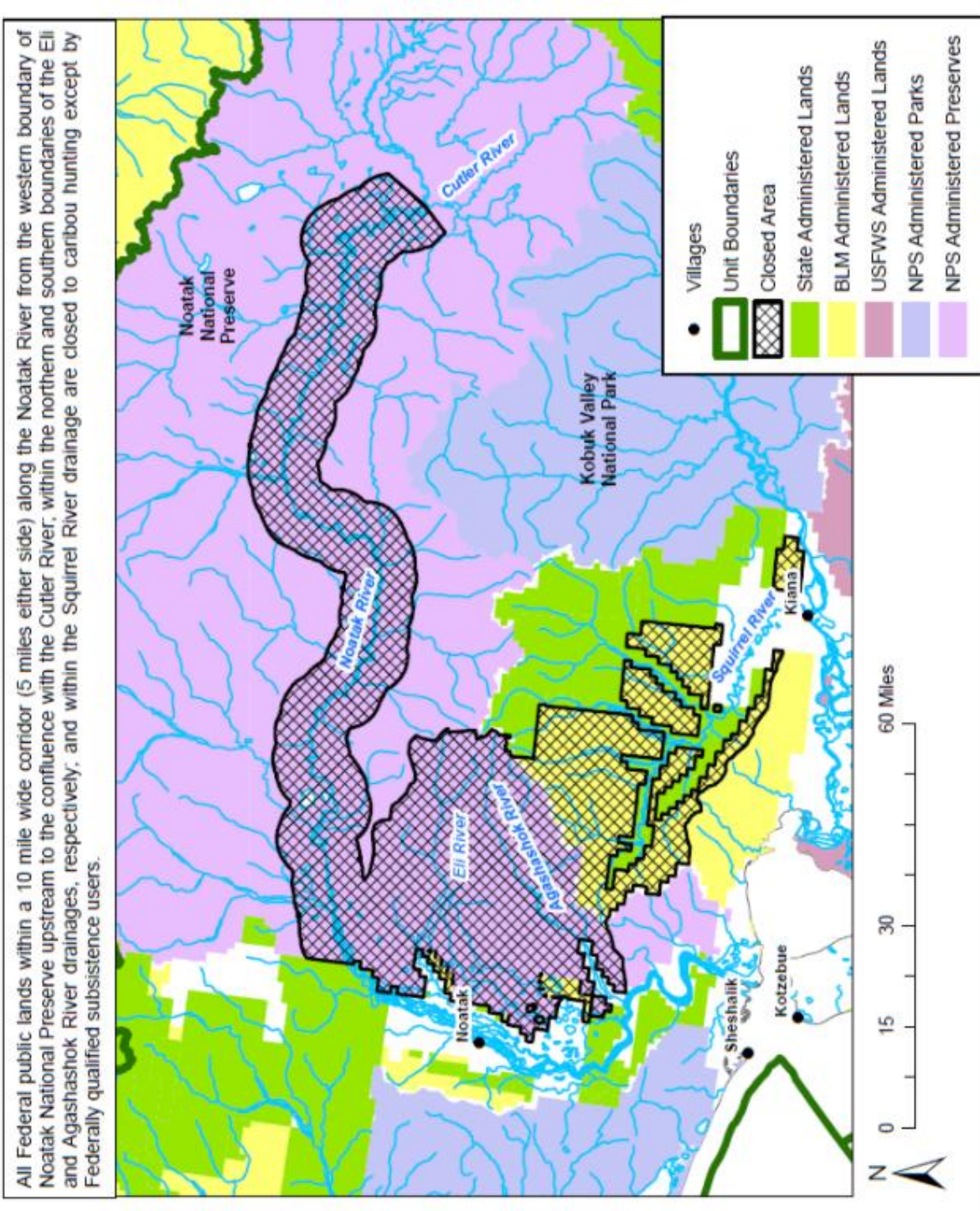
Closure Location and Species	Unit 23—Caribou
Current Regulation	<p>Unit 23—Caribou</p> <p><i>Unit 23, remainder—5 caribou per day by State registration permit, as follows:</i></p> <p><i>Bulls may be harvested</i> <i>Jul. 1-Jun. 30.</i></p> <p><i>Cows may be harvested. However, cows accompanied by calves may not be taken July 31-Oct. 14</i> <i>Jul. 31-Mar. 31.</i></p> <p><i>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.</i></p>
OSM Preliminary Conclusion	Maintain status quo
Western Interior Alaska Subsistence Regional Advisory Council Recommendation	
Seward Peninsula Subsistence Regional Advisory Council Recommendation	

WCR22-45 Executive Summary

Northwest Arctic Subsistence Regional Advisory Council Recommendation	
North Slope Subsistence Regional Advisory Council Recommendation	
Interagency Staff Committee Comments	
Written Public Comments	1 Eliminate closure

**FEDERAL WILDLIFE CLOSURE REVIEW
WCR22-45**

Closure Location: Unit 23 (Map 1)—Caribou



Current Federal Regulation

Unit 23—Caribou

Unit 23, remainder—5 caribou per day 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.

Closure Dates: Year-round

Current State Regulation

Unit 23—Caribou

<i>23, north of and including Singoalik River drainage</i>	<i>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.</i>	<i>Bulls</i>	<i>RC907</i>	<i>No closed season</i>
		<i>Cows</i>	<i>RC907</i>	<i>July 15-Apr 30</i>
<i>23 remainder</i>	<i>Nonresidents—One bull</i>		<i>HT</i>	<i>Aug. 1- Sept 30</i>
	<i>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.</i>	<i>Bulls</i>	<i>RC907</i>	<i>No closed season</i>
		<i>Cows</i>	<i>RC907</i>	<i>Sept 1- Mar 31</i>
	<i>Nonresidents—One bull</i>		<i>HT</i>	<i>Aug 1-Sept 30</i>

Regulatory Year Initiated: 2018

Extent of Federal Public Lands

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.

Customary and Traditional Use Determination

Residents of Unit 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.

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

In 2015, four temporary special actions, WSA15-03/04/05/06, requesting changes to caribou regulations in Units 23, 24, and 26, were submitted by the North Slope Subsistence Regional Advisory Council (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 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, applying the restrictions to all of Unit 23 and also prohibited the take 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.

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 for harvest 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 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 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 Subsistence Regional Advisory Council (Northwest Arctic Council) submitted a temporary special action request (WSA16-01) to close caribou hunting on Federal public lands in Unit 23 to NFQU 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 NFQU, 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 was passed for Unit 22 in 2016). The Alaska Department of Fish and Game (ADF&G) submitted the proposal in order 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 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 NFQU 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 approved 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 FQSU 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. The Board rejected WSA17-04 stating that recent changes to State regulations aimed at reducing caribou harvest should be given time to determine if they are effective before additional restrictions are enacted.

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, submitted by the Western Interior Alaska Subsistence Regional Advisory Council, which requested changes to the caribou season dates on Federal public lands in multiple Units, including Unit 23. The Board also rejected WP18-45, submitted by Northwest Arctic Council, which 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 Western Arctic Caribou Herd 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) 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 took no action on WP18-49 and 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.

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.

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. The Board took no action on Proposals WP20-43, -44, and -45 due to action taken on Proposal WP20-46.

In June 2021, the Board deferred Wildlife Special Action WSA21-01. WSA21-01 requested closing Federal public lands in Units 23 and 26A to caribou and moose hunting by non-Federally qualified users from August 1 to September 30, 2021. The Northwest Arctic Council submitted the request due to concern over the late migration of caribou into and through Unit 23, which has hindered the ability of subsistence users in the area to harvest caribou and meet their subsistence needs. The Board deferred action on the request, directing OSM to seek additional input on concerns related to caribou from various stakeholders and to fine tune their analysis of moose harvests and populations. The Board will reconsider this request prior to the 2022 hunting season.

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). 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 (FWS 2014, Halas 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 date was changed from Sep. 15 to Sep. 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.).

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-Sept. 20 due to user conflicts (Fall 1990). The proposed CUA 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-Sept. 20.

In 1990, the Noatak CUA was adopted under Federal regulations. In 1995, the Board adopted Proposal P95-50 to expand the time period and area of the CUA to Aug. 25-Sept. 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 CUA 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 CUA to Aug. 15-Sept. 30, which aligned with the current State regulations.

Closure last reviewed: N/A. This closure was adopted in 2018 and has not been reviewed since.

Justification for Original Closure (ANILCA Section 815 (3) criteria):

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 consistent with the recommendations of the Northwest Arctic and Seward Peninsula Councils, as well as the WACH Working Group. The Board viewed the targeted closure as a reasonable compromise to a complex problem. While the 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 is part of the NPS delayed entry zone, which already limits 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 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 2018/2019 and 2019/2020 regulatory years. The closure would extend through September 21st of each calendar year only. The 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 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. The 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 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. The 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 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 feels aircraft operators desire to place paying clients in the path of caribou are diverting caribou and preventing local communities from being able to get caribou. The Council stressed that even though closure may deflect non-federally qualified subsistence users to state lands, it is important to take steps to provide for opportunity for subsistence users on Federal lands. The Council noted that this conflict has been ongoing in this area for many years but it seems up until this point, transporters and guides have 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 supports this request.

The Council recognized the work that went into evaluating the most areas of most importance to local communities for harvest of caribou and are the site of the most intense user conflicts in this area but did not support the OSM modification because the full closure is the more dramatic effort needed in order to maximize subsistence opportunity. The Council feels that that the local harvest is already consuming the harvestable surplus, communities are growing, and that it perhaps is 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 area and that has been at the heart of the user conflicts in the region for so many years. He recognized the effort to find a solution that could be supported by all.

State Recommendation for Original Closure:

ADF&G **OPPOSES** these proposals (WP18-46 and WP18-47) at this time because 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 Unit 22, 23 and 26A. Both of these changes were adopted following an extensive public process that included the input of Regional Advisory Councils, the Western Arctic Herd 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 Western Arctic Caribou Herd Working Group supported a 2-year partial closure that mirrors the WSA 17-03 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.

Biological Background

Caribou abundance naturally fluctuates over decades (Gunn 2003, WACH Working Group 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, Ruggetti 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 (**Map 2**). 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 (Dau 2011, WACH Working Group 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. In the fall, the majority of the herd generally moves south toward wintering grounds south of the Brooks Range (Joly 2021, pers. comm.). Rut occurs during fall migration (Dau 2011, WACH Working Group 2011).

In recent years, the timing of fall migration has been less predictable. From 2010-2019, the average dates that GPS collared caribou crossed the Noatak River ranged from Sep. 6 – Oct. 13; the Kobuk River ranged from Sep. 24 – Nov. 3; and the Selawik River ranged from Oct. 2 – Nov. 10 (Joly and Cameron 2020). From 2010-2016, caribou migration was trending to occur earlier in the year. However, from 2017-2019, caribou crossed the Noatak River, but then there was substantial delay before caribou crossed the Kobuk and Selawik Rivers. This appears to have been the case for 2020 as well. 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. While data has yet to be analyzed, the first GPS collared caribou did not cross the Kobuk River 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.

The proportion of caribou using certain migration paths also varies each year (Joly and Cameron 2020). 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 2016).

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. 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 plans to conduct a census in 2021 (WACH Working Group 2020).

Between 1982 and 2011, the WACH population was within the liberal management level prescribed by the WACH Working Group. 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 where it has remained. In 2020, no photocensus was completed, and the WACH Working Group voted to maintain the herd's status at the conservative declining level (WACH Working Group 2020).

Between 1970 and 2017, the bull:cow ratio exceeded Critical Management levels identified in the 2019 WACH Management Plan. 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). 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 (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 (Dau 2016a). The average June calf:cow ratio increased to 79 calves:100 cows between 2017 and 2020. In June 2018 86 calves:100 cows were

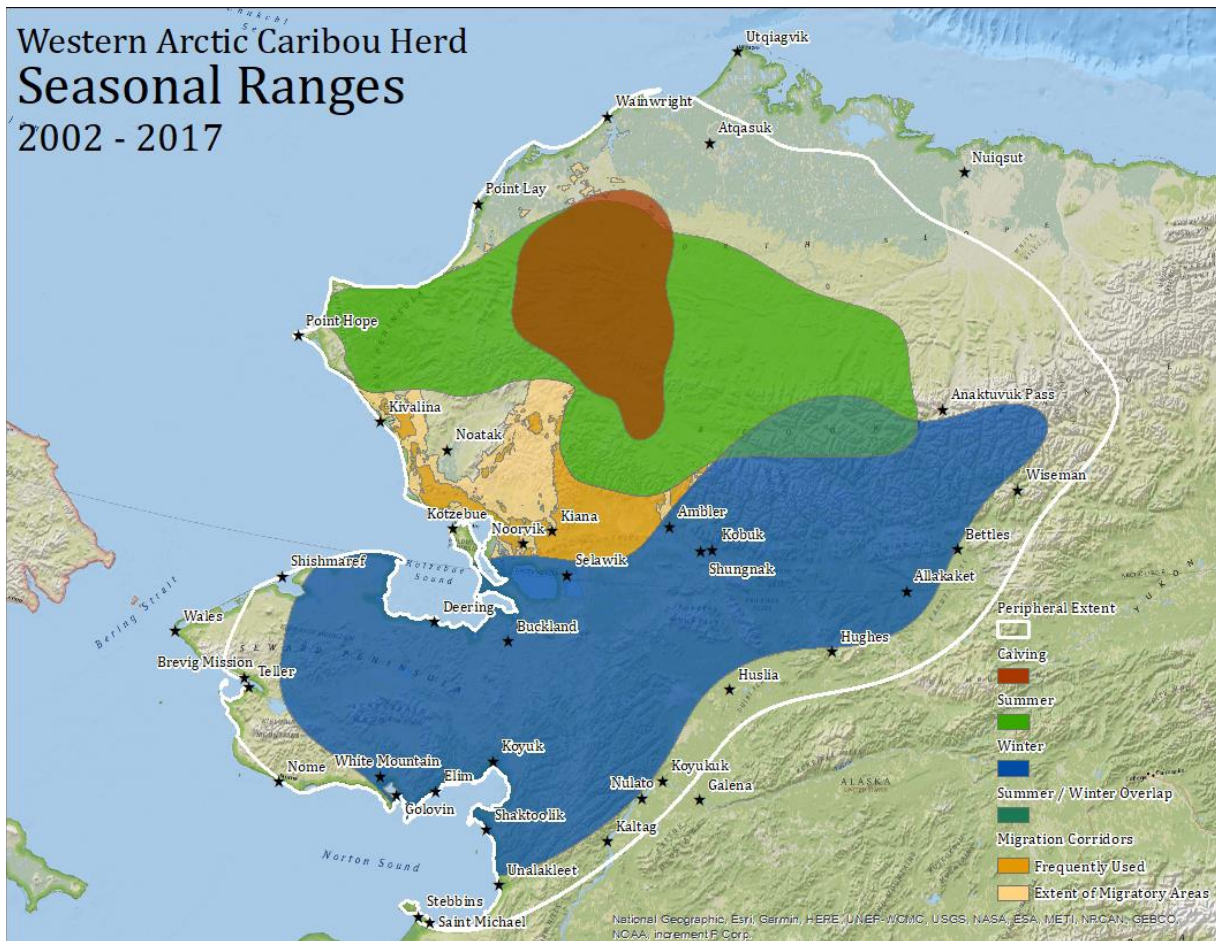
observed, which approximates the highest parturition level ever recorded for the herd (86 calves:100 cows in 1992). However, in 2020 the June calf:cow ratio dropped to 67 calves:100 cows (WACH Working Group 2020).

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.

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 2020, SY:adult ratios ranged from 9-26 and averaged 18 SY:100 adults/year. SY:100 adult ratios were high from 2016-2018, ranging from 22-23 SY:100 adults (Dau 2016b, NWARAC 2019a). The 2020 SY:adult ratio was 17 SY:100 adults (WACH Working Group 2020).

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 (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. These estimates are also susceptible to collar sample size and how long the collars have been on individuals (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). 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.



Map 2. Western Arctic Caribou Herd seasonal range map, 2002-2017 (WACH Working Group 2019).

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 in the Northwest Arctic region. Hunt timing changed—and continues to change—from year to year according to the availability of caribou and their migration paths (Burch 2012; ADF&G 1991). Iñupiaq hunting values are based on the belief that hunter behavior can prevent a successful harvest or alter the caribou migration (Anderson 1998).

Caribou continue to dominate the subsistence harvest in most communities in the region (Braem et al. 2015, Braem 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 capita harvest of caribou has been as high as 430 pounds per year in communities in Unit 23 (ADF&G 2021).

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 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.

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 of poor quality (Braem et al. 2015).

User Conflicts

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. 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 Pinstrip-Andersen 1999).

Conflicts between local and nonlocal hunters have been well documented in Unit 23, specifically in the Noatak NP, the Squirrel River area, and along the upper Kobuk River (Georgette and Loon 1988, Jacobson 2008, Harrington and Fix 2009, Halas 2015, NWARAC 2015, Braem et al. 2015), even during times of high caribou abundance. Braem et al. (2015:177) 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.”

A long-held cultural practice in the region requires that lead adult female caribou be allowed to establish migratory paths unhindered by human activity. 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 2015). 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). 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 factors contribute to larger scale shifts in migration.

The timing of hunting has caused conflicts between user groups because 85–95% of all caribou taken by nonlocal hunters are harvested between August 25 and October 7, the same period as intense subsistence hunting (Dau 2015:31). While hunt timing often aligns among these user groups, methods of access do not. Most local hunters harvest caribou with snowmachines, boats, and 4-wheelers, and few 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, and also place them in front of a migrating herd.

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). 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).

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 did differentiate between commercial transporter operators and “nonlocal” hunters, attributing a decrease in harvest success primarily to aircraft associated with commercial transporters (Halas 2015). Negative encounters between local and nonlocal hunters identified by respondents primarily focused on river crossings of migrating caribou (Halas 2015).

Effects of the closure to date

The most recent subsistence survey of caribou harvest in Noatak dates to 2016-2017 (Gonzalez et al. 2018); there is no new data available that would allow for a comparison of household caribou harvest before and after implementation of the closure. However, following implementation of the 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, NWARAC 2020, NWARAC 2021). Simultaneously, Council members representing other communities in Unit 23—where no closure is in place—have expressed ongoing and growing concern about the role of nonlocal hunters, transporters, and guides in preventing the continuation of subsistence hunting for caribou in the region (e.g. NWARAC 2018a, 2018b, 2019a, 2019b, 2020, 2021).

Harvest History

The State manages the WACH on a sustained yield basis (i.e. managing current harvests to ensure future harvests). The harvestable surplus when the WACH population trend is declining is calculated as 6% of the estimated population (WACH working group 2011, Parrett 2017b, pers. comm.). In 2019, the WACH harvestable surplus was 14,640 caribou (6% of 244,000 caribou). Assuming the herd population remained stable in 2020 and 2021, the harvestable surplus remains 14,640 caribou. This is a notable increase from the 2016 harvestable surplus of 12,056 caribou when harvest likely exceeded sustainable levels. However, there is substantial uncertainty in harvestable surplus estimates (Parrett 2015, Dau 2015). Of particular concern is the overharvest of cows, which has probably occurred since 2010/11 (Dau 2015). Dau (2015a: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, 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).

From 1999–2018, the average estimated total harvest from the WACH was 14,103 caribou/year, ranging from 11,729–16,219 caribou/year (Hansen 2020 and 2021, pers. comm.). These harvest levels are within and above the conservative harvest level specified in the WACH Management Plan. In 2015 and 2016, total local harvest estimates were 14,360 caribou and 14,971 caribou, respectively (Hansen 2019, pers. comm.). While these harvest estimates approximate the 2019–2021 harvestable surpluses, they exceed the 2016 harvestable surplus. In 2017 and 2018, the estimated local harvest was 14,218 and 13,818, respectively (Hansen 2021, pers. comm.). Of note, harvest estimates do not include wounding loss, which may be hundreds of caribou (Dau 2015).

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 2017). 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.

Between 1998 and 2019, annual reported caribou harvest in Unit 23 ranged from 168-814 caribou (Hansen 2021, pers. comm.). 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. On average, 76% of WACH caribou harvested by nonlocals are harvested in Unit 23 (Dau 2015).

From 1999-2013, 72% of nonlocal hunters on average accessed the WACH by plane. Most nonlocal harvest (85-90%) occurs between Aug. 25 and Oct. 7. In contrast, 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.

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 the Noatak and Squirrel River drainage and the apparent benefit of the 2016/17 Federal closure to Noatak residents 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. This could result in more user conflicts and interfere with caribou harvest by Federally qualified subsistence users. Feedback from Noatak residents indicate that the current closure has reduced user conflicts, resulting in more successful caribou hunts and allowing for the continuation of subsistence uses (NWARAC 2018a, 2019, 2020, 2021).

OSM CONCLUSION:

- x maintain status quo**
- _ modify or eliminate the closure**

Justification

The current closure is still necessary to continue subsistence uses of the WACH for Federally qualified subsistence users, specifically Noatak residents. The underlying factor leading to the closure in 2018—user conflict—has persisted overall in Unit 23 but has been mitigated in the closure area. The WACH continues to be managed at the conservative declining level. 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.

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Written Public Comments



unapologetically **FOR ALASKAN RESIDENTS**

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July 19, 2021

To: Federal Subsistence Board
Office of Subsistence Management
(Attn: Theo Matuskowitz)
1011 E. Tudor Road, MS-121
Anchorage, Alaska 99503-6199

Re: Federal Subsistence Board 2022-2024 Wildlife Proposals and Existing Closures

Dear Federal Subsistence Board Members,

Resident Hunters of Alaska (RHAK) represents several thousand members from across the state, rural and urban, who advocate for sustainable wildlife management policies and a resident hunting priority according to Article 8 of our state constitution.

RHAK participates in Regional Advisory Council (RAC) meetings and Federal Subsistence Board (FSB) meetings, and we have become alarmed at the continuing wildlife proposals and special action requests that are not based on actual biological emergencies or conditions that would prevent federally qualified subsistence users (FQU) from meeting their subsistence needs.

What makes any FSB closures and restrictions especially problematic is that there is no differentiation in the federal system between Alaska residents and nonresidents from another state or country; both Alaska residents and nonresidents are deemed the same under federal regulations by definition of a who is a FQU. A prime example of why this is so problematic is that often complaints about competition from non-local non-federally qualified subsistence users (NFQU) center on the nonresident component, which can often comprise the majority of NFQ hunters participating in these hunts. So, when any restrictions or closures on federal lands happen, Alaskans who used to live in a designated rural area but for whatever reason have moved to more urban areas of the state, can't return home to hunt and carry on their traditional hunting activities on federal lands, nor can other Alaskans participate in these hunts.

It has always been RHAK's position that when and where we have wildlife conservation concerns or subsistence opportunities are not being met, that the ***nonresident component should always be the first group of hunters***

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*Resident Hunters of Alaska Comments
Federal Subsistence Board 2022-2024 Wildlife Proposals & Existing Closures*

restricted. If other restrictions are still necessary, only then can we support restrictions on resident hunters.

We have always advised RACs to first use the Board of Game (BOG) process when and where there are concerns with too much competition from non-local NFQ hunters, as the BOG can differentiate between Alaska residents and nonresidents.

Comments on Individual Proposals and Existing Closures

WP22-07 Federal public lands of Admiralty Island draining into Chatham Strait between Point Marsden and Point Gardner are closed to deer hunting Sept. 15 – Nov. 30, except by Federally qualified subsistence users hunting under these regulations.

OPPOSE

The rationale of WP22-07 is not based on any biological data or harvest statistics that show a conservation concern for the deer population on Admiralty Island or that subsistence needs are not being met.

According to Alaska Department of Fish & Game (ADF&G) data, over the last decade we have had mild winters in Game Management Unit 4 and the deer population is “*high and stable.*” The deer population on western Admiralty Island is **not** depleted, as the proposal states. Nor are there any conservation concerns for the deer population under the current hunting regulations.

The proposal also states that there has been increased “*hunting pressure*” from NFQ hunters and it has “*become more challenging for subsistence hunters in Angoon to harvest sufficient deer for their needs.*” But according to ADF&G data, over the last two decades there has been a **decrease** in both the number of FQU and NFQU.

The FSB operates under ANILCA guidelines and the federal code of regulations that govern when and why any closures to NFQU can happen: “*With respect to subsistence uses of a particular fish or wildlife population, the Board may only approve a proposed closure if necessary for reasons of public safety, administration, or to assure the continued viability of such population (ANILCA §816(b), 36 CFR 242.10(d)(4)(vii) and 50 CFR 100.10(d)(4)(vii)).* **Meanwhile, the Board may approve a proposed closure of nonsubsistence uses of a particular fish or wildlife population for any of these same reasons, or if necessary for the conservation of healthy populations of fish and wildlife,**

or to continue subsistence uses of such population (ANILCA §815(3), 36 CFR 242.10(d)(4)(vi) and 50 CFR 100.10(d)(4)(vi)).”¹

The Board should vote down this proposal based on the above guidelines of when any restrictions or closures on federal lands for NFQU are allowed to happen.

WP22-09 Federal public lands draining into Lisianski Inlet, Lisianski Strait, and Stag Bay south of the latitude of Mite Cove (58° 4' N) and north of the latitude of Lost Cove (57° 52' N) are closed to deer hunting Oct. 15 – Dec. 31, except by Federally qualified subsistence users hunting under these regulations.

OPPOSE

Refer to our comments on WP22-07

WCR22-01 Deer Prince of Wales closed Aug. 1-15, except by Federally qualified subsistence users; non- Federally qualified users may only harvest 2 bucks

Rescind closure to NFQU on Price of Wales Island

WCR22-45 Caribou Unit 23 - Portions of Unit 23 - closed to non- Federally qualified users

Rescind closure to NFQU in those portions of Unit 23

Thank you for the opportunity to comment.

Sincerely,

Mark Richards
Executive Director Resident Hunters of Alaska

¹ <https://www.doi.gov/sites/doi.gov/files/uploads/closure-policy-revised-2020-08-04.pdf>

WP22-01 Executive Summary

<p>General Description</p>	<p>Proposal WP22-01 requests clarification of who is and who is not a participant in a community harvest system and how that affects community and individual harvest limits. <i>Submitted by: the Office of Subsistence Management</i></p>
<p>Proposed Regulation</p>	<p>§ _____.25 Subsistence taking of fish, wildlife, and shellfish: general regulations</p> <p><i>(c) Harvest limits</i></p> <p>...</p> <p>(5) Fish, wildlife, or shellfish taken by a participant in a community harvest system counts toward the community harvest limit or quota for that species as well as individual harvest limits, Federal or State, for each participant in that community harvest system, however, the take does not count toward individual harvest limits, Federal or State, of any non-participant. Fish, wildlife, or shellfish taken by someone who is not a participant in a community harvest system does not count toward any community harvest limit or quota.</p> <p>(i) For the purposes of this provision, all residents of the community are deemed participants in the community harvest unless the Board-approved framework requires registration as a prerequisite to harvesting or receiving any fish, wildlife, or shellfish pursuant to that community harvest, in which case only those who register are deemed participants in that community harvest.</p> <p>§ _____.26 Subsistence taking of wildlife</p> <p><i>(e) Possession and transportation of wildlife.</i></p> <p>...</p> <p>(2) An animal taken under Federal or State regulations by any member of a community with an established community harvest limit for that species counts toward the community harvest limit for that species. Except for wildlife taken pursuant to § _____.10(d)(5)(iii) or as otherwise provided for by this part, an animal taken as part of a community harvest limit counts toward every community member's</p>

WP22-01 Executive Summary

	<i>harvest limit for that species taken under Federal or State of Alaska regulations.</i>
OSM Preliminary Conclusion	Support
Southeast Alaska Subsistence Regional Advisory Council Recommendation	
Southcentral Alaska Subsistence Regional Advisory Council Recommendation	
Kodiak/Aleutians Subsistence Regional Advisory Council Recommendation	
Bristol Bay Subsistence Regional Advisory Council Recommendation	
Yukon-Kuskokwim Delta Subsistence Regional Advisory Council Recommendation	
Western Interior Alaska Subsistence Regional Advisory Council Recommendation	
Seward Peninsula Subsistence Regional Advisory Council Recommendation	
Northwest Arctic Subsistence Regional Advisory Council Recommendation	

WP22-01 Executive Summary

Eastern Interior Alaska Subsistence Regional Advisory Council Recommendation	
North Slope Subsistence Regional Advisory Council Recommendation	
Interagency Staff Committee Comments	
ADF&G Comments	
Written Public Comments	None

DRAFT STAFF ANALYSIS
WP22-01

ISSUES

Wildlife Proposal WP22-01, submitted by the Office of Subsistence Management (OSM), requests clarification of who is and who is not a participant in a community harvest system and how that affects community and individual harvest limits.

Discussion

The proponent requests specific language clarifying who is and who is not a participant in a community harvest system and how this relates to individual and community harvest limits. While developing the framework for a community harvest system in summer 2020, Ahtna Intertribal Resource Commission (AITRC) representatives and Federal agency staff realized that current Federal regulations stipulate that any animals harvested under a community harvest limit count toward the harvest limits of every community member whether or not they choose to participate in the community harvest system. This provision is perceived as unfair to community members who are not interested in participating in a community harvest system because their individual harvest limits are met involuntarily by participants in the community harvest system.

This proposal would affect community and individual harvest limits as well as define who is and who is not a participant in a community harvest system for wildlife, fish, and shellfish, statewide. In addition to clarifying who is and who is not a participant in a community harvest system, the intent of this proposal is to allow community members who opt out of a community harvest system to retain their individual harvest limits.

Note: While the proposal as submitted listed the proposed regulations under §100.25(c)(2), the proponent clarified their intention was to create a separate section for these regulations as §100.25(c)(5).

Existing Federal Regulation

**36 CFR 242.25 and 50 CFR 100.25 Subsistence taking of fish, wildlife, and shellfish:
general regulations**

(c) Harvest limits

§____.26 Subsistence taking of wildlife

(e) Possession and transportation of wildlife.

...

(2) An animal taken under Federal or State regulations by any member of a community with an established community harvest limit for that species counts towards the community harvest

limit for that species. Except for wildlife taken pursuant to §____.10(d)(5)(iii)¹ or as otherwise provided for by this part, an animal taken as part of a community harvest limit counts toward every community member's harvest limit for that species taken under Federal or State of Alaska regulations.

Proposed Federal Regulation

§____.25 Subsistence taking of fish, wildlife, and shellfish: general regulations

(c) Harvest limits

...

(5) Fish, wildlife, or shellfish taken by a participant in a community harvest system counts toward the community harvest limit or quota for that species as well as individual harvest limits, Federal or State, for each participant in that community harvest system, however, the take does not count toward individual harvest limits, Federal or State, of any non-participant. Fish, wildlife, or shellfish taken by someone who is not a participant in a community harvest system does not count toward any community harvest limit or quota.

(i) For the purposes of this provision, all residents of the community are deemed participants in the community harvest unless the Board-approved framework requires registration as a prerequisite to harvesting or receiving any fish, wildlife, or shellfish pursuant to that community harvest, in which case only those who register are deemed participants in that community harvest.

§____.26 Subsistence taking of wildlife

(e) Possession and transportation of wildlife.

...

(2) An animal taken under Federal or State regulations by any member of a community with an established community harvest limit for that species counts toward the community harvest limit for that species. Except for wildlife taken pursuant to §____.10(d)(5)(iii) or as otherwise provided for by this part, an animal taken as part of a community harvest limit counts toward every community member's harvest limit for that species taken under Federal or State of Alaska regulations.

State of Alaska Regulations

State general regulations describing its community harvest program are in **Appendix 1**.

¹ §____.10(d)(5)(iii) *The fish and wildlife is taken by individuals or community representatives permitted a one-time or annual harvest for special purposes including ceremonies and potlatches;*

Federal Public Lands

Federal public lands comprise approximately 54% of Alaska statewide and consist of 36% U.S. Fish and Wildlife Service managed lands, 28% Bureau of Land Management managed lands, 25% National Park Service managed lands, and 11% U.S. Forest Service managed lands.

Customary and Traditional Use Determination

This is a statewide proposal for wildlife, fish, and shellfish.

Regulatory History

In 1991, after extensive public comment on the Federal Subsistence Management Program's first Temporary Rule, the Federal Subsistence Board (Board) committed to addressing community harvest limits and alternative permitting processes (56 Fed. Reg. 123, 29311 [June 26, 1991]).

In 1992, responding to approximately 40 proposals requesting community harvest systems and numerous public comments requesting alternative permitting systems, the Board supported the concept of adjusting seasons and harvest limits based on customs and traditions of a community (57 Fed. Reg. 103, 22531–2 [May 28, 1992]). The Board said specific conditions for the use of a particular harvest reporting system may be applied on a case-by-case basis and further development and refinement of guidelines for alternative permitting systems would occur as the Federal Subsistence Management Program evolved (57 Fed. Reg. 104, 22948 [May 29, 1992]). These regulations at _____.6 were modified to state that intent more clearly:

§____.6 Licenses, permits, harvest tickets, tags, and reports²

(f) The Board may implement harvest reporting systems or permit systems where:

(1) The fish and wildlife is taken by an individual who is required to obtain and possess pertinent State harvest permits, tickets, or tags, or Federal permits, harvest tickets, or tags;

(2) A qualified subsistence user may designate another qualified subsistence user to take fish and wildlife on his or her behalf;

(3) The fish and wildlife is taken by individuals or community representatives permitted a one-time or annual harvest for special purposes including ceremonies and potlatches;

(4) The fish and wildlife is taken by representatives of a community permitted to do so in a manner consistent with the community's customary and traditional practices.

In 1993, the Board adopted Proposal P93-12, which clarified that community harvest limits and individual harvest limits may not be accumulated, community harvest systems will be adopted on a

² Subsequently moved to §____.10(d)(5) *Federal Subsistence Board—Power and Duties*.

case-by-case basis and defined under unit-specific regulations, and wildlife taken by a designated hunter for another person, counts toward the individual harvest limit of the person for whom the wildlife is taken. These new regulations specified that for wildlife, after taking your individual harvest limit, you may not continue to harvest in areas outside of your community harvest area (58 Fed. Reg. 103, 31255 [June 1, 1993]). These new regulations were the following:

§____.25 Subsistence taking of wildlife³

(c) Possession and transportation of wildlife

(1) Except as specified in §____.25(c)(3)(ii) [below] or (c)(4) [trapping regulations], or as otherwise provided, no person may take a species of wildlife in any Unit, or portion of a Unit, if that person's total statewide take of that species has already been obtained under Federal and State regulations in other Units, or portions of other Units.

(2) An animal taken under Federal or State regulations by any member of a community with an established community harvest limit for that species counts toward the community harvest for that species. Except for wildlife taken pursuant to §____.6(f)(3) [above], an animal taken by an individual as part of a community harvest limit counts toward that individual's bag limit for that species taken under Federal or State regulations for areas outside of the community harvest area.

(3) Individual bag limits (i) bag limits authorized by §____.25 and in State regulations may not be accumulated; (ii) Wildlife taken by a designated hunter for another person pursuant to §____.6(f)(2) [above], counts toward the individual bag limit of the person for whom the wildlife is taken.

In 1993, “community harvest systems” were adopted by the Board simply by adding the use of designated hunters to unit-specific regulations for Unit 25 West moose and Unit 26A sheep (58 FR 103, 31252–3 [June 1, 1993]). In this way, designated harvesters and resource quotas became a common method for allocating harvests communally.

In 1996, administrative clarification was made at §____.25(c)(2) to better represent the Board's intent (61 Fed. Reg. 147, 39711 [July 30, 1996]). Before this clarification was made, a member of a community with a community harvest limit who had not taken an individual harvest limit could take an individual harvest limit after the community had met its harvest limit. The effect of the clarification was that members of community in a community harvest system can harvest only as part of the community harvest system:

³ Subsequently moved to §____.26 *Taking of wildlife*.

§____.25 Subsistence taking of wildlife

(c) Possession and transportation of wildlife

...

*(2) An animal taken under Federal or State regulations by any member of a community with an established community harvest limit for that species counts toward the community harvest for that species. Except for wildlife taken pursuant to §____.6(f)(3) [above], an animal taken ~~by an individual~~ as part of a community harvest limit counts toward ~~that individual's bag limit~~ **every community member's harvest limit** for that species taken under Federal or State regulations for areas outside of the community harvest area.*

Later, the language “or as otherwise provided for by this part” was added to the provision. The effect was to allow an exceptions to the provision if the exception was placed in regulation:

*(2) An animal taken under Federal or State regulations by any member of a community with an established community harvest limit for that species counts towards the community harvest limit for that species. Except for wildlife taken pursuant to §____.10(d)(5)(iii) **or as otherwise provided for by this part**, an animal taken as part of a community harvest limit counts toward every community member's harvest limit for that species taken under Federal or State of Alaska regulations.*

In April 2020, the Board adopted deferred Proposal WP18-19 with modification, which added a community harvest system for moose in Unit 11 and caribou and moose in Unit 13 to unit-specific regulations. The modification was to name individual communities within the Ahtna traditional use territory authorized to harvest moose in Units 11 and caribou and moose in Unit 13 as part of a community harvest system, subject to a framework established by the Board under unit-specific regulations (see Existing Federal Regulation section in Proposal WP22-36 analysis).

In July 2020, the Board approved Wildlife Special Action Request WSA20-02 with modification to: (1) name individual communities authorized to participate in the community harvest system on Federal public lands in Units 11, 12, and 13, specifically, the eight Ahtna traditional communities of Cantwell, Chistochina, Chitina, Copper Center, Gakona, Gulkana, Mentasta Lake, and Tazlina; (2) define the geographic boundaries of eligible communities as the most recent Census Designated Places established by the U.S. Census Bureau; (3) extend these actions through the end of the wildlife regulatory cycle (June 30, 2022); (4) specify that harvest reporting will take the form of reports collected from hunters by AITRC and be submitted directly to the land managers and OSM, rather than through Federal registration permits, joint State/Federal registration permits, or State harvest tickets; and (5) set the harvest quota for the species and units authorized in the community harvest system as the sum of individual harvest limits for those opting to participate in the system (OSM 2020).

In January 2021, the Board approved Wildlife Special Action WSA20-07 temporarily adding the following language to unit-specific regulations for moose and caribou in Units 11, 12, and 13:

“Animals taken by those opting to participate in this community harvest system do not count toward the harvest limits of any individuals who do not opt to participate in this community harvest system.” At this meeting, the Board also approved a community harvest system framework that describes additional details about implementation of the system (see analysis of Proposal WP22-36 Appendix 1) (OSM 2021).

Currently, the following community harvest systems are codified in Federal regulations: Lime Village for Unit 19 caribou and moose; Nikolai for Unit 19 sheep; the community of Wales for Unit 22 muskoxen; Anaktuvuk Pass for Units 24 and 26 sheep; Unit 25 black bear with a State community harvest permit; Ninilchik for Kasilof River and Kenai River community gillnets for salmon; and Cantwell, Chistochina, Chitina, Copper Center, Gakona, Gulkana, Mentasta Lake, and Tazlina for moose in Unit 11 and caribou and moose in Unit 13.

Current Events Involving the Species

Proposal WP22-36, submitted by AITRC, requests the Board adopt existing temporary regulations for regarding the community harvest system for moose and caribou in Unit 11, 12, and 13.

Cultural Knowledge and Traditional Practices

Community harvest and designated harvester provisions provide recognition of the customary and traditional practices of sharing and redistribution of harvests. A host of research supports a need for these alternative permitting systems in Federal subsistence regulations to harmonize fundamental harvesting characteristics of rural Alaskan communities with the Federal Subsistence Management Program. Family-based production is the foundation of the mixed subsistence-cash economy found in rural Alaskan communities (cf. Wolfe 1981, 1987; Wolfe and Walker 1987; Wolfe et al. 1984). Family-based production is when two or more individual households linked by kinship distribute the responsibility to harvest, process, and store wild resources based on factors such as skills and abilities, availability of able workers, sufficient income to purchase harvesting and processing technology, and other factors. Units of family-based production typically contain at least one “super-household” that produces surpluses of wild foods (Wolfe 1987). On a statewide basis, about 30% of households in a community are super-households that produce about 70% or more of the community’s wild food harvest (Sahlins 1972; Andrews 1988; Magdanz, Utermohle, and Wolfe 2002; Sumida 1989; Sumida and Andersen 1990). Conversely, 20% to 30% of households in units of family-based production did not produce enough food to feed members of that household (Sahlins 1972). Inequalities in individual and household production levels are equalized via processes of distribution (sharing and feasting) and exchange (trade and barter).

Recent studies on disparities in household food production demonstrate that super-households participate heavily in food-sharing. Wolfe et al. (2007) looked at household food production in 67 rural Alaska communities representing Aleut, Athabascan, Inupiat, Tlingit-Haida, and Yup’ik cultural groups. The majority of these communities were comprised of mostly Alaska Native households with at least one Native head of household, although communities in Southeast Alaska were ethnically mixed. The researchers found that there were household variables commonly associated with levels of

food production throughout these communities. Household variables including higher levels of income, participation in commercial fishing, and households with three or more adult males over 15 years of age were associated with higher levels of food production. Households in which there was a single or elder head of household were associated with lower levels of food production. Most remarkably, the study also demonstrated that high-producing households gave the most food to others and giving to other households may be a primary motivation for over-production. Wolfe et al. (2007) further recommended that policy and management regulations account for food production and sharing practices within Alaskan mixed subsistence-cash communities. They wrote:

The findings about the concentration of subsistence harvests also have social policy implications for the management of hunts and fisheries. Annual and daily bag limits that require that individuals or households harvest at equal levels, as is common for sport fishing and sport hunting, operate from different principles from those operating in subsistence systems. In the subsistence system, individuals and households commonly are not equivalent producers. Instead, a relatively small segment of high-producers harvest most of the fish or game. The average harvests among community households may be in line with bag and harvest limits required for conservation reasons, but the actual production is concentrated in a small number of households. Flexible regulations that allow for this type of concentrated harvest would be most compatible with the actual patterns of subsistence production (Wolfe et al. 2007:29).

Community harvest and designated harvester systems in use in the Federal Subsistence Management Program are intended to provide some flexibility in harvest regulations to make legal the activities of super-households in rural communities. Supporting the distribution of wild foods in villages allows people to continue their subsistence way of life.

Effects of the Proposal

If this proposal is adopted, then Federal regulations will recognize that the Board, when approving the framework for a community harvest system, may allow community members to choose whether they want to participate in the community harvest system or retain their individual harvest limits. The Federal regulations will specify that fish, wildlife, or shellfish harvested under a community harvest system will not count against the individual harvest limits of non-participants. Similarly, fish, wildlife, or shellfish harvested by non-participants will not count against the harvest limit set for the community harvest system. Effects to nonsubsistence uses, wildlife, fish, and shellfish, statewide, are not anticipated.

If this proposal is not adopted, then Federal regulations will continue to stipulate that any harvest within a community harvest system also counts toward the individual harvest limit of every community member regardless of whether they participate in the community harvest system. Additionally, the Board's authority to approve community harvest frameworks, and to allow community members to opt in or opt out of a community harvest, will not be clearly stated. Effects to nonsubsistence uses, wildlife, fish, and shellfish, statewide, are not anticipated.

OSM PRELIMINARY CONCLUSION

Support Proposal WP22-01.

Justification

Subsistence users and others will find these regulations less confusing and easier to use. In this way, the proposed regulatory changes provide more equitable harvest options and opportunities for subsistence users. They also prevent unintentional and unnecessary restrictions from being placed on any community members who choose not to participate in a community harvest system, and clarifies a current oversight in Federal regulation.

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APPENDIX 1

STATE OF ALASKA COMMUNITY HARVEST PROGRAM

5 AAC 92.074. Community subsistence harvest hunt areas

(a) The commissioner or the commissioner's designee may, under this section and 5 AAC 92.052, issue community-based subsistence harvest permits and harvest reports for big game species where the Board of Game (board) has established a community harvest hunt area under (b) of this section and 5 AAC 92.074.

(b) The board will consider proposals to establish community harvest hunt areas during regularly scheduled meetings to consider seasons and bag limits for affected species in a hunt area. Information considered by the board in evaluating the proposed action will include

(1) a geographic description of the hunt area;

(2) the sustainable harvest and current subsistence regulations and findings for the big game population to be harvested;

(3) a custom of community-based harvest and sharing of the wildlife resources harvested in the hunt area by any group; and

(4) other characteristics of harvest practices in the hunt area, including characteristics of the customary and traditional pattern of use found under 5 AAC 99.010(b).

(c) If the board has established a community harvest hunt area for a big game population, residents of the community or members of a group may elect to participate in a community harvest permit hunt in accordance with the following conditions:

(1) a person representing a group of 25 or more residents or members may apply to the department for a community harvest permit by identifying the community harvest hunt area and the species to be hunted, and by requesting that the department distribute community harvest reports to the individuals who subscribe to the community harvest permit; the community or group representative must

(A) provide to the department the names of residents or members subscribing to the community harvest permit and the residents' or members' hunting license numbers, permanent hunting identification card numbers, or customer service identification numbers, or for those residents or members under 18 years of age, the resident or member's birth date;

(B) ensure delivery to the department of validated harvest reports from hunters following the take of individual game animals, records of harvest information for

individual animals taken, and collected biological samples or other information as required by the department for management;

(C) provide the department with harvest information, including federal subsistence harvest information, within a specified period of time when requested, and a final report of all game taken under the community harvest permit within 15 days of the close of the hunting season or as directed in the permit; and

(D) make efforts to ensure that the applicable customary and traditional use pattern described by the board and included by the department as a permit condition, if any, is observed by subscribers including meat sharing; the applicable board finding and conditions will be identified on the permit; this provision does not authorize the community or group administrator to deny subscription to any community resident or group member;

(E) from July 1, 2014 until June 30, 2018, in the community harvest hunt area described in 5 AAC 92.074(d) , permits for the harvest of bull moose that do not meet the antler restrictions for other resident hunts in the area will be limited to one permit for every three households in the community or group. Beginning July 1, 2018, in the community harvest hunt area described in 5 AAC 92.074(d) , permits for the harvest of bull moose that do not meet the antler restrictions for other resident hunts in the area will be distributed to participants using the scoring criteria described in 5 AAC 92.070.

(2) a resident of the community or member of the group who elects to subscribe to a community harvest permit

(A) may not hold a harvest ticket or other state hunt permit for the same species where the bag limit is the same or for fewer animals during the same regulatory year; however, a person may hold harvest tickets or permits for same-species hunts in areas with a larger bag limit following the close of the season for the community harvest permit, except that in Unit 13, prior to July 1, 2018, only one caribou may be retained per household, and on or after July 1, 2018, up to two caribou may be retained per household;

(B) may not subscribe to more than one community harvest permit for a species during a regulatory year;

(C) must have in possession when hunting and taking game a community harvest report issued by the hunt administrator for each animal taken;

(D) must validate a community harvest report immediately upon taking an animal; and

(E) must report harvest and surrender validated harvest reports within five days, or sooner as directed by the department, of taking an animal and transporting it to the place of final processing for preparation for human use and provide information and biological samples required under terms of the permit;

(F) must, if the community harvest hunt area is under a Tier II permit requirement for the species to be hunted, have received a Tier II permit for that area, species, and regulatory year.

(G) participants in the community harvest hunt area described in 5 AAC 92.074(d) must commit to participation for two consecutive years. This does not apply to participants that applied in 2016 for the 2018 regulatory year.

(3) in addition to the requirements of (1) of this subsection, the community or group representative must submit a complete written report, on a form provided by the department, for the community or group participating in the community harvest hunt area described in 5 AAC 92.074(d), that describes efforts by the community or group to observe the customary and traditional use pattern described by board findings for the game populations hunted under the conditions of this community harvest permit; in completing the report, the representative must make efforts to collect a complete report from each household that is a member of the community or group that describes efforts by the household to observe the customary and traditional use pattern using the eight elements described in this paragraph; a copy of all household reports collected by the community or group representative shall be submitted to the department as a part of the representative's written report; complete reports must include information about efforts to observe the customary and traditional use pattern of the game population, as follows:

(A) Element 1: participation in a long-term, consistent pattern of noncommercial taking, use, and reliance on the game population: the number of years of taking and use of the game population; and involvement of multiple generations in the taking and use of the game population; and use of areas other than the community subsistence hunt area for harvest activities;

(B) Element 2: participation in the pattern of taking or use of the game population that follows a seasonal use pattern of harvest effort in the hunt area: the months and seasons in which noncommercial harvest activities occur in the hunt area;

(C) Element 3: participation in a pattern of taking or use of wild resources in the hunt area that includes methods and means of harvest characterized by efficiency and economy of effort and cost: costs associated with harvests; and methods used to reduce costs and improve efficiency of harvest; and number of species harvested during hunting activities;

(D) Element 4: participation in a pattern of taking or use of wild resources that occurs in the hunt area due to close ties to the area: number of years of taking and use of the game population; and involvement of multiple generations in the taking and use of the game population; and variety of harvesting activities that take place in the hunt area; and evidence of other areas used for harvest activities;

(E) Element 5: use of means of processing and preserving wild resources from the hunt area that have been traditionally used by past generations: complete listing of the parts of the harvested game that are used; and preservation methods of that game; and types of foods and other products produced from that harvest;

(F) Element 6: participation in a pattern of taking or use of wild resources from the hunt area that includes the handing down of knowledge of hunting skills, values, and lore about the hunt area from generation to generation: involvement of multiple generations in the taking and use of the game population; and evidence of instruction and training;

(G) Element 7: participation in a pattern of taking of wild resources from the hunt area in which the harvest is shared throughout the community: amount of harvest of the game population that is shared; and evidence of a communal sharing event; and support of those in need through sharing of the harvest of the game population; and

(H) Element 8: participation in a pattern that includes taking, use, and reliance on a wide variety of wild resources from the hunt area: the variety of resource harvest activities engaged in within the hunt area; and evidence of other areas used for harvest activities.

(d) Seasons for community harvest permits will be the same as those established for other subsistence harvests for that species in the geographic area included in a community harvest hunt area, unless separate community harvest hunt seasons are established. The total bag limit for a community harvest permit will be equal to the sum of the individual participants' bag limits, established for other subsistence harvests for that species in the hunt area or otherwise by the board. Seasons and bag limits may vary within a hunt area according to established

subsistence regulations for different game management units or other geographic delineations in a hunt area.

(e) Establishment of a community harvest hunt area will not constrain nonsubscribing residents of the community or members of the group from participating in subsistence harvest activities for a species in that hunt area using individual harvest tickets or other state permits authorized by regulation, nor will it require any resident of the community or member of the group eligible to hunt under existing subsistence regulations to subscribe to a community harvest permit.

(f) The department may disapprove an application for a community subsistence harvest permit from a community or group that has previously failed to comply with requirements in (c)(1) and (3) of this section. The failure to report by the community or group representative under (c)(1) and (3) of this section may result in denial of a community subsistence harvest permit during the following regulatory year. The department must allow a representative the opportunity to request a hearing if the representative fails to submit a complete report as required under (c)(1) and (3) of this section. A community or group aggrieved by a decision under this subsection will be granted a hearing before the commissioner or the commissioner's designee, if the community or group representative makes a request for a hearing in writing to the commissioner within 60 days after the conclusion of the hunt for which the person failed to provide a report. The commissioner may determine that the penalty provided under this subsection will not be applied if the community or group representative provides the information required on the report and if the commissioner determines that

(1) the failure to provide the report was the result of unavoidable circumstance; or

(2) extreme hardship would result to the community or group.

(g) A person may not give or receive a fee for the taking of game or receipt of meat under a community subsistence harvest permit.

(h) Nothing in this section authorizes the department to delegate to a community or group representative determination of the lawful criteria for selecting who may hunt, for establishing any special restrictions for the hunt and for the handling of game, and for establishing the terms and conditions for a meaningful communal sharing of game taken under a community harvest permit.

(i) In this section,

(1) "fee" means a payment, wage, gift, or other remuneration for services provided while engaged in hunting under a community harvest permit; and does not include reimbursement for actual expenses incurred during the hunting activity within the scope of the community harvest permit, or a non-cash exchange of subsistence-harvested resources.

(2) a "community" or "group" is a mutual support network of people who routinely (at least several times each year) provide each other with physical, emotional, and nutritional assistance in a multi-generational and inter/intra familial manner to assure the long-term welfare of individuals, the group, and natural resources they depend on; for purposes of this regulation, a "community" or "group" shares a common interest in, and participation in uses of, an identified area and the wildlife populations in that area, that is consistent with the customary and traditional use pattern of that wildlife population and area as defined by the board.

WP22-02 Executive Summary

General Description	Proposal WP22-02 requests to remove language from designated hunting regulations prohibiting the use of a designated hunter permit by a member of community operating under a community harvest system. <i>Submitted by the Office of Subsistence Management.</i>
Proposed Regulation	See page 248
OSM Preliminary Conclusion	Support
Southeast Alaska Subsistence Regional Advisory Council Recommendation	
Southcentral Alaska Subsistence Regional Advisory Council Recommendation	
Kodiak/Aleutians Subsistence Regional Advisory Council Recommendation	
Bristol Bay Subsistence Regional Advisory Council Recommendation	
Yukon-Kuskokwim Delta Subsistence Regional Advisory Council Recommendation	
Western Interior Alaska Subsistence Regional Advisory Council Recommendation	
Seward Peninsula Subsistence Regional Advisory Council Recommendation	

WP22-02 Executive Summary

Northwest Arctic Subsistence Regional Advisory Council Recommendation	
Eastern Interior Alaska Subsistence Regional Advisory Council Recommendation	
North Slope Subsistence Regional Advisory Council Recommendation	
Interagency Staff Committee Comments	
ADF&G Comments	
Written Public Comments	None

DRAFT STAFF ANALYSIS WP22-02

ISSUES

Wildlife Proposal WP22-02, submitted by the Office of Subsistence Management (OSM), requests to remove language from designated hunting regulations prohibiting the use of a designated hunter permit by a member of community operating under a community harvest system.

DISCUSSION

While developing the framework for a community harvest system in summer 2020, Ahtna Intertribal Resource Commission (AITRC) representatives realized that residents of communities in a community harvest system cannot designate another person to harvest on their behalf, pursuant to Federal designated hunter regulations. AITRC and Federal agency staff perceived this provision as unfair to community members who choose not to participate in a community harvest system because their options for acquiring their individual harvest limits are curtailed involuntarily.

The proponent clarified that the intent of this proposal is to allow members of a community with a community harvest system to designate a hunter to harvest on their behalf to fulfill either their individual harvest limit or to count toward the community harvest limit depending on whether or not they choose to participate in the community harvest system.

Existing Federal Regulation

36 CFR 242 and 50 CFR 100.25(e) Hunting by designated harvest permit

If you are a Federally qualified subsistence user (recipient), you may designate another Federally qualified subsistence user to take deer, moose, and caribou, and in Units 1-5, goats, on your behalf unless you are a member of a community operating under a community harvest system or unless unit-specific regulations in §____.26 preclude or modify the use of the designated hunter system or allow the harvest of additional species by a designated hunter. The designated hunter must obtain a designated hunter permit and must return a completed harvest report. The designated hunter may hunt for any number of recipients but may have no more than two harvest limits in his/her possession at any one time except for goats, where designated hunters may have no more than one harvest limit in possession at any one time, and unless otherwise specified in unit-specific regulations in §____.26.

§____.26(n)(6)(ii) Unit 6 specific regulations

(D) A federally qualified subsistence user (recipient) who is either blind, 65 years of age or older, at least 70 percent disabled, or temporarily disabled may designate another federally qualified subsistence user to take any moose, deer, black bear, and beaver on his or her behalf in Unit 6, and goat in Unit 6D, unless the recipient is a member of a community operating

under a community harvest system. The designated hunter must obtain a designated hunter permit and must return a completed harvest report. The designated hunter may hunt for any number of recipients, but may have no more than one harvest limit in his or her possession at any one time.

§ _____.26(n)(9)(iii) Unit 9 specific regulations

(E) For Units 9C and 9E only, a federally qualified subsistence user (recipient) of Units 9C and 9E may designate another federally qualified subsistence user of Units 9C and 9E to take bull caribou on his or her behalf unless the recipient is a member of a community operating under a community harvest system. The designated hunter must obtain a designated hunter permit and must return a completed harvest report and turn over all meat to the recipient. There is no restriction on the number of possession limits the designated hunter may have in his/her possession at any one time.

(F) For Unit 9D, a federally qualified subsistence user (recipient) may designate another federally qualified subsistence user to take caribou on his or her behalf unless the recipient is a member of a community operating under a community harvest system. The designated hunter must obtain a designated hunter permit and must return a completed harvest report. The designated hunter may hunt for any number of recipients but may have no more than four harvest limits in his/her possession at any one time.

§ _____.26(n)(10) Unit 10 specific regulations

(iii) In Unit 10—Unimak Island only, a federally qualified subsistence user (recipient) may designate another federally qualified subsistence user to take caribou on his or her behalf unless the recipient is a member of a community operating under a community harvest system. The designated hunter must obtain a designated hunter permit and must return a completed harvest report. The designated hunter may hunt for any number of recipients but may have no more than four harvest limits in his/her possession at any one time.

§ _____.26(n)(22)(iii) Unit 22 specific regulations

(E) A federally qualified subsistence user (recipient) may designate another federally qualified subsistence user to take musk oxen on his or her behalf unless the recipient is a member of a community operating under a community harvest system. The designated hunter must get a designated hunter permit and must return a completed harvest report. The designated hunter may hunt for any number of recipients in the course of a season, but have no more than two harvest limits in his/her possession at any one time, except in Unit 22E where a resident of Wales or Shishmaref acting as a designated hunter may hunt for any number of recipients, but have no more than four harvest limits in his/her possession at any one time.

§ _____.26(n)(23)(iv) Unit 23 specific regulations

(D) For the Baird and DeLong Mountain sheep hunts—A federally qualified subsistence user (recipient) may designate another federally qualified subsistence user to take sheep on his or her behalf unless the recipient is a member of a community operating under a community harvest system. The designated hunter must obtain a designated hunter permit and must return a completed harvest report. The designated hunter may hunt for only one recipient in the course of a season and may have both his and the recipients' harvest limits in his/her possession at the same time.

(F) A federally qualified subsistence user (recipient) may designate another federally qualified subsistence user to take musk oxen on his or her behalf unless the recipient is a member of a community operating under a community harvest system. The designated hunter must get a designated hunter permit and must return a completed harvest report. The designated hunter may hunt for any number of recipients, but have no more than two harvest limits in his/her possession at any one time.

§ _____.26(n)(26)(iv) Unit 26 specific regulations

(C) In Kaktovik, a federally qualified subsistence user (recipient) may designate another federally qualified subsistence user to take sheep or musk ox on his or her behalf unless the recipient is a member of a community operating under a community harvest system. The designated hunter must obtain a designated hunter permit and must return a completed harvest report. The designated hunter may hunt for any number of recipients but may have no more than two harvest limits in his/her possession at any one time.

(D) For the DeLong Mountain sheep hunts—A federally qualified subsistence user (recipient) may designate another federally qualified subsistence user to take sheep on his or her behalf unless the recipient is a member of a community operating under a community harvest system. The designated hunter must obtain a designated hunter permit and must return a completed harvest report. The designated hunter may hunt for only one recipient in the course of a season and may have both his and the recipient's harvest limits in his/her possession at the same time.

Proposed Federal Regulation

§ _____.25(e) Hunting by designated harvest permit

If you are a Federally qualified subsistence user (recipient), you may designate another Federally qualified subsistence user to take deer, moose, and caribou, and in Units 1-5, goats, on your behalf ~~unless you are a member of a community operating under a community harvest system or~~ unless unit-specific regulations in §100.26 preclude or modify the use of the designated hunter system or allow the harvest of additional species by a designated hunter. The designated hunter must obtain a designated hunter permit and must return a completed harvest report. The designated hunter may hunt for any number of recipients but may have no

more than two harvest limits in his/her possession at any one time except for goats, where designated hunters may have no more than one harvest limit in possession at any one time, and unless otherwise specified in unit-specific regulations in §100.26.

§ _____.26(n)(6)(ii) Unit 6 specific regulations

(D) A federally qualified subsistence user (recipient) who is either blind, 65 years of age or older, at least 70 percent disabled, or temporarily disabled may designate another federally qualified subsistence user to take any moose, deer, black bear, and beaver on his or her behalf in Unit 6, and goat in Unit 6D, ~~unless the recipient is a member of a community operating under a community harvest system.~~ The designated hunter must obtain a designated hunter permit and must return a completed harvest report. The designated hunter may hunt for any number of recipients, but may have no more than one harvest limit in his or her possession at any one time.

§ _____.26(n)(9)(iii) Unit 9 specific regulations

(E) For Units 9C and 9E only, a federally qualified subsistence user (recipient) of Units 9C and 9E may designate another federally qualified subsistence user of Units 9C and 9E to take bull caribou on his or her behalf ~~unless the recipient is a member of a community operating under a community harvest system.~~ The designated hunter must obtain a designated hunter permit and must return a completed harvest report and turn over all meat to the recipient. There is no restriction on the number of possession limits the designated hunter may have in his/her possession at any one time.

(F) For Unit 9D, a federally qualified subsistence user (recipient) may designate another federally qualified subsistence user to take caribou on his or her behalf ~~unless the recipient is a member of a community operating under a community harvest system.~~ The designated hunter must obtain a designated hunter permit and must return a completed harvest report. The designated hunter may hunt for any number of recipients but may have no more than four harvest limits in his/her possession at any one time.

§ _____.26(n)(10) Unit 10 specific regulations

(iii) In Unit 10—Unimak Island only, a federally qualified subsistence user (recipient) may designate another federally qualified subsistence user to take caribou on his or her behalf ~~unless the recipient is a member of a community operating under a community harvest system.~~ The designated hunter must obtain a designated hunter permit and must return a completed harvest report. The designated hunter may hunt for any number of recipients but may have no more than four harvest limits in his/her possession at any one time.

§ _____.26(n)(22)(iii) Unit 22 specific regulations

(E) A federally qualified subsistence user (recipient) may designate another federally qualified subsistence user to take musk oxen on his or her behalf ~~unless the recipient is a member of a community operating under a community harvest system~~. The designated hunter must get a designated hunter permit and must return a completed harvest report. The designated hunter may hunt for any number of recipients in the course of a season, but have no more than two harvest limits in his/her possession at any one time, except in Unit 22E where a resident of Wales or Shishmaref acting as a designated hunter may hunt for any number of recipients, but have no more than four harvest limits in his/her possession at any one time.

§ _____.26(n)(23)(iv) Unit 23 specific regulations

(D) For the Baird and DeLong Mountain sheep hunts—A federally qualified subsistence user (recipient) may designate another federally qualified subsistence user to take sheep on his or her behalf ~~unless the recipient is a member of a community operating under a community harvest system~~. The designated hunter must obtain a designated hunter permit and must return a completed harvest report. The designated hunter may hunt for only one recipient in the course of a season and may have both his and the recipients' harvest limits in his/her possession at the same time.

(F) A federally qualified subsistence user (recipient) may designate another federally qualified subsistence user to take musk oxen on his or her behalf ~~unless the recipient is a member of a community operating under a community harvest system~~. The designated hunter must get a designated hunter permit and must return a completed harvest report. The designated hunter may hunt for any number of recipients, but have no more than two harvest limits in his/her possession at any one time.

§ _____.26(n)(26)(iv) Unit 26 specific regulations

(C) In Kaktovik, a federally qualified subsistence user (recipient) may designate another federally qualified subsistence user to take sheep or musk ox on his or her behalf ~~unless the recipient is a member of a community operating under a community harvest system~~. The designated hunter must obtain a designated hunter permit and must return a completed harvest report. The designated hunter may hunt for any number of recipients but may have no more than two harvest limits in his/her possession at any one time.

(D) For the DeLong Mountain sheep hunts—A federally qualified subsistence user (recipient) may designate another federally qualified subsistence user to take sheep on his or her behalf ~~unless the recipient is a member of a community operating under a community harvest system~~. The designated hunter must obtain a designated hunter permit and must return a completed harvest report. The designated hunter may hunt for only one recipient in the course of a season and may have both his and the recipient's harvest limits in his/her possession at the same time.

Existing State Regulation

The State of Alaska provides for the transfer of harvest limits from one person to another through its proxy hunting program (5 AAC 92.011; see **Appendix 1**). **Table 1** is a side-by-side comparison of the State’s proxy system to the Federal designated hunter system.

Table 1. State of Alaska Proxy System compared to Federal Designated Hunter System.

State of Alaska Proxy System	Federal Subsistence Management Program Designated Hunter System
Applies where there is an open State harvest season.	Applies to Federal public lands when there is an open Federal harvest season.
Applies to caribou, deer, and moose.	Applies to caribou, deer, moose, and in Units 1–5, goats, as well as other species identified in unit-specific regulations.
Available to a hunter who is blind, physically or developmentally disabled (requires physician’s affidavit), or 65 years of age or older	Available to Federally qualified subsistence users.
Either the recipient or the hunter may apply for the authorization.	Recipient obtains a permit or harvest ticket and designates another Federally qualified subsistence user to harvest on his/her behalf. Designated hunter obtains a Federal designated hunter permit.
No person may be a proxy for more than one recipient at a time.	A person may hunt for any number of recipients, but may have no more than two harvest limits in his/her possession at any one time.
Antler destruction is required.	No antler destruction is required.

Federal Public Lands

Federal public lands comprise approximately 54% of Alaska statewide and consist of 36% U.S. Fish and Wildlife Service managed lands, 28% Bureau of Land Management managed lands, 25% National Park Service managed lands, and 11% U.S. Forest Service managed lands.

Customary and Traditional Use Determination

This is a statewide proposal regarding wildlife.

Regulatory History

In 1991, after extensive public comment on the Federal Subsistence Management Program’s first Temporary Rule, the Federal Subsistence Board committed to addressing community harvest limits and alternative permitting processes (56 Fed. Reg. 123, 29411 [June 26, 1991]).

In 1992, responding to approximately 40 proposals requesting community harvest systems and numerous public comments requesting alternative permitting systems, the Board supported the concept of adjusting seasons and harvest limits based on customs and traditions of a community (57 Fed. Reg. 103, 22531–2 [May 28, 1992]). The Board said specific conditions for the use of a particular harvest reporting system may be applied on a case-by-case basis and further development and refinement of guidelines for alternative permitting systems would occur as the Federal Subsistence Management Program evolved (57 Fed. Reg. 104, 22948 [May 29, 1992]). These regulations at _____.6 were modified to state that intent more clearly:

§ _____.6 Licenses, permits, harvest tickets, tags, and reports¹

(f) The Board may implement harvest reporting systems or permit systems where:

(1) The fish and wildlife is taken by an individual who is required to obtain and possess pertinent State harvest permits, tickets, or tags, or Federal permits, harvest tickets, or tags;

(2) A qualified subsistence user may designate another qualified subsistence user to take fish and wildlife on his or her behalf;

(3) The fish and wildlife is taken by individuals or community representatives permitted a one-time or annual harvest for special purposes including ceremonies and potlatches;

(4) The fish and wildlife is taken by representatives of a community permitted to do so in a manner consistent with the community's customary and traditional practices.

In 1993, the Board adopted Proposal P93-12, which clarified that community harvest limits and individual harvest limits may not be accumulated, community harvest systems will be adopted on a case-by-case basis and defined under unit-specific regulations, and wildlife taken by a designated hunter for another person, counts toward the individual harvest limit of the person for whom the wildlife is taken. These new regulations specified that for wildlife, after taking your individual harvest limit, you may not continue to harvest in areas outside of your community harvest area (58 Fed. Reg. 103, 31255 [June 1, 1993]). These new regulations were the following:

§ _____.25 Subsistence taking of wildlife²

(c) Possession and transportation of wildlife

(1) Except as specified in § _____.25(c)(3)(ii) [below] or (c)(4) [trapping regulations], or as otherwise provided, no person may take a species of wildlife in any Unit, or portion of a Unit, if that person's total statewide take of that species has already been obtained under Federal and State regulations in other Units, or portions of other Units.

¹ Subsequently moved to § _____.10(d) *Federal Subsistence Board—Power and Duties.*

² Subsequently moved to § _____.26 *Taking of wildlife.*

(2) An animal taken under Federal or State regulations by any member of a community with an established community harvest limit for that species counts toward the community harvest for that species. Except for wildlife taken pursuant to §____.6(f)(3) [above], an animal taken by an individual as part of a community harvest limit counts toward that individual's bag limit for that species taken under Federal or State regulations for areas outside of the community harvest area.

(3) Individual bag limits (i) bag limits authorized by §____.25 and in State regulations may not be accumulated; (ii) Wildlife taken by a designated hunter for another person pursuant to §____6(f)(2) [above], counts toward the individual bag limit of the person for whom the wildlife is taken.

In 1993, community harvest strategies were adopted by the Board simply by adding the use of designated hunters into unit-specific regulations for Unit 25 West moose and Unit 26C sheep (58 Fed. Reg. 103, 31252–3 [June 1, 1993]). In this way, designated harvesters and resource quotas became a common method for allocating harvests communally.

Unit 25(D)(West)—. . . 1 antlered moose by a Federal registration permit. Alternate permits allowing for designated hunters are available to qualified applicants who reside in Beaver, Birch Creek, or Stevens Village. Moose hunting on public land in this portion of Unit 25(D)(West) is closed at all times except for residents of Beaver, Birch Creek and Stevens Village during seasons identified above. The moose season will be closed when 30 antlered moose have been harvested in the entirety of Unit 25D West (58 Fed. Reg. 103, 31287 [June 1, 1993]).

Unit 26(C)—3 sheep per year; the Aug. 10–Sept 20 season is restricted to 1 ram with 7/8 cur1 horn or larger. A State registration permit is required for the Oct. 1–Apr. 30 season, except for residents of the City of Kaktovik. Kaktovik residents may harvest sheep in accordance with a Federal community harvest strategy for Unit 26(C) which provides for the take of up to two bag limits of 3 sheep by designated hunter. Procedures for Federal permit issuance and community reporting will be mutually developed by Kaktovik and Federal representatives prior to the season opening. Open season: Aug. 10–Sept. 30 and Oct. 1–Apr. 30 (58 Fed. Reg. 103, 31289 [June 1, 1993]).

In 1994, the Board rejected four proposals concerning the use of designated hunters to harvest wildlife for others and redirected staff to work with Regional Advisory Councils and develop regulations for the 1995/96 regulatory year that address designated harvesters on a state-wide basis (59 Fed. Reg. 29033, June 3, 1994).

In October 1994, a Designated Hunter Task Force published its report describing four options for alternative permitting systems (OSM 1994).

In 1996, administrative clarification was made at §____.25(c)(2) to better represent the Board’s intent (61 Fed. Reg. 147, 39711 [July 30, 1996]). Before this clarification was made, a member of a community with a community harvest limit who had not taken an individual harvest limit could take an individual harvest limit after the community had met its harvest limit. The effect of the clarification was that members of community in a community harvest system can harvest only as part of the community harvest system:

§____.25 Subsistence taking of wildlife

(c) Possession and transportation of wildlife

...

*(2) An animal taken under Federal or State regulations by any member of a community with an established community harvest limit for that species counts toward the community harvest for that species. Except for wildlife taken pursuant to §____.6(f)(3) [above], an animal taken ~~by an individual~~ as part of a community harvest limit counts toward ~~that individual’s bag limit~~ **every community member’s harvest limit** for that species taken under Federal or State regulations for areas outside of the community harvest area.*

Later, the language “or as otherwise provided for by this part” was added to the provision. The effect was to allow an exception to the provision if the exception was placed in regulation:

*(2) An animal taken under Federal or State regulations by any member of a community with an established community harvest limit for that species counts towards the community harvest limit for that species. Except for wildlife taken pursuant to §____.10(d)(5)(iii) **or as otherwise provided for by this part**, an animal taken as part of a community harvest limit counts toward every community member's harvest limit for that species taken under Federal or State of Alaska regulations.*

In 2001, administrative clarifications were added to regulations at §____.25(e) *Hunting by designated harvest permit*. New provisions stipulated that a designated hunter recipient may not be a member of a community operating under a community harvest system, reflecting §____.25(c)(2), above (66 Fed. Reg. 122, 33758 [June 25, 2001]). These new provisions were the following:

§____.25 Subsistence taking of fish, wildlife, and shellfish: general regulations³

(e) Hunting by designated harvest permit

(1) As allowed by §____.26 [Subsistence taking of wildlife], if you are a Federally-qualified subsistence user, you (beneficiary) may designate another Federally-qualified

³ §____.25 was formerly *Subsistence taking of wildlife* that was moved to §____.26 to make room for these *general regulations*.

subsistence user to take wildlife on your behalf unless you are a member of a community operating under a community harvest system.

(2) The designated hunter must obtain a designated hunter permit and must return a completed harvest report.

(3) You may not designate more than one person to take or attempt to take fish on your behalf at one time.

(4) The designated hunter may hunt for any number of recipients but may have no more than two harvest limits in his/her possession at any one time, unless otherwise specified in §____.26.

After 1994, the Board recommenced adopting designated harvester provisions in unit-specific regulations through 2002.

Prior to 2003, the Board adopted designated hunter regulations for 21 unit-specific hunts. In 2003, the Board established the statewide designated hunter system, based on Regional Advisory Council recommendations, providing opportunities for subsistence users to receive deer, caribou, and moose from designated hunters, subject to unit-specific regulations to include other species and special provisions (68 Fed. Reg. 38466 [June 27, 2003]). Where Councils agreed with these general statewide provisions, then unit-specific regulations were rescinded unless they included other species or special provisions.

In April 2020, the Board adopted deferred Proposal WP18-19 with modification to establish a community harvest system moose in Units 11 and caribou and moose in Unit 13 that will be administered by the Ahtna Intertribal Resource Commission (AITRC). The modification was to name individual communities within the Ahtna traditional use territory authorized to harvest caribou and moose in Unit 13 and moose in Unit 11 as part of a community harvest system, subject to a framework established by the Board under unit specific regulations. While developing the framework for the community harvest system over the summer of 2020, AITRC representatives and Federal agency staff realized that current Federal regulations prevent the use of designated hunters by any community member whether or not they choose to participate in the community harvest system (OSM 2020). In January 2021, the Board approved the community harvest system framework that describes additional details about implementation of the system (OSM 2021a).

Harvest History

The Designated Hunter Permit database is maintained at the Office of Subsistence Management. **Table 2** describes the use of the designated hunter system since 2002 when the permit system was implemented. Designated hunters have reported harvesting caribou, deer, moose, sheep, goats, and muskoxen. Most of the reported harvest by designated hunters is for deer (84%, or 4,717,), and most of those are taken from Southeast Alaska (Units 1–5). Designated hunter harvests of caribou account for 12% (658 caribou), and moose 4% (212 moose).

Table 2. Use of Federal designated hunter system based on completed harvest reports 2002-2020 cumulative, by species and management unit (OSM 2021b).

Management Unit	Number of Animals Harvested by Designated Hunters 2002-2020
Caribou	
9	4
12	109
13	477
17	8
18	6
20	31
Unknown	23
Total	658
Dall Sheep	
23	3
Deer	
1	57
2	146
3	1,178
4	22
6	0
8	10
2	727
4	1,836
5	11
6	3
8	672
Unknown	55
Total	4,717
Moose	
1	9
3	9
5	34
6	36
11	7
12	1
13	67
15	18
18	3
19	12
21	2
24	5
25	1
26	2
Unknown	6
Total	212

Continued on next page.

Management Unit	Number of Animals Harvested by Designated Hunters 2002-2020
<i>Continued from previous page.</i>	
Management Unit	Number of Animals Harvested by Designated Hunters 2002-2020
Mountain Goats	
1	1
4	5
Total	6
Muskoxen	
22	3

Cultural Knowledge and Traditional Practices

See the Cultural Knowledge and Traditional Practices section in the Proposal WP22-01 analysis.

Effects of the Proposal

If this proposal is adopted, then Federal designated hunter regulations will no longer preclude members of communities with a community harvest system from designating another person to take wildlife on their behalf to fulfill either their individual harvest limit or count toward the community harvest limit, pursuant to Federal designated hunter regulations. Effects to nonsubsistence uses or wildlife are not anticipated.

If this proposal is not adopted, then Federal designated hunting regulations will continue to preclude residents of communities in a community harvest system from designating another person to take wildlife on their behalf, even though some residents may choose not to participate in the community harvest system. Effects to nonsubsistence uses or wildlife are not anticipated.

OSM PRELIMINARY CONCLUSION

Support Proposal WP22-02.

Justification

The intent of the proposed regulation change is to allow members of a community with a community harvest system to designate another person to harvest on their behalf to meet either their individual harvest limit or count toward the community harvest limit, pursuant to Federal designated harvester regulations. Therefore, the statements in general and unit-specific regulations addressed by this proposal, WP22-02, will no longer be relevant and should be removed. Additionally, these regulatory changes will provide more equitable harvest options and opportunities for subsistence users.

LITERATURE CITED

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OSM. 2021a. Federal Subsistence Board News Release, February 3, 2021: Federal Subsistence Board approves changes to subsistence fishing regulations. <https://www.doi.gov/subsistence/news/general/federal-subsistence-board-approves-changes-subsistence-fishing-0>. Retrieved July 14, 2021. Office of Subsistence Management, USFWS, Anchorage, AK.

OSM 2021b. Federal permit system. Electronic database. Office of Subsistence Management, USFWS, Anchorage, AK.

APPENDIX 1

STATE PROXY HUNTING REGULATIONS

5 AAC 92.011. Taking of game by proxy

(a) A resident hunter (the proxy) holding a valid resident hunting license may take specified game for another resident (the beneficiary) who is blind, physically or developmentally disabled, or 65 years of age or older, as authorized by AS 16.05.405 and this section.

(b) Both the beneficiary and the proxy must possess copies of a completed proxy authorization form issued by the department. The completed authorization must include

(1) names, addresses, hunting license numbers, and signatures of the proxy and the beneficiary;

(2) number of the required harvest ticket report or permit harvest report;

(3) effective dates of the authorization; and

(4) signature of the issuing agent.

(c) A proxy authorization may not be used to take a species of game for a beneficiary for more than the length of the permit hunt season listed on the proxy authorization or for the maximum length of the species general season listed on the proxy authorization.

(d) A person may not be a proxy

(1) for more than one beneficiary at a time;

(2) more than once per season per species in Unit 13;

(3) for Tier II Caribou in Unit 13, unless the proxy is a Tier II permittee;

(4) for more than one person per regulatory year for moose in Units 20(A) and 20(B).

(e) Repealed 7/26/97.

(f) A proxy who takes game for a beneficiary shall, as soon as practicable, but not later than 30 days after taking game, personally deliver all parts of the game removed from the field to the beneficiary.

(g) Except for reporting requirements required by (h) of this section, a proxy who hunts or kills game for a beneficiary is subject to all the conditions and requirements that would apply to the beneficiary if the beneficiary personally hunted or killed the game.

(h) Reporting requirements for proxy and beneficiary are as follows:

(1) if the proxy takes the bag limit for the beneficiary, the proxy shall provide the beneficiary with all the information necessary for the beneficiary to complete and return the harvest ticket report or permit harvest report, as required by regulation, to the department within the time periods specified for such reports; the beneficiary is responsible for the timely return of the harvest ticket and permit harvest reports;

(2) if the proxy is unsuccessful or does not take the bag limit for the beneficiary, the proxy shall provide the beneficiary with any information necessary for the beneficiary to complete and return the harvest ticket report or permit harvest report, as required by regulation, to the department within the time periods specified for such reports; the beneficiary is responsible for the timely return of the harvest ticket and permit harvest reports;

(3) the department may require the proxy to complete a proxy hunter report issued with the authorization form and mail it to the department within 15 days after the effective period of the authorization.

(i) A person may not give or receive remuneration in order to obtain, grant, or influence the granting of a proxy authorization.

(j) A proxy participating in a proxy hunt must remove at least one antler from the skull plate or cut the skull plate in half, on an antlered animal, for both the proxy's animal and the beneficiary's animal before leaving the kill site, unless the department has established a requirement that complete antlers and skull plates must be submitted to the department.

(k) Proxy hunting under this section is only allowed for

(1) caribou;

(2) deer;

(3) moose in Tier II hunts, any-bull hunts, and antlerless moose hunts; and

(4) emperor geese.

(l) Notwithstanding (k) of this section, proxy hunting is prohibited in the following hunts where the board has determined that the use of the proxy would allow circumvention of harvest restrictions specified by the board, or where the board has otherwise directed:

(1) Unit 20(E) moose registration hunts and Units 20(B), 20(D), 20(E), 20(F), and 25(C) Fortymile and White Mountains caribou registration hunts;

(2) Units 21(B), 21(C), 21(D), and 24 moose hunts if either the proxy or the beneficiary holds a drawing permit for Units 21(B), 21(C), 21(D), or 24 moose hunts;

(3) Units 9(A) and 9(B), unit 9(C), that portion within the Alagnak River drainage, and units 17(B), 17(C), 18, 19(A), and 19(B) caribou hunts from August 1 through October 31;

(4) Unit 5(A) deer hunts from October 15 through October 31;

(5) Unit 20(D), within the Delta Junction Management Area, the moose drawing hunt for qualified disabled veterans.

ANNUAL REPORT REPLY PROCESS REVIEW

During the Federal Subsistence Board's (Board) August 2021 work session, the Interagency Staff Committee (ISC) briefed the Board on the annual report reply process and possible revisions to improve response to Regional Advisory Council (Council) concerns. The Board reviewed and discussed the annual report reply process and agreed to add this topic to the Councils Fall meeting agendas for Council input on suggested revisions.

ANILCA, Section 805 authorizes the Councils to prepare an annual report containing information related to current and future subsistence uses of fish and wildlife populations, an evaluation of current and future subsistence needs for these populations, a strategy for their management, and recommendations related to policies, standards, guidelines, and regulations to implement the strategy. These reports are invaluable as they provide the Board with a broad, holistic picture of local resource conditions, and the needs and challenges facing communities across rural Alaska. With this knowledge, the Board can make more informed decisions.

Historically, the Federal Subsistence Management Program has strived to provide responses to every topic listed in annual reports, regardless of the Board's ability to address the issues raised. While all topics are important to Board understanding of local conditions, many are on issues over which the Board has no regulatory authority, and some of the same or similar topics are often repeated in subsequent years with no resolution. ANILCA does not require replies to annual reports from the Councils and currently the Code of Federal Regulations state that the Board "consider the reports and recommendations of the Regional Councils." For these and other reasons, it is unclear if Board responses on all annual report topics are helpful to the Councils and warrant the use of often very limited staff capacity.

One way to address Council reports and recommendations would be to change the process of how the Board responds to Council issues. Process revisions could include that Councils consider letter writing as the most appropriate means for requesting a response to topics of concern, and that the annual report process be streamlined as a mechanism for informing the Board of local conditions and needs. This revision would allow for more substantive and timely responses from the Board on topics most critical to the Councils. Under this scenario, Councils could ask their Coordinators to write a letter to the Board if there are annual report topics to which they are specifically requesting a response. Any other topics, such as those outside the regulatory authority of the Board, can be addressed to the appropriate Federal agency staff at Council meetings, or Councils can write letters requesting a response directly from them, thus streamlining the response process and encouraging direct agency communications with the Councils.

These suggested revisions are not intended to diminish the ability of the Councils to report to the Board on topics of concern, and Councils will still receive responses when requested from the Board. At this time, the Board is seeking input from the Councils on these suggested changes to the annual report process. Council feedback on this issue is critical as the Board evaluates how to make the reply process more efficient and responsive. The Board will consider Council input on the annual report reply process at its winter work session at the end of January 2022.

ANNUAL REPORTS

Background

ANILCA established the Annual Reports as the way to bring regional subsistence uses and needs to the Secretaries' attention. The Secretaries delegated this responsibility to the Board. Section 805(c) deference includes matters brought forward in the Annual Report.

The Annual Report provides the Councils an opportunity to address the directors of each of the four Department of Interior agencies and the Department of Agriculture Forest Service in their capacity as members of the Federal Subsistence Board. The Board is required to discuss and reply to each issue in every Annual Report and to take action when within the Board's authority. In many cases, if the issue is outside of the Board's authority, the Board will provide information to the Council on how to contact personnel at the correct agency. As agency directors, the Board members have authority to implement most of the actions which would effect the changes recommended by the Councils, even those not covered in Section 805(c). The Councils are strongly encouraged to take advantage of this opportunity.

Report Content

Both Title VIII Section 805 and 50 CFR §100.11 (Subpart B of the regulations) describe what may be contained in an Annual Report from the councils to the Board. This description includes issues that are not generally addressed by the normal regulatory process:

- an identification of current and anticipated subsistence uses of fish and wildlife populations within the region;
- an evaluation of current and anticipated subsistence needs for fish and wildlife populations from the public lands within the region;
- a recommended strategy for the management of fish and wildlife populations within the region to accommodate such subsistence uses and needs related to the public lands; and
- recommendations concerning policies, standards, guidelines, and regulations to implement the strategy.

Please avoid filler or fluff language that does not specifically raise an issue of concern or information to the Board.

Report Clarity

In order for the Board to adequately respond to each Council's annual report, it is important for the annual report itself to state issues clearly.

- If addressing an existing Board policy, Councils should please state whether there is something unclear about the policy, if there is uncertainty about the reason for the policy, or if the Council needs information on how the policy is applied.
- Council members should discuss in detail at Council meetings the issues for the annual report and assist the Council Coordinator in understanding and stating the issues clearly.

- Council Coordinators and OSM staff should assist the Council members during the meeting in ensuring that the issue is stated clearly.

Thus, if the Councils can be clear about their issues of concern and ensure that the Council Coordinator is relaying them sufficiently, then the Board and OSM staff will endeavor to provide as concise and responsive of a reply as is possible.

Report Format

While no particular format is necessary for the Annual Reports, the report must clearly state the following for each item the Council wants the Board to address:

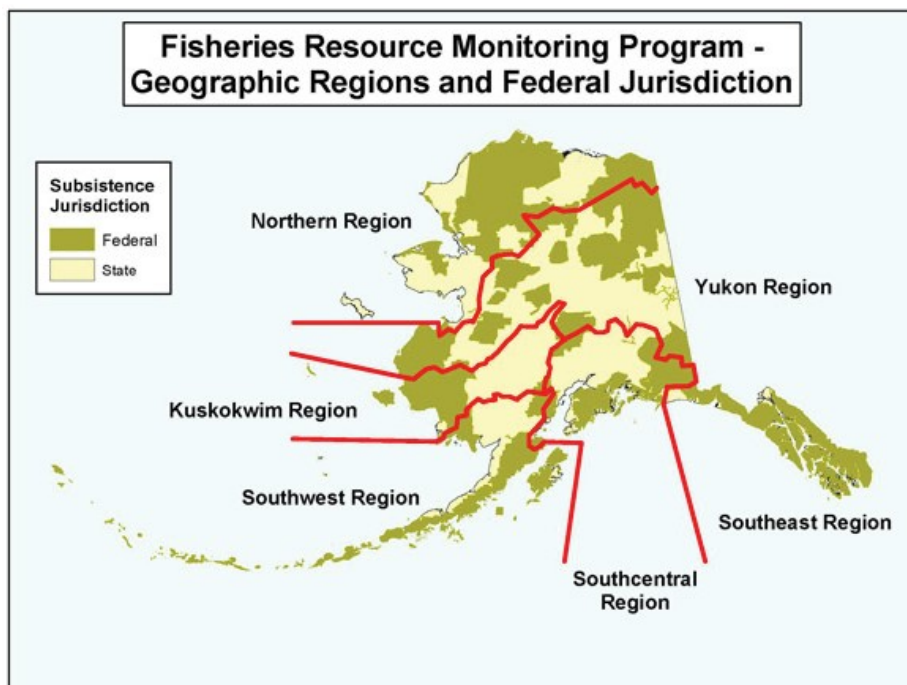
1. Numbering of the issues,
2. A description of each issue,
3. Whether the Council seeks Board action on the matter and, if so, what action the Council recommends, and
4. As much evidence or explanation as necessary to support the Council's request or statements relating to the item of interest.

FISHERIES RESOURCE MONITORING PROGRAM

BACKGROUND

Section 812 of the Alaska National Interest Lands Conservation Act (ANILCA) directs the Departments of the Interior and Agriculture, cooperating with other Federal agencies, the State of Alaska, and Alaska Native and other rural organizations, to research fish and wildlife subsistence uses on Federal public lands and to seek data from, consult with, and make use of the knowledge of local residents engaged in subsistence. When the Federal government assumed responsibility for management of subsistence fisheries on Federal public lands and waters in Alaska in 1999, the Secretaries of the Interior and Agriculture made a commitment to increase the quantity and quality of information available to manage subsistence fisheries, to increase quality and quantity of meaningful involvement by Alaska Native and other rural organizations, and to increase collaboration among Federal, State, Alaska Native, and rural organizations. The Fisheries Resource Monitoring Program (Monitoring Program) is a collaborative, interagency, interdisciplinary approach to enhance fisheries research and data in Alaska and effectively communicate information needed for subsistence fisheries management on Federal public lands and waters.

Every two years, the Office of Subsistence Management announces a funding opportunity for investigation plans addressing subsistence fisheries on Federal public lands. The 2022 Notice of Funding Opportunity focused on priority information needs developed by the Subsistence Regional Advisory Councils with input from strategic plans and subject matter specialists. The Monitoring Program is administered through regions to align with stock, harvest, and community issues common to a geographic area. The six Monitoring Program regions are shown below.



Strategic plans sponsored by the Monitoring Program have been developed by workgroups of fisheries managers, researchers, Subsistence Regional Advisory Councils, and by other stakeholders for three of the six regions: Southeast, Southcentral (excluding Cook Inlet Area), and Southwest Alaska, and for Yukon and Kuskokwim drainages whitefish (available for viewing at the Monitoring Program webpage at <https://www.doi.gov/subsistence/frmp/plans>). These plans identify prioritized information needs for each major subsistence fishery. Individual copies of plans are available from the Office of Subsistence Management by calling (907) 786-3888 or toll Free: (800) 478-1456 or by email subsistence@fws.gov. An independent strategic plan was completed for the Kuskokwim Region for salmon in 2006 and can be viewed at the Alaska-Yukon-Kuskokwim Sustainable Salmon Initiative website at <https://www.aykssi.org/salmon-research-plans/>.

Investigation plans are reviewed and evaluated by Office of Subsistence Management and U.S. Forest Service staff, and then scored by the Technical Review Committee. The Technical Review Committee's function is to provide evaluation, technical oversight, and strategic direction to the Monitoring Program. Each investigation plan is scored on the following five criteria: strategic priority, technical and scientific merit, investigator ability and resources, partnership and capacity building, and cost/benefit.

Project executive summaries are assembled into a draft 2022 Fisheries Resources Monitoring Plan. The draft plan is distributed for public review and comment through Subsistence Regional Advisory Council meetings, beginning in September 2021. The Federal Subsistence Board will review the draft plan and will accept written and oral comments at its January 2022 meeting. The Federal Subsistence Board forwards its comments to the Assistant Regional Director of the Office of Subsistence Management. Final funding approval lies with the Assistant Regional Director of the Office of Subsistence Management. Investigators are subsequently notified in writing of the status of their proposals.

HISTORICAL OVERVIEW

The Monitoring Program was first implemented in 2000 with an initial allocation of \$5 million. Since 2000, a total of \$127 million has been allocated for the Monitoring Program to fund a total of 494 projects (**Figure 1** and **Figure 2**).

During each two-year funding cycle, the Monitoring Program budget funds ongoing multi-year projects (2, 3, or 4 years) as well as new projects. Budget guidelines are established by geographic region (**Table 1**). The regional guidelines were developed using six criteria that included level of risk to species, level of threat to conservation units, amount of subsistence needs not being met, amount of information available to support subsistence management, importance of a species to subsistence harvest, and level of user concerns regarding subsistence harvest. Budget guidelines provide an initial target for planning; however, they are not final allocations and are adjusted annually as needed (**Figure 3**).

Figure 1. Monitoring Program Funds Distributed, by Organization Type, Since 2000

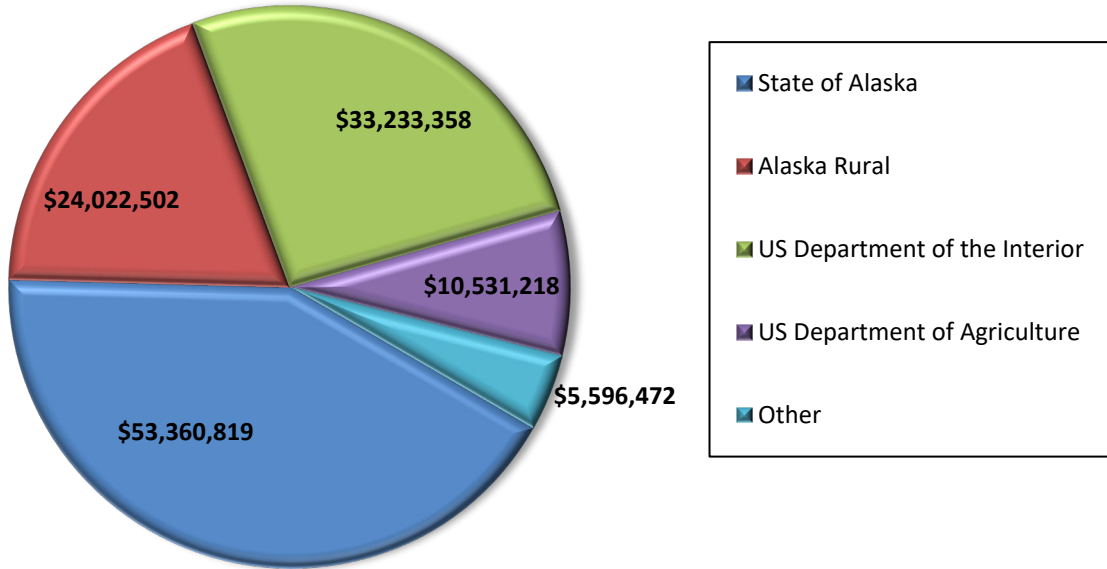


Figure 2. Number of Monitoring Program Projects Funded, by Organization Type, since 2000

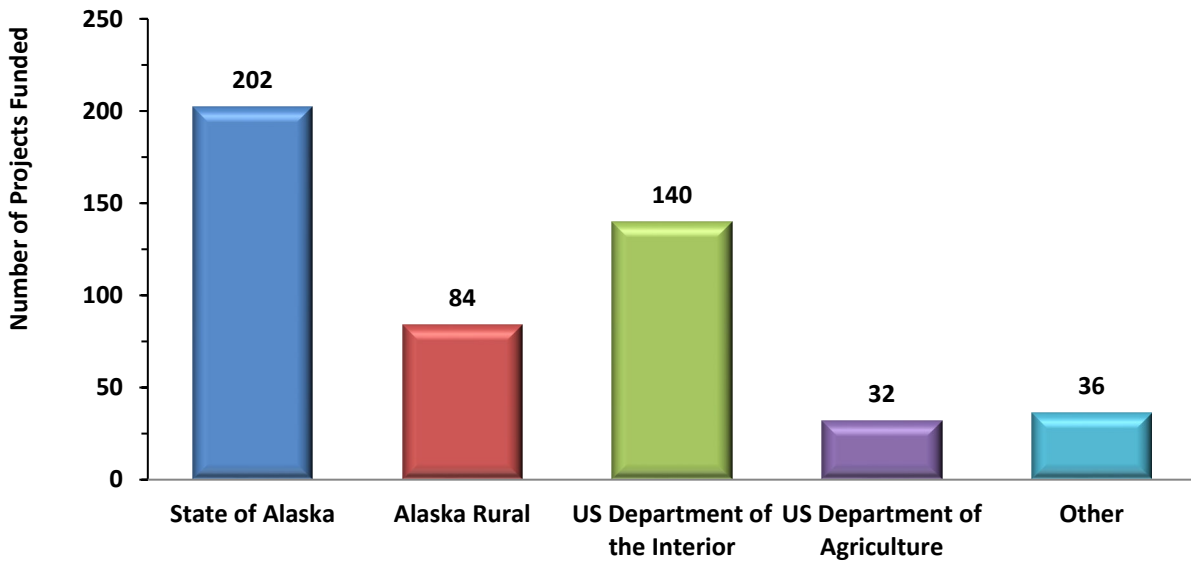
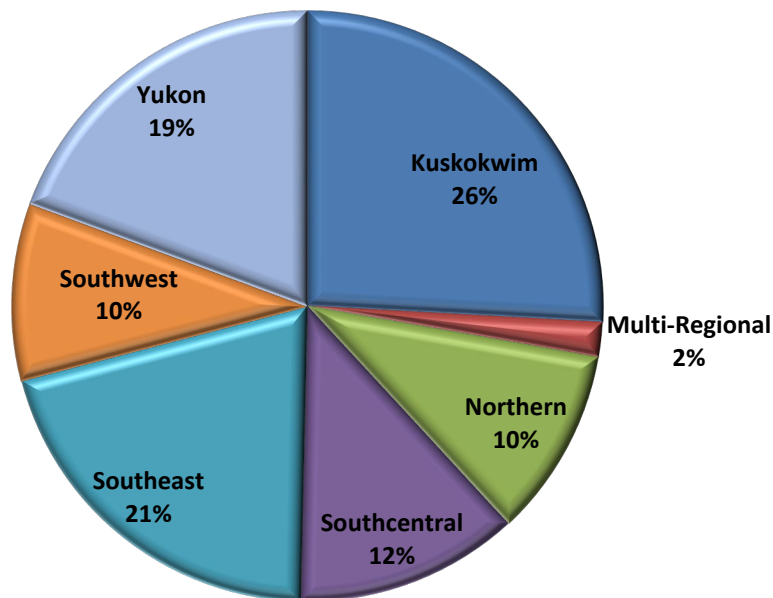


Table 1. Regional allocation guideline for Fisheries Resource Monitoring Program Funds.

Region	U.S. Department of the Interior Funds	U.S. Department of Agriculture Funds
Northern Alaska	17%	0%
Yukon Drainage	29%	0%
Kuskokwim Drainage	29%	0%
Southwest Alaska	15%	0%
Southcentral Alaska	5%	33%
Southeast Alaska	0%	67%
Multi-Regional	5%	0%

Figure 3. Percentage of Monitoring Program Funding Distributed to Each Region since 2000



The following three broad categories of information that are solicited for the Monitoring Program: (1) harvest monitoring, (2) traditional ecological knowledge, and (3) stock status and trends. Projects that combine these approaches are encouraged. Definitions of these three categories of information are listed below.

Harvest monitoring studies provide information on numbers and species of fish harvested, locations of harvests, and gear types used. Methods used to gather information on subsistence harvest patterns may include harvest calendars, mail-in questionnaires, household interviews, subsistence permit reports, and telephone interviews.

Traditional ecological knowledge studies are investigations of local knowledge directed at collecting and analyzing information on a variety of topics such as the sociocultural aspects of subsistence, fish ecology, species identification, local names, life history, taxonomy, seasonal movements, harvests, spawning and rearing areas, population trends, environmental observations, and traditional management systems. Methods used to document traditional ecological knowledge include ethnographic fieldwork, key respondent interviews with local experts, place name mapping, and open-ended surveys.

Stock status and trends studies provide information on abundance and run timing; age, size, and sex composition; migration and geographic distribution; survival of juveniles or adults; stock production; genetic stock identification; and mixed stock analyses. Methods used to gather information on stock status and trends include aerial and ground surveys, test fishing, towers, weirs, sonar, video, genetics, mark-recapture, and telemetry.

PROJECT EVALUATION PROCESS

The Monitoring Program prioritizes high quality projects that address critical subsistence and conservation concerns. Projects are selected for funding through an evaluation and review process that is designed to advance projects that are strategically important for the Federal Subsistence Management Program, technically sound, administratively competent, promoting partnerships and capacity building, and are cost effective. Projects are first evaluated by a panel called the Technical Review Committee. This committee is a standing interagency committee of senior technical experts. The Technical Review Committee reviews, evaluates, and makes recommendations about proposed projects that are consistent with the mission of the Monitoring Program. Fisheries and Anthropology staff from the Office of Subsistence Management provide support for the Technical Review Committee. Recommendations from the Technical Review Committee provide the basis for further comments from Subsistence Regional Advisory Councils, the public, the Interagency Staff Committee, and the Federal Subsistence Board, with final approval of the Monitoring Plan by the Assistant Regional Director of the Office of Subsistence Management.

To be considered for funding under the Monitoring Program, a proposed project must have a nexus to Federal subsistence fishery management. Proposed projects must have a direct association to a Federal subsistence fishery, and the subsistence fishery or fish stocks in question must occur in or pass-through waters within or adjacent to Federal public lands in Alaska (National Wildlife Refuges, National Forests, National Parks and Preserves, National Conservation Areas, National Wild and Scenic River Systems, National Petroleum Reserves, and National Recreation Areas). A complete project package must be submitted on time and must address the following five specific criteria to be considered a high-quality project.

1. **Strategic Priorities**—Studies should be responsive to information needs identified in the 2022 Priority Information Needs available at the Monitoring Program webpage at <https://www.doi.gov/subsistence/frmp/funding>. All projects must have a direct linkage to Federal public lands and/or waters to be eligible for funding under the Monitoring Program. To assist in evaluation of submittals for projects previously funded under the Monitoring Program, investigators must summarize project findings in their investigation plans. This summary should clearly and concisely document project performance, key findings, and uses of collected information for Federal subsistence management. Projects should address the following topics to demonstrate links to strategic priorities:

- Federal jurisdiction—The extent of Federal public waters in or nearby the project area
- Direct subsistence fisheries management implications
- Conservation mandate—Threat or risk to conservation of species and populations that support subsistence fisheries
- Potential impacts on the subsistence priority—Risk that subsistence harvest users’ goals will not be met
- Data gaps—Amount of information available to support subsistence management and how a project answers specific questions related to these gaps
- Role of the resource—Contribution of a species to a subsistence harvest (number of villages affected, pounds of fish harvested, miles of river) and qualitative significance (cultural value, unique seasonal role)
- Local concern—Level of user concerns over subsistence harvests (upstream vs. downstream allocation, effects of recreational use, changes in fish abundance and population characteristics)

2. **Technical-Scientific Merit**—Technical quality of the study design must meet accepted standards for information collection, compilation, analysis, and reporting. To demonstrate technical and scientific merit, applicants should describe how projects will:

- Advance science
- Answer immediate subsistence management or conservation concerns
- Have rigorous sampling and/or research designs
- Have specific, measurable, realistic, clearly stated, and achievable (attainable within the proposed project period) objectives
- Incorporate traditional knowledge and methods

Data collection, compilation, analysis, and reporting procedures should be clearly stated. Analytical procedures should be understandable to the non-scientific community. To assist in evaluation of submittals for continuing projects previously funded under the Monitoring

Program, summarize project findings and justify continuation of the project, placing the proposed work in context with the ongoing work being accomplished.

3. ***Investigator Ability and Resources***—Investigators must show they are capable of successfully completing the proposed project by providing information on the ability (training, education, experience, and letters of support) and resources (technical and administrative) they possess to conduct the work. Investigators that have received funding in the past, via the Monitoring Program or other sources, are evaluated and scored on their past performance, including fulfillment of meeting deliverable and financial accountability deadlines. A record of failure to submit reports or delinquent submittal of reports will be taken into account when rating investigator ability and resources.
4. ***Partnership and Capacity Building***—Investigators must demonstrate that capacity building has already reached the communication or partnership development stage during proposal development and, ideally, include a strategy to develop capacity building to higher levels, recognizing, however, that in some situations higher level involvement may not be desired or feasible by local organizations.

Investigators are requested to include a strategy for integrating local capacity development in their study plans or research designs. Investigators should inform communities and regional organizations in the area where work is to be conducted about their project plans. They should also consult and communicate with local communities to ensure that local knowledge is utilized and concerns are addressed. Investigators and their organizations should demonstrate their ability to maintain effective local relationships and commitment to capacity building. This includes a plan to facilitate and develop partnerships so that investigators, communities, and regional organizations can pursue and achieve the most meaningful level of involvement. Proposals demonstrating multiple, highly collaborative efforts with rural community members or Alaska Native Organizations are encouraged.

Successful capacity building requires developing trust and dialogue among investigators, local communities, and regional organizations. Investigators need to be flexible in modifying their work plan in response to local knowledge, issues, and concerns, and must also understand that capacity building is a reciprocal process in which all participants share and gain valuable knowledge. The reciprocal nature of the capacity building component(s) should be clearly demonstrated in proposals. Investigators are encouraged to develop the highest level of community and regional collaboration that is practical including joining as co-investigators.

Capacity can be built by increasing the technical capabilities of rural communities and Alaska Native organizations. This can be accomplished via several methods, including increased technical experience for individuals and the acquisition of necessary gear and equipment. Increased technical experience would include all areas of project management including logistics, financial accountability, implementation, and administration. Other examples may include internships or providing opportunities within the project for outreach, modeling, sampling design,

or project specific training. Another would be the acquisition of equipment that could be transferred to rural communities and tribal organizations upon the conclusion of the project.

A “meaningful partner” is a partner that is actively engaged in one or more aspects of project design, logistics, implementation and reporting requirements. Someone who simply agrees with the concept or provides a cursory look at the proposal is not a meaningful partner.

5. **Cost/Benefit**—This criterion evaluates the reasonableness (what a prudent person would pay) of the funding requested to provide benefits to the Federal Subsistence Management Program. Benefits could be tangible or intangible. Examples of tangible outcomes include data sets that directly inform management decisions or fill knowledge gaps and opportunities for youth or local resident involvement in monitoring, research and/or resource management efforts. Examples of possible intangible goals and objectives include enhanced relationships and communications between managers and communities, partnerships and collaborations on critical resource issues, and potential for increased capacity within both communities and agencies.

Applicants should be aware that the Government shall perform a “best value analysis” and the selection for award shall be made to the applicant whose proposal is most advantageous to the Government. The Office of Subsistence Management strives to maximize program efficiency by encouraging cost sharing, partnerships, and collaboration.

POLICY AND FUNDING GUIDELINES

Several policies have been developed to aid in implementing funding. These policies include:

- Projects of up to four years in duration may be considered
- Proposals requesting Monitoring Program funding that exceeds \$215,000 in any one year are not eligible for funding
- Studies must not duplicate existing projects
- Long term projects will be considered on a case-by-case basis

Activities that are not eligible for funding include:

- Habitat protection, mitigation, restoration, and enhancement
- Hatchery propagation, restoration, enhancement, and supplementation
- Contaminant assessment, evaluation, and monitoring
- Projects where the primary or only objective is outreach and education (for example, science camps, technician training, and intern programs), rather than information collection

The rationale behind these policy and funding guidelines is to ensure that existing responsibilities and efforts by government agencies are not duplicated under the Monitoring Program. Land management or regulatory agencies already have direct responsibility, as well as specific programs, to address these activities. However, the Monitoring Program may fund research to determine how these activities affect Federal subsistence fisheries or fishery resources.

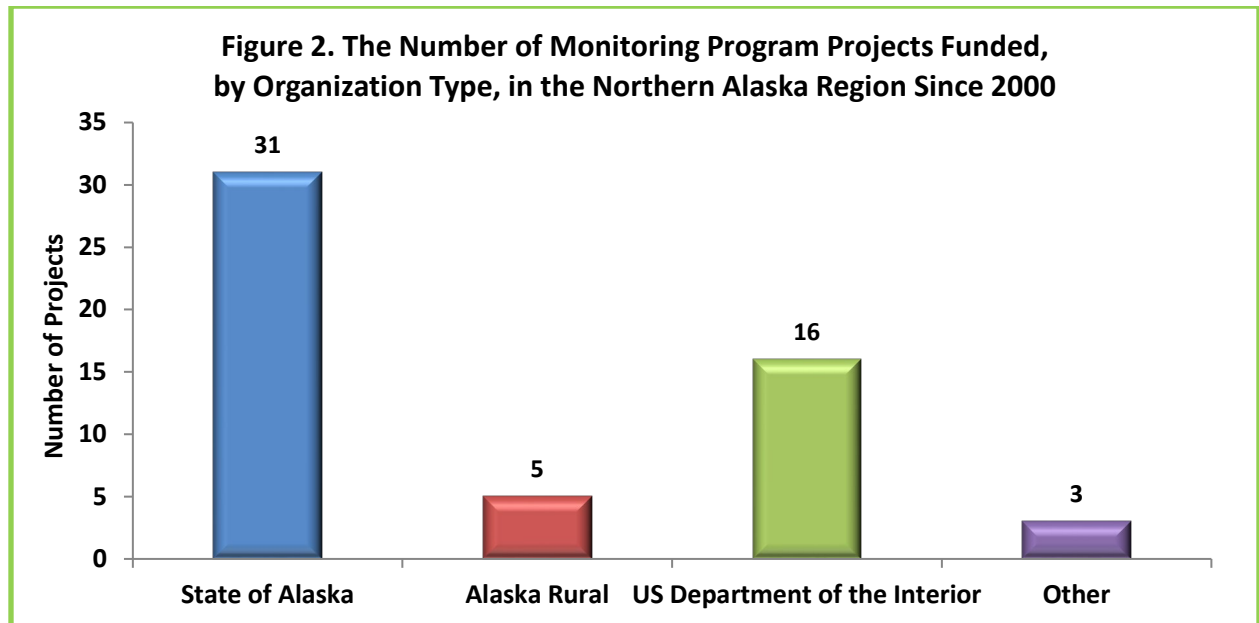
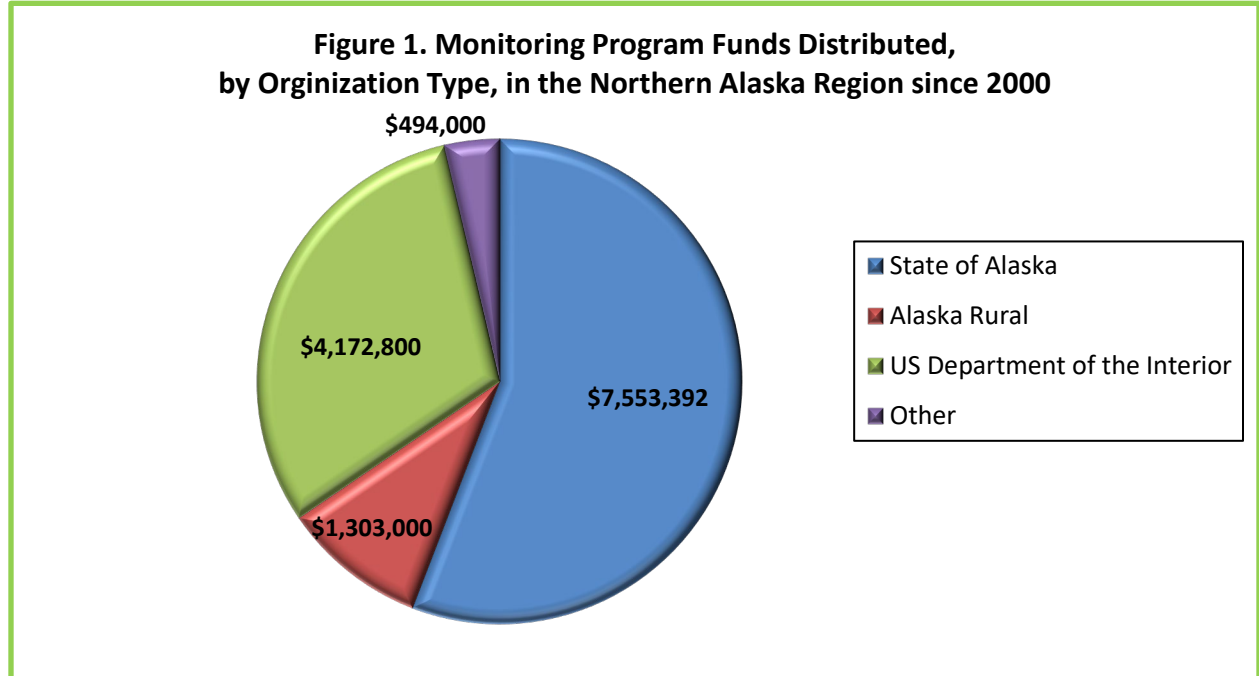
The Monitoring Program may fund assessments of key Federal subsistence fishery stocks in decline or that may decline due to climatological, environmental, habitat displacement, or other drivers; however, applicants must show how this knowledge would contribute to Federal subsistence fisheries management. Similarly, the Monitoring Program may legitimately fund projects that assess whether migratory barriers (e.g., falls, beaver dams) significantly affect spawning success or distribution; however, it would be inappropriate to fund projects to build fish passes, remove beaver dams, or otherwise alter or enhance habitat.

2022 FISHERIES RESOURCE MONITORING PLAN

For 2022, a total of 42 investigation plans were received and all are considered eligible for funding. For 2022, the Department of the Interior, through the U.S. Fish and Wildlife Service, will provide an anticipated \$1.5 million in funding for new projects. The U.S. Department of Agriculture, through the U.S. Forest Service, will provide an anticipated \$750,000 in funding.

**FISHERIES RESOURCE MONITORING PROGRAM
NORTHERN ALASKA REGION OVERVIEW**

Since the inception of the Monitoring Program in 2000, a total of 55 projects have been undertaken in the Northern Alaska Region costing \$13.5 million (**Figure 1**). Of these, the State of Alaska received funds to conduct 31 projects, the Department of the Interior conducted 16 projects, Alaska Rural Organizations conducted five projects, and other organizations conducted three projects (**Figure 2**). See **Appendix 1** for more information on Northern Alaska Region projects completed since 2000.



PRIORITY INFORMATION NEEDS

The 2022 Notice of Funding Opportunity for the Northern Alaska Region identified the following 16 priority information needs:

- Chinook, Chum and Coho Salmon abundance estimate for Boston, Fish, Pargon and Wagon Wheel Rivers.
- Summer and Fall Chum Salmon abundance estimates for the Agiapuk River drainage including American River and Igloo Creek.
- Chinook Salmon abundance estimate for the Unalakleet River.
- Chinook, Chum and Coho abundance estimate for the Pikmiktalik River.
- Changes in Grayling, Dolly Varden and Sheefish populations related to climate change.
- Inventory and baseline data of fish assemblages in major rivers tied to subsistence use in Northwest Alaska. When possible, applicants are encouraged to include fisheries proximal to the communities of Shishmaref, Buckland, Deering, Kivalina, Point Hope and villages along Kobuk and Noatak rivers.
- Changes in species compositions, abundance, migration timing, especially of Dolly Varden, Lake Trout and whitefish species in the Northwest Arctic, to address changing availability of subsistence fishery resources.
- Evaluate changing salmon distribution, abundance, migration, and timing in river drainages of Kotzebue Sound (the Noatak and Kobuk River Drainages).
- Identifying spawning areas, critical habitat and range expansion in major rivers tied to subsistence for Broad Whitefish, Least Cisco, Northern Pike, salmon, Grayling, Dolly Varden and Sheefish in the Northwest Alaska Region.
- Evaluate changes in water temperature in major river systems associated with subsistence fishery resources in the Northwest Arctic Region and how these changes will affect subsistence resources.
- The effects of expanding beaver populations and range on subsistence fisheries in the Northwest Arctic Region. Include effects of dams on fish migration and effects of changes to water quality on fish health.
- Using traditional ecological knowledge and harvest monitoring, document new fish species and changes in abundance, size, timing, and distribution of existing fish species, and impacts of new or expanding species on other fish that are important to subsistence in the North Slope Region.

- Document and investigate the possible causes of mold, disease, and discoloration on Broad Whitefish in the Colville River. Investigators are encouraged to draw on both stock status and trends and traditional ecological knowledge research methods.
- Effects of climate change, including late freeze-up on subsistence access, practices, and fish preservation, and the impact of these changes on continuity of traditions and food security for communities on the North Slope. Studies including Ikpikpuk River are of particular interest.
- Monitoring and documentation of changing subsistence fish harvest and consumption, as well as subsistence user concerns, in the community of Nuiqsut.
- Baseline fish habitat and water quality monitoring (especially temperature, dissolved oxygen, and silt) on the rivers and tributaries important to subsistence fishing for communities of the North Slope Region. Investigators are encouraged to include overwintering areas.

AVAILABLE FUNDS

Federal Subsistence Board guidelines direct initial distribution of funds among regions. Regional budget guidelines provide an initial target for planning. For 2022, the U.S. Department of the Interior and U.S. Department of Agriculture, through the U.S. Fish and Wildlife Service and the U.S. Forest Service, will provide an anticipated \$2.25 million in funding statewide for new projects.

ROLE OF THE TECHNICAL REVIEW COMMITTEE

The mission of the Monitoring Program is to identify and provide information needed to sustain subsistence fisheries on Federal public lands for rural Alaskans through a multidisciplinary and collaborative program. It is the responsibility of the Technical Review Committee to develop the strongest possible Monitoring Plan for each region and across the entire state.

For the 2022 Monitoring Program, four proposals were submitted for the Northern Alaska Region. The Technical Review Committee evaluated and scored each proposal on Strategic Priority, Technical and Scientific Merit, Investigator Ability and Resources, Partnership and Capacity Building, and Cost/Benefit (**Table 1**). These scores remain confidential. An executive summary for each proposal submitted to the 2022 Monitoring Program for the Northern Alaska Region is in **Appendix 2**.

Table 1. Projects submitted for the Northern Alaska Region, 2022 Monitoring Program, including total funds requested and average annual funding requests.

Project Number	Title	Total Project Request	Average Annual Request
22-101	Kotzebue Sound Sheefish-Describing Coastal Movement, Temperature Preference, and Potential Range Expansion	\$232,911	\$77,637
22-103	Unalakleet River Chinook Salmon Escapement Assessment-Continuation	\$706,329	\$176,582
22-104	Selawik River Inconnu Spawning Population Age Structure Evaluation and Spawner Recruitment Response to a 2004 Permafrost Thaw Slump	\$281,534	\$93,844
22-150	Traditional Ecological Knowledge of Salmon in the River Drainages of Kotzebue Sound	\$282,091	\$141,046
Total		\$1,502,865	\$489,109

TECHNICAL REVIEW COMMITTEE JUSTIFICATIONS FOR PROJECT SCORES

Project Number: 22-101

Project Title: Kotzebue Sound Sheefish-Describing Coastal Movement, Temperature Preference, and Potential Range Expansion

Technical Review Committee Justification: This proposal addresses parts of three 2022 priority needs for the Northern Alaska Region. The proposal is directly linked to subsistence resources in multiple Federal conservation units, and Sheefish are an important subsistence resource for the people living in the communities of this region. The investigator proposes using satellite tags to gain knowledge about Sheefish behavior in fresh, brackish and saltwater. This information will build upon previous work and has the potential to help managers and scientists better understand the relationship between Sheefish and the coastal habitat in the Kotzebue area. The investigator has experience working in Northwestern Alaska and will be engaging the Native Village of Kotzebue’s Environmental Program Director in an advisory capacity and to assist with local hire. The budget is reasonable for a project of this magnitude and the National Park Service will be contributing travel funds to reduce the overall project costs.

Project Number: 22-103

Project Title: Unalakleet River Chinook Salmon Escapement Assessment-Continuation

Technical Review Committee Justification: This proposal directly addresses a priority information need: Assessment of Unalakleet River Chinook Salmon escapement. The investigator requests continuation funding of a long-term project to monitor Chinook Salmon escapement using a resistance board-floating weir in the Unalakleet River. Chinook Salmon stocks have been depressed since 2000, and Federal waters of the Unalakleet River have been closed to the retention of Chinook Salmon since 2009. Estimates from the weir provide Chinook Salmon daily passage and run timing which is used to make inseason and post-season fishery management decisions. In addition, this information was reviewed by

the Seward Peninsula Regional Subsistence Advisory Council and Federal Subsistence Board to support a continued closure of Federal public waters of the Unalakleet River to the retention of Chinook Salmon. While the principal investigator is new to the project, the two co-investigator have been on the project since its inception and all the investigator are experienced fisheries biologists. The project represents a working a partnership between State and Federal agencies and a regional organization. The Native Village of Unalakleet is no longer a co-investigator resulting in a loss of local representation on the project. The cost of the proposal is in line with previous years funding and is typical for a large weirs (320 ft. weir). The investigators are leveraging outside resources from Alaska Department of Fish and Game and Bureau of Land Management to reduce the overall cost of operating the weir.

Project Number: 22-104

Project Title: Selawik River Inconnu Spawning Population Age Structure Evaluation and Spawner Recruitment Response to a 2004 Permafrost Thaw Slump

Technical Review Committee Justification: The proposed work addresses the 2022 priority information need, Changes in Grayling, Dolly Varden and Inconnu populations related to Climate Change. The work focuses on an important subsistence Inconnu fishery associated with Selawik National Wildlife Refuge. The investigators request continued funding to study the effect of a permafrost slump located about 40 km upstream from the Inconnu spawning area in the Selawik River. In 2004, the permafrost slump began emitting large amounts of sediment into the river. In 2010, the investigators began monitor the annual abundance and age structure of the Selawik River Inconnu spawning population to determine if the sediment emitted from the permafrost slump resulted in an identifiable impact to the Inconnu population over time. Through that research the data did not establish an effect of the permafrost slump on Inconnu recruitment. Information collected from this project would confirm the previous study and may be useful on a wide scale for interpreting the effect of climate change on other white fish populations. Capacity building consists of engaging a local hire via a contract, youth involvement and consulting with stakeholders. This project propose involving two local youth internships (university and high school) with the goal of introducing young individuals to fisheries resource management. Investigators have successfully completed multiple years of work funded through Monitoring Plan. They have a history of fisheries research in the Arctic and have been involved in many Inconnu studies.

Project Number: 22-150

Project Title: Traditional Ecological Knowledge of Salmon in the River Drainages of Kotzebue Sound

Technical Review Committee Justification: This two-year project will contribute to understanding of the effects of environmental change on salmon in the Northwest Arctic, as well as the shifting capacity for subsistence users in Ambler, Noorvik, and Kotzebue to harvest them. This project would directly address the 2022 Priority Information Need: “Evaluate changing salmon distribution, abundance, migration, and timing in river drainages of Kotzebue Sound (the Noatak and Kobuk River Drainages).” The investigators would have strengthened their response to the Priority Information Need by combining TEK with Stock Status and Trends work. Federal nexus is provided by the Noatak National Preserve and Kobuk Valley National Park. Ms. Mikow will rely on well-established social science methods, employing participant

observation and semi-structured interviews that integrate mapping. Local research assistants will be hired to assist with fieldwork and community meetings, as well as presentations on research to the communities. A letter of support was provided from the Native Village of Kotzebue, which has a history of coordinating regional research.

APPENDIX 1
PROJECTS FUNDED IN THE NORTHERN ALASKA REGION SINCE 2000

Project Number	Project Title	Investigators
North Slope		
00-002	Eastern NS Dolly Varden Spawning and Over-wintering Assessment	ADF&G, USFWS
01-113	Eastern NS Dolly Varden Genetic Stock ID Stock Assessment	ADF&G, USFWS
01-101	Eastern NS (Kaktovik) Subsistence Fish Harvest Assessment	AD&FG, KIC
02-050	NS (Anaktuvuk Pass) Subsistence Fish Harvest Assessment	ADF&G, NSB, AKP
03-012	SST of Arctic Cisco and Dolly Varden in Kaktovik Lagoons	USFWS
04-103	North Slope Dolly Varden Sonar Feasibility	USFWS
06-108	North Slope Dolly Varden Aerial Monitoring	ADF&G
07-105	North Slope Dolly Varden Genetic Baseline Completion	USFWS
07-107	Hulahula River Dolly Varden Sonar Enumeration	USFWS
12-154	North Slope Salmon Fishery HM/TEK	ADF&G
14-103	Beaufort Sea Dolly Varden Dispersal Patterns	UAF
16-101	Arctic Dolly Varden Telemetry	USFWS
16-106	Aerial Monitoring of Dolly Varden Overwintering Abundance	ADF&G, USFWS
16-107	Chandler Lake Trout Abundance Estimation	ADF&G
16-152	Meade River Changes in Subsistence Fisheries	ADF&G
18-100	Colville River Grayling Habitat and Migration	ADF&G
Northwest Arctic		
00-001	Northwestern Dolly Varden and Arctic Char Stock Identification	ADF&G, USFWS
00-020	Hotham Inlet Kotzebue Winter Subsistence Sheefish Harvest	ADF&G
01-136	Northwestern Alaska Dolly Varden Genetic Diversity	ADF&G, USFWS
01-137	Northwestern Alaska Dolly Varden Spawning Stock Assessment	ADF&G
02-023	Qaluich Nigingnaqtuat: Fish That We Eat	AJ
02-040	Kotzebue Sound Whitefish Traditional Knowledge	ADF&G, MQ
03-016	Selawik River Harvest ID, Spring and Fall Subsistence Fisheries	USFWS
04-101	Selawik River Inconnu Spawning Abundance	USFWS
04-102	Selawik Refuge Whitefish Migration and Habitat Use	USFWS
04-109	Wulik River Dolly Varden Wintering Stocks	USFWS, ADF&G
04-157	Exploring Approaches to Sustainable Fisheries Harvest Assessment	ADF&G, MQ

Project Number	Project Title	Investigators
07-151	Northwest Alaska Subsistence Fish Harvest Patterns and Trends	ADF&G, MQ
08-103	Kobuk River Sheefish Spawning and Run Timing	ADF&G, USFWS
10-100	Selawik Drainage Sheefish Winter Movement Patterns	UAF, USGS, USFWS, NVK
10-104	Hotham Inlet Kotzebue Winter Subsistence Sheefish Harvest	USFWS
10-152	Climate Change and Subsistence Fisheries in Northwest Alaska	UAF
12-100	Selawik River Sheefish Spawning Abundance and Age Structure	USFWS
12-103	Kobuk River Sheefish Spawning Frequency, Location, and Run Timing	ADF&G, USFWS
12-104	Noatak River Dolly Varden Evaluation of Overwintering Populations	ADF&G, NPS
12-153	NW AK Key Subsistence Fisheries Harvest Monitoring Program	ADF&G, MQ
14-104	Selawik R Inconnu Spawning Population Abundance	USFWS
16-103	Kobuk River Dolly Varden Genetics	ADF&G, USFWS
16-104	Selawik Sheefish Age Structure and Spawning Population	USFWS
16-105	Kobuk River Sheefish Abundance	ADF&G
18-101	Kobuk River Dolly Varden Genetic Diversity	ADF&G, USFWS
20-101	Life-history variability and mixed-stock analysis of Dolly Varden in the Noatak River.	ADF&G
20-150	Traditional Ecological Knowledge of Dolly Varden and whitefish species in Northwest Alaska	ADF&G
Seward Peninsula		
01-224	Nome Sub-district Subsistence Salmon Survey	ADF&G, KI
02-020	Pikmiktalik River Salmon Site Surveys and Enumeration	USFWS, NPS, STB, KI
04-105	Pikmiktalik River Chum and Coho Salmon Enumeration	KI
04-151	Customary Trade of Fish in the Seward Peninsula Area	ADF&G, KI
05-101	Unalakleet River Coho Salmon Distribution and Abundance	ADF&G, NVU
06-101	Pikmiktalik River Chum and Coho Salmon Enumeration	KI
10-102	Unalakleet River Chinook Salmon Abundance Estimate	ADF&G, BLM, NSEDG
10-151	Local Ecological Knowledge of Non-Salmon Fish in the Bering Strait	KI
14-101	Unalakleet River Chinook Salmon Abundance Estimate	NSEDG, NVU ADF&G, BLM
18-103	Unalakleet River Chinook Salmon Escapement Assessment	NSEDG, NVU ADF&G, BLM
20-100	Fish Assemblages and Genetic Stock Determination of Salmon in Bering Land Bridge National Preserve	NPS

Abbreviations used for investigators are: **ADF&G** = Alaska Department of Fish and Game, **AJ** = Anore Jones, **AKP** = City of Anaktuvuk Pass, **BLM** = Bureau of Land Management, **KI** = Kawarek Inc., **KIC** = Kaktovik Inupiat Corp., **MQ** = Maniilaq, **NSEDG** = Norton Sound Economic Development Corporation, **NVU** = Native Village of Unalakleet, **NSB** = North Slope Borough, **STB** = Stebbins IRA, **SWCA** = SWCA Environmental Consultants, **UAF** = University Alaska Fairbanks, **USFWS** = U.S. Fish and Wildlife Service, and **USGS** = U.S. Geological Survey.

**APPENDIX 2
EXECUTIVE SUMMARIES**

The following executive summaries were written by principal investigators and were submitted to the Office of Subsistence Management as part of proposal packages. They may not reflect the opinions of the Office of Subsistence Management or the Technical Review Committee.

Project Number:	22-101
Title:	Kotzebue Sound Sheefish-Describing Coastal Movement, Temperature Preference, and Potential Range Expansion
Geographic Region:	Northern Alaska Region
Data Type:	Stock Status and Trends
Principal Investigator:	Dr. Kevin Fraley, Wildlife Conservation Society
Co-investigator:	None
Project Cost:	2022: \$154,515 2023: \$58,796 2024: \$19,600 2025: \$0
Total Cost:	\$232,911

Issue: Our project will address the sheefish portion of three Priority Information Needs identified by the 2022 Fisheries Resource Monitoring Program through information gathered in Subsistence Regional Advisory Committee meetings:

- 1) Changes in Arctic grayling, Dolly Varden, and sheefish populations related to Climate Change.
- 2) Changes in species compositions, abundance, migration timing, especially of Dolly Varden, lake trout and whitefish species in the Northwest Arctic, to address changing availability of subsistence fishery resources.
- 3) Identifying spawning areas, critical habitat and range expansion in major rivers tied to subsistence for broad whitefish, least cisco, northern pike, salmon, Arctic grayling, Dolly Varden and sheefish in the Northwest Alaska Region.

Based on the multiple 2022 Priority Information Needs that address sheefish (or whitefish) populations, migrations, and range expansions, it is clear that more information is needed to answer questions posed by local fishermen, the Northwest Arctic Subsistence Regional Advisory Council, and fisheries researchers about sheefish ecology in Northwest Alaska. Given this need, we have designed a project that will answer several of the important questions posed regarding sheefish migration, distribution, and potential new feeding or spawning areas. The findings from our project will enhance the current information known about the species, allowing federal subsistence managers to make informed decisions in the future based on the abundance, movements, and availability of these fish along the Chukchi Sea Coast. Additionally, the results from this project will be of great interest to subsistence fishers, particularly given recent reports of poor sheefish harvests and changes in abundance. Subsistence fishermen harvest over 25,000 sheefish annually in the Kotzebue region, thus the population health of the species is vital to local food security.

Objectives:

- 1) Identify the seasonal movements and northern range extent of sheefish found along the southern Chukchi Sea coast north of their typical overwintering areas (Hotham Inlet) and feeding range (Kotzebue Sound) with the use of pop-up archival satellite tags (PSATs).
- 2) Identify previously unknown or recently colonized sheefish spawning, feeding, or overwintering habitats.
- 3) Identify sheefish water temperature occupancy in coastal habitats and freshwater.

Methods: To assess sheefish movements and behavior, first, in 2022-2023 we will catch fish in coastal lagoons in Cape Krusenstern National Monument, Alaska (north of the typical range of the species) via fyke net, beach seine, and gillnet during annual WCS fisheries monitoring efforts. Next, we will attach pop-up satellite archival tags to 20 adult sheefish. The tags will record water temperature, depth, and light intensity experienced by the fish, will release and float to the water surface after several months, and will transmit data to researchers via the Argos Satellite Network. Data will be used to determine locations, movements, water temperature occupied, and depths of each fish over the time it was tagged. Information will be summarized to quantify the extent of sheefish northerly movements, seasonal migration patterns, habitat preferences, and novel feeding or spawning areas in and around Kotzebue Sound.

Partnerships/Capacity Building: This project will be a collaborative effort between the Native Village of Kotzebue, the Wildlife Conservation Society, University of Alaska Fairbanks, Alaska Department of Fish and Game, Selawik National Wildlife Refuge, and the National Park Service. Collaborating with local communities is paramount to the success of this project and is a guiding principal for all WCS work. The Native Village of Kotzebue, through their Environmental Program Director Alex Whiting, was involved in the study design, helped shape the outreach approach, and will continue to be an equal partner in the continued project efforts. Additionally, during project implementation, we will hire a local field technician through the Native Village of Kotzebue to assist with the study.

Project Number:	22-103
Title:	Unalakleet River Chinook Salmon Escapement Assessment-Continuation
Geographic Region:	Northern Alaska Region
Data Type:	Stock Status and Trends
Principal Investigator:	Kevin Clark, Alaska Department of Fish and Game
Co-investigator:	Wes Jones, Norton Sound Economic Development Corporation Merlyn Schelske, U.S. Bureau of Land Management
Project Cost:	2022: \$173,204 2023: \$184,108 2024: \$197,115 2025: \$151,902
Total Cost:	\$706,329

Issue: The Unalakleet River supports the largest Chinook salmon subsistence fishery in Norton Sound. Unalakleet River Chinook salmon total annual run averaged 20,790 fish prior to 2000 and 6,058 fish since 2000, a 64% decrease. Failure to consistently meet the escapement goal lead the Alaskan Board of Fisheries to declare Unalakleet River Chinook salmon a stock of yield concern in 2004, which has continued through 2021.

Prior to 2010, management decisions depended on an enumeration tower on the North River and radiotelemetry studies conducted in 1998–1999 and 2009 to estimate the total escapement to the Unalakleet River drainage. Inconsistent operation of the counting tower and uncertainties concerning the number of spawners in the North River versus the Unalakleet River called into question the ability of the project to inform fishery management decisions. In 2010, the Unalakleet River weir was initiated to provide: 1) a reliable annual estimate of Chinook salmon escapement and 2) unbiased age, sex, and length (ASL) composition for Chinook salmon escapement.

The Unalakleet River weir project has been renewed twice by OSM for continued operations. The Unalakleet River weir escapement estimates and ASL data are being used to manage Chinook salmon subsistence, commercial, and sport fisheries in Subdistrict 6, develop outlooks of run abundance, evaluate brood year productivity, and examine effects of harvest practices on spawning escapement. Though the data collected during weir operations have improved management precision, several more years of data are needed before recruit-per-spawner analyses can produce a reliable escapement goal for the Unalakleet River drainage.

Objectives:

- 1) Estimate daily and total Unalakleet River Chinook salmon escapement from mid-June to August 15 each year.
- 2) Describe the timing of Unalakleet River Chinook salmon run.
- 3) Estimate ASL composition of the Unalakleet River Chinook salmon escapement such that the age composition estimate is within 20% of the actual estimate 90% of the time and the sex composition estimate is within 10% of the actual estimate 95% of the time.

Methods: A resistance board weir will be installed approximately 22 kilometers upstream from the Unalakleet River mouth, which is below identified Chinook salmon spawning habitat. The Unalakleet River weir will be installed in mid-June and operate until August 15. Two passage chute/live trap assemblies will allow project staff to count Chinook salmon and will be configured with an angled high visibility flash panel to enhance visibility. Counting periods will consist of three 8-hour shifts. Salmon will be identified by species, enumerated, and summed to estimate a total daily passage by species. Counts will be conducted 24 hours a day with flood lamps used during low-light conditions. Counting schedules can be adjusted for changes in diurnal migratory patterns or operational constraints. Missed daily counts for Chinook salmon will be interpolated using a hierarchical Bayesian estimation technique.

Active sampling techniques will be utilized to capture Chinook salmon for data collection. Salmon will be measured to the nearest millimeter from mid-eye to tail fork and sex will be determined by examining external characteristics. Three scales will be taken from each Chinook salmon using standard protocols, mounted on gummed cards, and sent to the Nome ADF&G office for processing. Sampling protocols can be adjusted inseason to address differences between expected and observed run abundance and timing. Stream and ambient air temperature, relative water level, and atmospheric observations will be recorded twice daily. Additionally, a HOBO Pro v2 data logger will record stream temperature at 6-hour intervals.

Partnerships/Capacity Building: ADF&G holds annual community meetings in Unalakleet to share information and address concerns about the project from area residents. The goal is to work with Unalakleet residents to minimize the effects of the weir on individuals using the river for subsistence harvest and to collect sound biological information. Additionally, ADF&G attends the Seward Peninsula Subsistence Regional Advisory Council Meeting to present information and address questions.

Currently two local organizations participate in the operation of the Unalakleet River weir: Norton Sound Economic Development (NSEDC) and Unalakleet Native Corporation (UNC). Weir oversight is provided by ADF&G with daily operations conducted by a Fish and Wildlife Technician III crew leader, ADF&G Fish and Wildlife Technician II, and one locally hired Fishery Technician (NSEDC). Locally hired technicians learn fish sampling skills which include proper salmon scale collection, standardized length measurement and sex determination, installation and operation of a weir, and accurate collection, recording, and reporting of data. Local-hire emphasis fosters involvement of resource users as active participants in fisheries assessment and management. A BLM fishery biologist and student intern will participate in setting up and removing the weir. The field camp is situated on UNC land.

In addition to improving management tools and filling data gaps, the Unalakleet River weir project promotes communication, data sharing, and interaction between subsistence users, Federally recognized tribes, organizations, communities, and agencies.

Letters of support from NSEDC and UNC have been included.

Project Number:	22-104			
Title:	Selawik River Inconnu Spawning Population Age Structure Evaluation and Spawner Recruitment Response to a 2004 Permafrost Thaw Slump			
Geographic Region:	Northern Alaska Region			
Data Type:	Stock Status and Trends			
Principal Investigator:	Raymond Hander, USFWS Fairbanks Fish and Wildlife Conservation Office			
Co-investigator:	Dr. Randy J. Brown, USFWS, Fairbanks Fish and Wildlife Conservation Office			
	William K. Carter III, USFWS, Selawik National Wildlife Refuge			
	Catherine Bradley, USFWS, Conservation Genetics Laboratory			
Project Cost:	2022: \$0	2023: \$120,816	2024: \$34,036	2025: \$281,534
Total Cost:	\$281,534			

Issue Addressed: This project addresses priority issues identified for the Northern Alaska Region in the Fisheries Resource Monitoring Program (FRMP): most prominently from 2021’s list, “Changes in Grayling, Dolly Varden and Sheefish populations related to Climate Change”. This project benefits from information provided by FRMP projects 16-104,14-104,12-100, 04-101, 03-016, 02-040, 00-020.

In the Kotzebue Sound region of northwest Alaska, two Inconnu spawning populations have been identified, one in the upper Kobuk River and the other in the upper Selawik River within the Selawik National Wildlife Refuge. Inconnu is one of the most important food resources in the Kotzebue region where 20,000 or more are harvested each year in subsistence, sport, and commercial fisheries.

A large permafrost thaw slump (slump), located about 50 rkm upstream from the Inconnu spawning area on the Selawik River, began releasing large amounts of sediment into the river in 2004. From approximately 2004 to 2011 the Selawik River flowed turbid through the spawning area during the summer months and at times the gravel bars in the spawning area became layered in fine sediment and mud. As of 2012, more than 580,000 m³ of sediment had thawed with approximately two-thirds of that volume mobilized into the Selawik River. During the summers of 2009–2011, measured turbidity at the slump outflow averaged 34 times greater than a reference site upstream from the slump, and turbidity near the Inconnu spawning area was about 11 times greater than a reference site. Turbid water conditions have been observed at the mouth of the Tagagawik River, 150 rkm downstream from the slump, but were rarely observed in the lower Selawik River, 100 rkm farther downstream. It was clear that the sediment released by the slump has been progressively and steadily deposited onto the riverbed. By 2016 the slump had stabilized and its floor and deposition fan were almost completely vegetated with grasses and shrubs. In mid-July 2019, however, the slump began thawing again and delivering sediment into the Selawik River and continued during summer 2020. Based on similar slumps longevity, we assume that the Selawik River slump could continue for some time.

Sediment additions to rivers, whether natural or human caused, are known to be detrimental to river-spawning fishes. Habitat qualities of the Inconnu spawning area in the Selawik River have undoubtedly been changed because of the dramatically increased sediment exposure. Habitat changes may reduce the proportion of fertilized eggs that develop successfully and produce young. If production is reduced but not eliminated the Inconnu population would be expected to decline over time. If production is eliminated

the population would be expected to become extinct as existing fish gradually die off. The increased sediment in the upper Selawik River is an environmental factor that may have a profound effect on the Inconnu population that spawns there as well as the subsistence fishers that depend on them.

Objectives:

- 1) Collect Inconnu age and length data from male Inconnu from the Selawik and Kobuk River spawning populations in 2023 and 2024;
- 2) Characterize the brood years observed in 2023 and 2024 (BY 1992-2012) as weak or strong recruitment years using catch-curve residuals (Maceina 1997; Tetzlaff et al. 2011).
- 3) Test the null hypothesis that the proportional compositions of the young (≤ 15 years of age) and old (> 15 years of age) components are similar among the two spawning populations.

Project Design: We hypothesize that Inconnu recruitment success will be similar in the Kobuk and Selawik rivers if there is no slump effect on reproductive success, but that reduced recruitment success in the Selawik River would be indicative of a slump effect. The age distribution will be characterized in each river in 2023 and 2024, corresponding to fully recruited age classes (age-15 and older) from the 2007 and 2008 brood years, respectively, and earlier. In the Selawik River, this will be derived from a sample of 200 males caught on the spawning grounds. These fish can be sacrificed for otoliths and distributed to communities without reducing the number of fertilized eggs on the spawning grounds. The Alaska Department of Fish and Game will provide a similar sample (up to 200, if available) from incidental Inconnu captures from their Chum Salmon test fishery on the Kobuk River near the community of Kiana in July and August. Chi-squared analysis testing the difference in the proportion of young (< 15 years) fish in each river will be performed to test our hypothesis.

We further hypothesize that Selawik River brood years associated with the slump (2004 and later) will be relatively weak compared to brood years prior to the slump. To test this, we will perform a catch-curve regression and characterize brood years as weak or strong using a residual analysis. We will increase our aged fish sample by sampling an additional 300 males each year, measuring fork length and releasing unharmed, in the Selawik River and applying an age-length key derived from the 200 aged fish to estimate ages for the additional sample prior to the regression analysis.

Partnerships and Capacity Building: Through the Native Village of Selawik (NVOS), residents of Selawik will be sought for assistance with collecting otoliths, overseeing Inconnu carcass processing, and transportation and logistical support. Training for sampling procedures will be conducted for individuals prior to initiating sampling. During the 2011-2018 project period there were numerous Selawik residents plus the NVOS that cooperated with the project to help make it a success and we intend to continue that relationship through contracts or similar methods. The FFWFO has worked periodically with Selawik residents or the NVOS organization for about 30 years.

The USFWS has partnered with the Alaska Native Science and Engineering program (ANSEP) to increase the number of Alaska Native Persons within the science workforce. By providing internships and

an academic scholarship, the USFWS creates an opportunity for students pursuing degrees in the sciences to gain experience in the field of conservation. An ANSEP student interning on this project will build their skills and experience with fish collection, biological fish sampling, importance of careful data recording and management, biological sample organization and accounting, fish preservation, exposure to other Selawik River fish species, field equipment care, and shared camp life experience. The ANSEP student’s salary will be requested through the proposed project budget. An ANSEP student academic scholarship(s) will be funded through a separate financial assistance award issued by the USFWS Regional Office. The student will have communication with the project leader(s) before field work to familiarize how and why the study is being conducted and provided with educational materials such as literature about northwest Alaska Inconnu and permafrost thaw.

In coordination with the NVOS we will mentor a senior or junior Selawik high school student at the project to provide skill building experience similar to the ANSEP student. If appropriate, provide documentation for the student to receive academic credit for their experience and participation. The student will receive a daily stipend within the scope of the USFWS regulations. The student will have communication with the project leader(s) similar to the ANSEP student before field work. The student will also have opportunity to share their views and experiences about fish and wildlife resources they have encountered.

Project Number:	22-150			
Title:	Traditional Ecological Knowledge of Salmon in the River Drainages of Kotzebue Sound			
Geographic Region:	Northern Alaska Region			
Data Type:	Traditional Ecological Knowledge			
Principal Investigator:	Elizabeth Mikow, Alaska Department of Fish and Game, Division of Subsistence			
Co-investigator:	None			
Project Cost:	2022: \$164,450	2023: \$117,642	2024: \$0	2025: \$0
Total Cost:	\$282,091			

Issue Addressed: This proposed project addresses a priority information need identified for the Arctic region regarding changes in salmon distribution, abundance, migration, and timing in river drainages of Kotzebue Sound (USFWS 2021). While chum (*Oncorhynchus keta*) are the predominant species of salmon in the region, all five species of Pacific salmon that return to Alaska are found in the Kobuk and Noatak River drainages.¹ Chum, sockeye (*Oncorhynchus nerka*), Chinook (*Oncorhynchus tshawytscha*), and pink salmon (*Oncorhynchus gorbuscha*) are present in the Kobuk River, while these four species and coho salmon (*Oncorhynchus kisutch*) are present in the Noatak River. Salmon species are an important part of the subsistence diet of the region and are harvested in large quantities by residents throughout the 14 communities of the Kotzebue management district (Braem et al. 2017, Braem et al. 2018, Braem et al.

¹ ADF&G. 2021. Anadromous Waters Catalog Interactive Mapping. <https://www.adfg.alaska.gov/sf/SARR/AWC/index.cfm?ADFG=main.interactive>. Accessed February 10, 2021

2015, Magdanz et al. 2011). Division of Subsistence harvest assessment projects in 12 Kotzebue District communities show a heavy reliance on salmon resources (Braem et al. 2017, Braem et al. 2018). In 2013, an estimated 53,272 salmon were harvested by 9 communities (Noatak, Kiana, Noorvik, Selawik, Ambler, Shungnak, Kobuk, Buckland, and Deering). In 2014, an estimated 89,880 salmon were caught by 11 communities in the district (Noatak, Kiana, Noorvik, Selawik, Ambler, Shungnak, Kobuk, Buckland, Point Hope, Shishmaref, and Kotzebue). Recent ethnographic information collected by the Division of Subsistence as a part of these harvest assessment projects has documented concerns by residents of the Kotzebue District regarding environmental changes that have affected their ability to harvest and process salmon. Additionally, during recent Northwest Arctic Regional Subsistence Advisory Council (RAC) meetings in March and November 2020, council members expressed concern regarding water temperatures in the rivers delaying salmon runs, concerns over the potential effects of development, and the particularly poor salmon fishing season in 2020. Building on these recent studies, this project will document traditional ecological knowledge (TEK) from residents of Ambler, Noorvik, and Kotzebue regarding changing salmon distribution, abundance, migration, and timing. These communities were chosen to include perspectives of residents of the region who harvest salmon in the lower and upper Kobuk River, as well as in Kotzebue Sound and the Noatak River. Key respondent interviews will document local observations of fish behavior, health, and abundance. Additionally, interviews will assess the amounts harvested, harvest areas, and means of harvest of key species along with the social and cultural importance of fish resources.

Objectives: There are three objectives for this project:

- 1) In the communities of Ambler, Noorvik, and Kotzebue, conduct in-depth ethnographic interviews about the TEK of salmon ecology. Interviews will include questions about:
 - 2) salmon species utilized for subsistence;
 - 3) life history and biological information including habitat preferences, spawning and rearing areas, and seasonal movements of fish;
 - 4) traditional and contemporary harvest methods, including timing of harvest, and gear used;
 - 5) observations of fish behavior including seasonal movements, migration timing, spawning and rearing areas, and fish health;
 - 6) relative abundance and population trends for salmon species; and
 - 7) general observations of environmental change.
- 8) Map historical and contemporary subsistence harvest locations, observed fish migrations, and other important habitats (spawning, juvenile rearing, etc.).
- 9) Contribute to local capacity building by utilizing a framework of community involvement in research.

Methods: The research will employ standard anthropological data gathering methods of key respondent interviews, participant observation, and mapping to document the TEK of salmon species in Northwest Alaska. ADF&G staff will work closely with participating communities to assure effective local participation. As such, tribal governments will serve as project collaborators, supporting the research through tribal resolutions and assisting investigators in local logistics. In each of the study communities local research assistants will be hired to assist with data collection.

Semi-structured interview protocols provide a format for systematically documenting comparable information about the same or an overlapping set of topics in each community while providing flexibility for each key respondent's level of expertise, experience, and focus. Investigators will use a general semi-structured interview guide framed around the topics listed in Objective 1 and developed in consultation with the tribal councils and other knowledgeable community members. The guide may be modified to reflect regional differences along each river, such as variations in resource use or ceremonial life. Davis and Ruddle (2010:891) stress the importance of a systematic methodology for gathering local knowledge, primarily through peer recommendations. In each community, individuals knowledgeable about salmon will be identified using a snowball method to learn about other experts with the assistance of tribal council and other community members (Usher 2000). Researchers will attempt to interview 10 individuals in Ambler and Noorvik, and, due to the size of the community, 15 individuals in Kotzebue. These sample sizes are based on researchers' previous research experience with the proposed communities and residents' collective subsistence use practices. Because this type of knowledge is likely to be highly specialized, researchers will strive to include all experts with this knowledge without attempting to represent a variety of demographics, including age, gender, and profession.

During interview sessions, key respondents will be asked to map historical and contemporary subsistence harvest areas, as well as historical and contemporary areas of observed fish migration. The temporal focus of these two mapping topics will allow for the documentation of changes to productive areas of harvest as well as any changes to fish abundance and movement in key waterways utilized for subsistence.

Partnerships and Capacity Building: The principal investigator will work with tribal councils in the study communities to hire local project assistants to assist with key respondent interviews and facilitate community meetings. The local research assistants will be trained in ethnographic interview methods. Local research assistants are well positioned to aid in interview data collection due to their understanding of the key species harvested by their community as well their knowledge of local geography for mapping sessions. The PI will work with local research assistants to develop a presentation on study results for community review. Working together in data collection increases communication and leads to better understanding of local issues and local understanding of science and management issues.



Federal Subsistence Board

1011 East Tudor Road, MS 121
Anchorage, Alaska 99503 - 6199



FISH and WILDLIFE SERVICE
BUREAU of LAND MANAGEMENT
NATIONAL PARK SERVICE
BUREAU of INDIAN AFFAIRS

FOREST SERVICE

AUGUST 13 2021

In Reply Refer To
OSM 21043.LG

Northwest Arctic Subsistence
Regional Advisory Council
Office of Subsistence Management
1011 E. Tudor Road
Anchorage, Alaska 99503-6199

Dear Council:

This letter responds to your Temporary Wildlife Special Action Request WSA21-01, requesting closure of Federal public lands in Units 23 and 26A to caribou and moose hunting by non-Federally qualified users from August 1 to September 30, 2021.

The Federal Subsistence Board (Board) has deferred this request and will reconsider it prior to the 2022 hunting season. The Board requested that Office of Subsistence Management (OSM) staff seek additional input on concerns related to caribou from the Western Arctic Caribou Herd Working Group, Federal land-managing agencies, local Fish and Game Advisory Committees, the Alaska Department of Fish and Game, Regional Advisory Councils, commercial guides and transporters, and subsistence users in the area. The Board also asked OSM staff to include comparisons of moose harvest by survey area within Unit 23 in their analysis. The Board will further discuss and take action on this request in 2022.

The Board's deferral of this temporary special action request means that at this time, there are no changes to Federal regulations for moose or caribou in Units 23 or 26A for the 2021 season. Existing regulations, published prior to this request, are still in effect.

The enclosed copies of the Staff Analysis and the Interagency Staff Committee Recommendation provide further information and justification for this action. If you have any questions, please contact Lisa Grediagin, Wildlife Division Supervisor, Office of Subsistence Management, at (907) 786-3357.

Sincerely,



Anthony Christianson
Chair

Enclosures

cc: Federal Subsistence Board
Office of Subsistence Management
Tom Baker, Chair, Northwest Arctic Subsistence Regional Advisory Council
Gordon Brower, Chair, North Slope Subsistence Regional Advisory Council
Louis Green, Chair, Seward Peninsula Subsistence Regional Advisory Council
Jenny Pelkola, Chair, Western Interior Subsistence Regional Advisory Council
Benjamin Mulligan, Deputy Commissioner, Alaska Department of Fish and Game
Mark Burch, Special Projects Coordinator, Alaska Department of Fish and Game
Interagency Staff Committee
Administrative Record

**STAFF ANALYSIS
TEMPORARY SPECIAL ACTION
WSA21-01**

ISSUES

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

DISCUSSION

The proponent expresses concern about the late migration of caribou into and through Unit 23. The caribou migration has been delayed in recent years, and the proponent anticipates another delay in fall of 2021. 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. 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 proponent is requesting a closure to moose hunting by non-Federally qualified users in Units 23 and 26A because of declining moose populations.

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 23–Moose

Unit 23—that portion north and west of and including the Singoalik River drainage, and all lands draining into the Kukpuk and Ipewik Rivers—1 antlered bull. No person may take a calf.

July 1–Dec. 31.

Unit 23, remainder—1 antlered bull. No person may take a calf.

Aug. 1–Dec. 31.

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.

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.

Unit 26A—Moose

Unit 26A—that portion of the Colville River drainage upstream from and including the Anaktuvuk River drainage—1 bull

Aug. 1-Sep. 14

Unit 26A—that portion of the Colville River drainage upstream from and including the Anaktuvuk River drainage—1 moose; however, you may not take a calf or a cow accompanied by a calf

Feb. 15-Apr. 15.

Unit 26A—that portion west of 156°00' W longitude excluding the Colville River drainage—1 moose, however, you may not take a calf or a cow accompanied by a calf

July 1-Sep. 14.

Unit 26A, remainder—1 bull

Aug. 1-Sep. 14.

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, 2021 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 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, 2021 except by Federally qualified subsistence users hunting under these regulations.

Unit 23–Moose

Unit 23—that portion north and west of and including the Singoalik River drainage, and all lands draining into the Kukpuk and Ipewik Rivers—1 antlered bull. No person may take a calf.

July 1-Dec. 31.

Federal public lands are closed to moose hunting from Aug. 1-Sep. 30, 2021 except by Federally qualified subsistence users hunting under these regulations.

Unit 23, remainder—1 antlered bull. No person may take a calf.

Aug. 1-Dec. 31.

Federal public lands are closed to moose hunting from Aug. 1-Sep. 30, 2021 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, 2021 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, 2021 except by Federally qualified subsistence users hunting under these regulations.

Unit 26A—Moose

Unit 26A—that portion of the Colville River drainage upstream from and including the Anaktuvuk River drainage—1 bull Aug. 1-Sep. 14

Federal public lands are closed to moose hunting from Aug. 1-Sep. 30, 2021 except by Federally qualified subsistence users hunting under these regulations.

Unit 26A—that portion of the Colville River drainage upstream from and including the Anaktuvuk River drainage—1 moose; however, you may not take a calf or a cow accompanied by a calf Feb. 15-Apr. 15.

Federal public lands are closed to moose hunting from Aug. 1-Sep. 30, 2021 except by Federally qualified subsistence users hunting under these regulations.

Unit 26A—that portion west of 156°00' W longitude excluding the Colville River drainage—1 moose, however, you may not take a calf or a cow accompanied by a calf July 1-Sep. 14.

Federal public lands are closed to moose hunting from Aug. 1-Sep. 30, 2021 except by Federally qualified subsistence users hunting under these regulations.

Unit 26A, remainder—1 bull Aug. 1-Sep. 14.

Federal public lands are closed to moose hunting from Aug. 1-Sep. 30, 2021 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

	<i>Nonresidents—One bull</i>		<i>HT</i>	<i>Aug. 1-Sept. 30</i>
<i>23 remainder</i>	<i>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.</i>	<i>Bulls</i>	<i>RC907</i>	<i>No closed season</i>
		<i>Cows</i>	<i>RC907</i>	<i>Sept. 1-Mar. 31</i>
	<i>Nonresidents—One bull</i>		<i>HT</i>	<i>Aug. 1-Sept. 30</i>

Unit 23—Moose

<i>23, north of and including Singoalik River drainage</i>	<i>Residents— One antlered bull by permit available in person at license vendors within Unit 23 villages June 1-July 15</i>		<i>RM880</i>	<i>July 1-Dec. 31</i>
	<i>or</i>			
	<i>Residents— One bull with 50-inch antlers or antlers with 4 or more brow tines on at least one side</i>		<i>HT</i>	<i>Sept. 1-Sept. 20</i>
	<i>Nonresidents</i>			<i>No open season</i>
<i>23 remainder</i>	<i>Residents— One antlered bull by permit available in person at license vendors within Unit 23 villages June 1-July 15</i>		<i>RM880</i>	<i>Aug. 1-Dec. 31</i>
	<i>or</i>			
	<i>Residents— One bull with 50-inch antlers or antlers with 4 or more brow tines on at least one side</i>		<i>HT</i>	<i>Sept. 1-Sept. 20</i>
	<i>Nonresidents</i>			<i>No open season</i>

Unit 26A—Caribou

<i>26A, the Colville River drainage upstream from the Anaktuvuk River, and drainages of the Chukchi Sea south and west of, and including</i>	<i>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.</i>	<i>Bulls</i>	<i>RC907</i>	<i>July 1-Oct. 14</i> <i>Feb. 1-June 30</i>
		<i>Cows</i>	<i>RC907</i>	<i>Jul. 15-Apr. 30</i>
	<i>Nonresidents—One bull</i>		<i>HT</i>	<i>July 15-Sept. 30</i>

*the Utukok River
drainage*

<i>26A remainder</i>	<i>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.</i>	<i>RC907</i>	<i>July 1-July 15 Mar. 16-Jun 30</i>
	<i>Residents—Five caribou per day, three of which may be cows; cows with calves may not be taken. 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.</i>	<i>RC907</i>	<i>July 16-Oct. 15</i>
	<i>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.</i>	<i>RC907</i>	<i>Oct. 16-Dec. 31</i>
	<i>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.</i>	<i>RC907</i>	<i>Jan. 1-Mar. 15</i>
	<i>Nonresidents—One bull</i>	<i>HT</i>	<i>July 15-Sept. 30</i>

Unit 26A—Moose

<i>26A, west of 156° 00' W. long. excluding the Colville River drainage</i>	<i>Residents— One moose. However, a person may not take a calf or a cow accompanied by a calf</i>	<i>HT</i>	<i>July 1-Sept. 14</i>
	<i>Nonresidents</i>		<i>No open season</i>
<i>26A, the Colville River drainage above and including the Anaktuvuk River drainage</i>	<i>Residents— One bull</i>	<i>HT</i>	<i>Aug. 1-Sept. 30</i>
	<i>Nonresidents</i>		<i>No open season</i>
<i>26A remainder</i>	<i>Residents— One bull</i>	<i>HT</i>	<i>Aug. 1-Sept. 30</i>
	<i>Nonresidents</i>		<i>No open season</i>

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.

Customary and Traditional Use Determinations

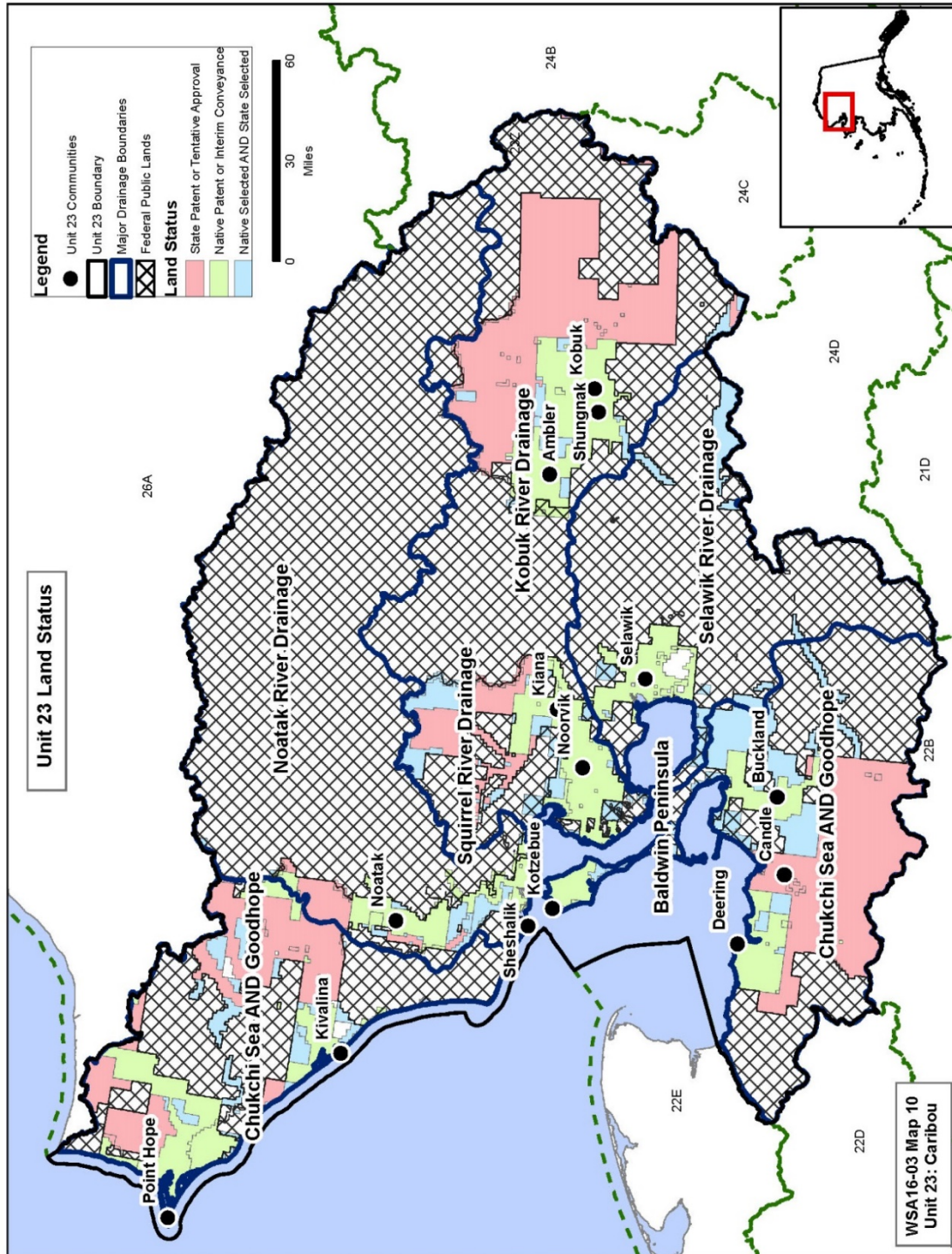
Residents of Units 21D west of the Koyukuk and Yukon Rivers, Galena, 22, 23, 24 including residents of Wiseman but not including other residents of the Dalton Highway Corridor Management Area, and 26A have a customary and traditional use determination for caribou in Unit 23 (**Map 2**).

Residents of Unit 23 have a customary and traditional use determination for moose in Unit 23.

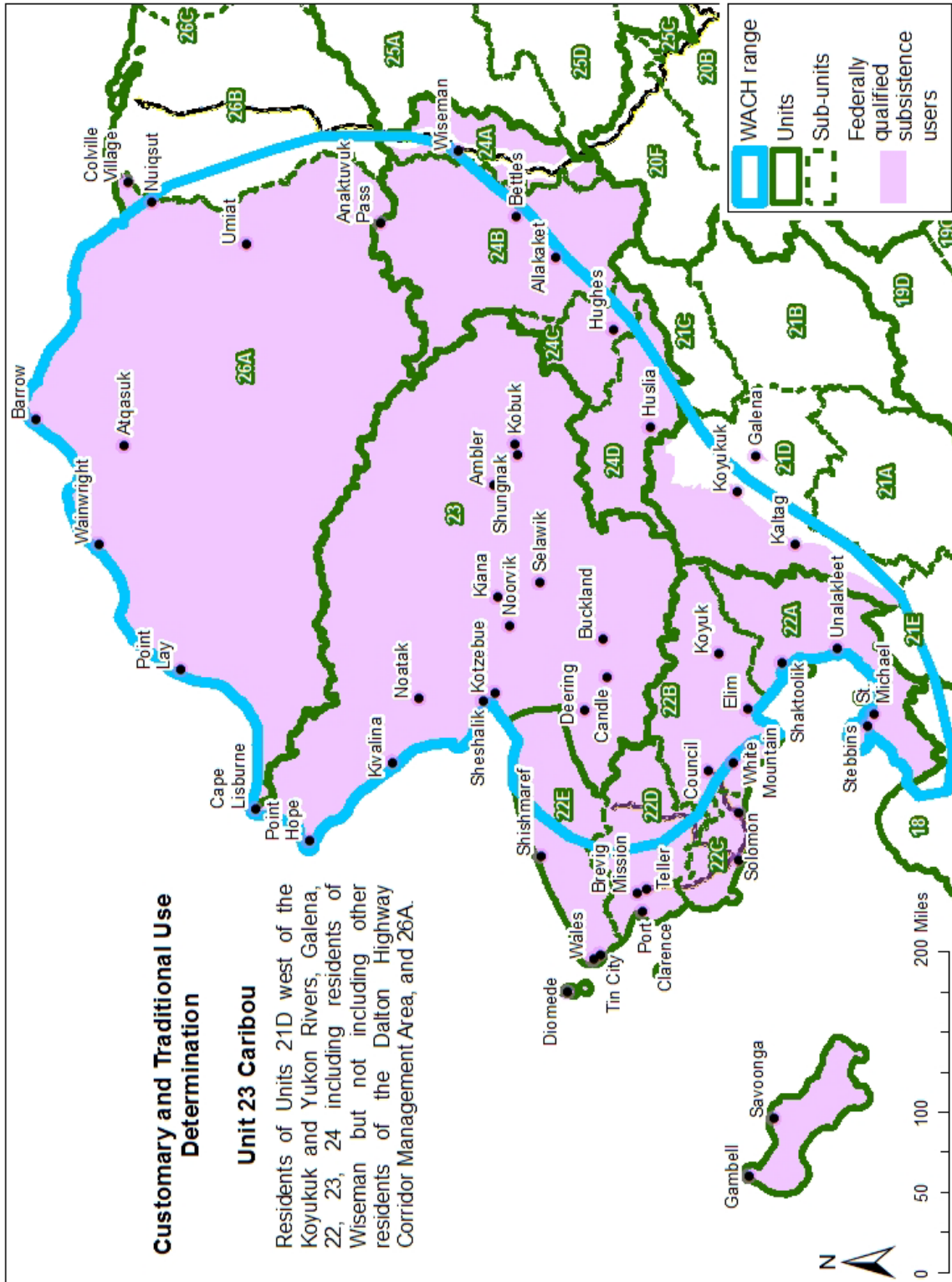
Residents of Unit 26, Anaktuvuk Pass, and Point Hope have a customary and traditional use determination for caribou in Unit 26A.

Residents of Unit 26 (excluding the Prudhoe Bay-Deadhorse Industrial Complex), Point Hope, and Anaktuvuk Pass have a customary and traditional use determination for moose 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.

Regulatory History

Unit 23 and 26A Caribou

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-Jun. 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), 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). The Alaska Department of Fish and Game (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.

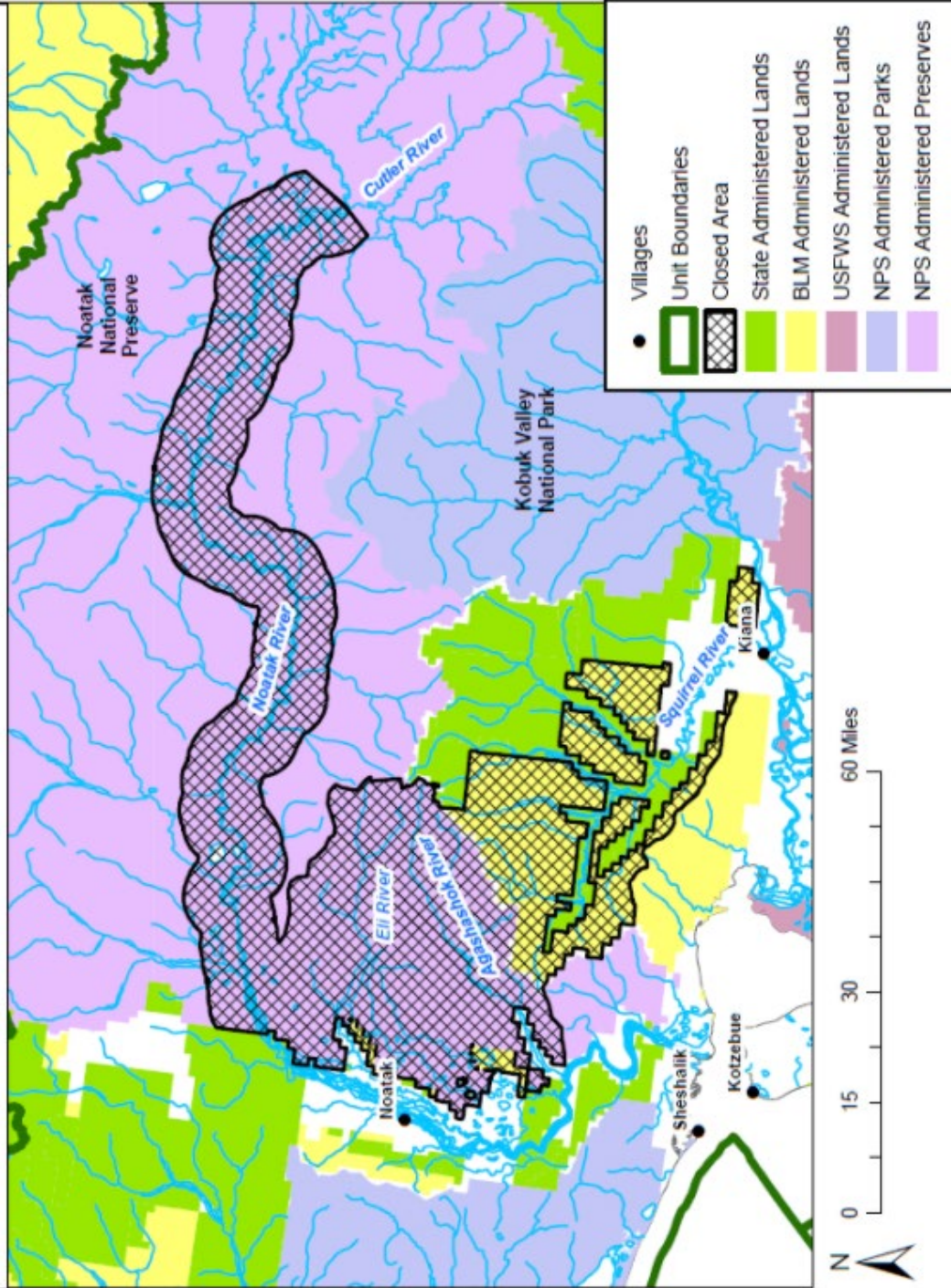
Table 1. History and outcomes of closure requests for caribou on Federal public lands in Unit 23 since 2016. All three requests were submitted by the Northwest Arctic Council. FQSUs = Federally Qualified Subsistence Users; NFQUs = non-Federally qualified users.

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

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 are closed to caribou hunting except by Federally qualified subsistence users.



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

Unit 23 Moose

In 1994, the Federal subsistence moose hunt in Unit 23 consisted of three hunt areas: Unit 23 north and west of and including the Singoalik River drainage, and all lands draining into the Kukpuk and Ipevik rivers (Unit 23 NW), Unit 23 within the Noatak River drainage, and Unit 23 remainder. The harvest limit in each hunt area was one moose with a prohibition on the take of cows accompanied by calves. The season in the Unit 23 NW hunt area was Jul. 1-Mar. 31; the season in the Noatak River drainage hunt area was Aug. 1-Sep. 15 and Oct. 1-Mar. 31, although antlerless moose could only be taken Nov. 1-Mar. 31; the season in Unit 23 remainder was Aug. 1-Mar. 31.

State moose regulations became more restrictive in 2003 when BOG approved amended Proposal 15 (effective starting with the 2004/05 regulatory year), making it more difficult for nonlocal residents to hunt moose, creating four registration hunts in the unit with permits (RM880) only available in person at licensed vendors in Unit 23 villages from Jun. 1-Jul. 15. This early availability of permits occurred before most of the seasons opened, requiring nonlocal hunters to make a special trip to a Unit 23 village in order to receive a permit. These permits also allowed for better tracking of harvest.

In 2005, Proposal WP05-18, submitted by the Northwest Arctic Council, requested prohibiting the harvest of calves, shortening the season for moose in most of Unit 23 from Jul. 1 (or Aug. 1)-Mar. 31 to Aug. 1-Dec. 31, combining the Noatak drainage and remainder hunt areas, and allowing antlerless moose to be harvested only in November and December. The Board tabled this proposal in response to a Northwest Arctic Council recommendation to provide time for residents of local villages to review the proposal and provide their input due to differing viewpoints related to the moose population and local subsistence needs.

In 2006, Proposal WP06-54 was submitted by the Council to replace WP05-18, requesting that the harvest of moose calves be prohibited and that the two week seasonal closure (Sep. 16-30) in the Noatak River drainage hunt area be rescinded. The Board adopted WP06-54 under its consensus agenda.

In January 2017, the BOG adopted amended Proposal 36, changing the antlerless moose season in Unit 23 to one antlered bull due to conservation concerns. Of note, nonresident drawing permits had been reduced from 50 permits in 2016/17 to 34 permits in 2017/18 and, later in 2017, ADF&G cancelled the 2017/18 nonresident moose hunt in Unit 23, voiding all issued permits (ADF&G 2017a, 2017b, Saito 2017 pers. comm.).

In April 2017, the Board rejected Temporary Special Action WSA17-02, which requested that Federal public lands in Unit 23 be closed to moose harvest by non-Federally qualified users during the 2017/18 regulatory year. The Board stated that they wanted to allow time to assess the effects of recent State actions prior to considering a unit-wide closure.

During the 2018/20 regulatory cycle, the Council (WP18-41) and Louis Cusack (WP18-42) submitted similar proposals requesting changes to the Unit 23 moose season, including shortening the cow and overall moose seasons and aligning Federal and State hunt areas. Specifically, WP18-41 requested

combining the Noatak River drainage and remainder hunt areas, changing the closing date of the bull season from Mar. 31-Dec.31, and restricting cow harvest to Nov. 1–Dec. 31. The Board adopted Proposal WP18-41 to protect the declining moose population and took no action on WP18-42.

In 2018, Emergency Special Action WSA18-04, which requested closing the cow moose season in Unit 23 to Federally qualified subsistence users for the 2018/2019 regulatory year, was submitted to the Board. The Board approved with modification to close the Federal winter cow moose season and close moose hunting in Unit 23 except by Federally qualified subsistence users for the 2018/19 regulatory year. Board justification was based on declining moose population and low calf: cow ratios; the action was found to be necessary to maintain a healthy moose population.

In 2018, ADF&G also closed the non-resident moose season in Unit 23 and planned to continue the nonresident closure until moose populations rebound (NWARAC 2018a).

In 2019, the Northwest Arctic Council submitted a wildlife special action request (WSA19-04) to close the cow moose harvest on Federal public lands in Unit 23 for the 2019/20 regulatory year to Federally qualified subsistence users in order to ensure that the cow harvest in the unit remained closed until the Board could take permanent action through a regulatory proposal. The Council justification for closing to Federally qualified subsistence users— rather than non-Federally qualified subsistence users—was to avoid concentrating non-local hunters around communities. The Board approved WSA19-04 with modification to also delegate authority to the in-season manager to close moose hunting on Federal public lands in Unit 23 to non-Federally qualified users during the 2019/20 regulatory year, if warranted.

In 2020, the Northwest Arctic Council submitted Proposal WP20-47, which requested closure of the cow moose season in Unit 23 to Federally qualified subsistence users and requiring the use of a State registration permit (RM880) by Federally qualified subsistence users under Federal regulations. The RM880 permit can only be obtained within Unit 23 from June 1 to July 15. The Board adopted WP20-47 with modification to change the Unit 23 moose harvest limit from one moose to one antlered bull, closing the cow moose season because of conservation concerns. The Board did not adopt the State registration permit requirement because it would burden Federally qualified subsistence users.

In summary, changes implemented in both State and Federal subsistence regulations since 2017 have placed restrictions on moose hunting in Unit 23:

Federal Subsistence regulatory changes:

- Combined Noatak River drainage and remainder hunt areas, effectively reducing harvest (2018)
- Shortened bull and cow seasons (2018)
- Closure to non-Federally qualified subsistence users (2018/2019 regulatory year only)
- Closure of cow moose season for Federally qualified subsistence users for the 2019/2020 regulatory year
- Changed the harvest limit to one antlered bull (2020)

State regulatory changes:

- Changed antlerless moose season to one antlered bull (2017)
- Closure of the non-resident moose season (2018)

The results of closure requests for moose in Units 23 made to the Board since 2017 are documented in **Table 3**, below.

Table 3. Recent history of closure requests for moose on Federal public lands in Unit 23. FQSUs = Federally Qualified Subsistence Users; NFQUs = non-Federally qualified users.

Proposal	Proposed Action	Proponent Rationale	Board Action
WSA17-02 (Northwest Arctic Council)	Close to NFQUs for 2017/18 regulatory year	Decline in moose population	Reject
WSA18-04 (Louis Cusack)	Close the cow moose season to FQSUs for the 2018/2019 regulatory year	Decline in moose population	Approve with modification to close the Federal winter cow moose season and close moose hunting in Unit 23 except by Federally qualified subsistence users for the 2018/19 regulatory year.
WSA19-04 (Northwest Arctic Council)	Close the cow moose harvest to FQSUs users for the 2019/20 regulatory year	Decline in moose population; to ensure that the cow harvest in the unit remained closed until the Board could take permanent action through a regulatory proposal. Closure to NFQUs may concentrate users around communities.	Approved with modification to also delegate authority to the in-season manager to close moose hunting in Unit 23 to non-Federally qualified users during the 2019/20 regulatory year, if warranted.
WP20-47 (Northwest Arctic Council)	Close the cow moose harvest to FQSUs	Decline in moose population	Adopted with modification to change the Unit 23 moose harvest limit from one moose to one antlered bull, closing the cow moose season because of conservation concerns.

Unit 26A Moose

A 75% moose population decline from 1991 to 1996 prompted season restrictions in State regulations in 1995 and in both the Federal and State moose harvest regulations in 1996. Prior and leading up to the May 1996 Federal Subsistence Board action, the moose population in Unit 26A—the Colville River drainage in particular—was in serious decline. To address this issue, the Board adopted the State’s aircraft use restrictions for Unit 26A in 1994.

In 1996, the Board adopted regulatory proposal P96-66, which closed moose hunting on all Federal public lands in Unit 26A except in that portion of the Colville River drainage downstream from the mouth of the Anaktuvuk River due to population declines. At that time, the only segment of the population that was considered stable was the small population of moose downstream from the mouth of Anaktuvuk River. That area remained open only to Federally qualified subsistence users from Aug. 1–Aug. 31, and the harvest was limited to 1 moose per hunter, as long as it was not a cow accompanied by a calf. The Board’s justification for adopting the closure to non-Federally qualified users to harvest moose was to address conservation concerns.

In 2002, the Board adopted Proposal WP02-45 that expanded the Federal subsistence moose harvest area in Unit 26A from that portion of the Colville River drainage downstream from the mouth of the Anaktuvuk River to that portion of the Colville River drainage downstream from and including the Chandler River and also extended the season by two weeks, from Aug. 1–Aug. 31 to Aug. 1–Sep. 14. The Board’s rationale for adopting Proposal WP02-45 included: population increases since 1998, especially in the core areas of the Colville River drainage; spreading out the harvest pressure to other areas with higher moose density; aligning State and Federal regulations; and providing additional subsistence hunting opportunity later in the fall when the temperatures are colder, which could reduce the chance of meat spoilage.

In 2004, the Board adopted Proposal WP04-85 which established the eastern boundary of the proposed harvest area in Unit 26A to 156°00’W longitude to match the new State regulation and also aligned the season and harvest limits with those made by the BOG.

In 2005, the Office of Subsistence Management conducted closure review WCR05-23 and recommended that the closure of that portion of the Colville River drainage downstream from and including the Chandler River to non-Federally qualified moose hunters should continue to remain in effect. However, when WCR05-23 was discussed during the North Slope Council’s fall 2005 meeting, new winter moose census information provided by the ADF&G suggested the closure was no longer necessary since the moose population had reached at least 1,000 animals. Although the Council recommended maintaining the closure to nonsubsistence uses, the new information indicated such a closure may no longer be needed to conserve a healthy moose population.

In May 2006, the Board adopted Proposal WP06-66, which resulted in reopening remaining Federal public lands on that portion of the Colville River drainage downstream from and including the Chandler River to hunting by all Alaska residents.

In 2007, the BOG opened a non-resident drawing hunt for moose in Unit 26A. In 2014, the BOG extended the resident bull moose season in Unit 26A from Aug. 1-Sep. 14 to Aug. 1 to Sep. 30 in order to accommodate a shifting moose season in two hunt areas: the Colville River drainage above and including the Anaktuvuk River drainage, and in Unit 26A Remainder. The BOG also aligned the Unit 26A Controlled Use Area dates with this season at this time. However, later in 2014, the season was reduced to its original length and the non-resident drawing hunt closed through Emergency Order due to moose population decline. There has not been a non-resident moose hunt in Unit 26A since 2013.

Table 4. Summary of moose and caribou hunts in the months of August and September in Units 23 and 26A. Y = Yes; N = No; 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	Y	Y	Y
Unit 23 moose	Y	Y	N
Unit 26A caribou	Y	Y	Y
Unit 26A moose	Y, but hunt ends Sep. 14 everywhere except Nuiqsut area	Y, but ends Sep. 14 in Western portion of the Unit	N

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 5**, 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 5**, 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 5**).

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 (**Table 5**, FWS 2011, 2014). These refuge lands are intermingled with private lands near the villages of Noorvik and Selawik (**Map 5**). The purpose of this closure was to minimize trespass on private lands and to reduce user conflicts (FWS 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 2021. 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, this area no longer receives many fly-in hunters (NWARAC 2021).

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 5**, 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 date was changed from Sep. 15-Sep. 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 5**, FWS 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.

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 5**).

Unit 26A Controlled Use Area

Under State regulations, the Unit 26A Controlled Use Area (**Map 4**) is closed to the use of aircraft for hunting moose, including the transportation of moose hunters, their hunting gear, or parts of moose from Jul. 1-Sep. 30 and from Jan.-Mar. 31 (**Table 5**). This provision does not apply to the transportation of moose hunters, their hunting gear, or parts of moose by aircraft between publicly owned airports.



Map 4. Unit 26A Controlled Use Area.

Table 5. Comparative summary of Controlled Use Areas 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.

Controlled Use Area	Time Period	Aircraft closure
Unit 26A Controlled Use Area (State regulations)	Jul. 1-Sep. 30, Jan. 1-Mar. 31	To the use of aircraft for hunting moose , including the transportation of moose hunters, their hunting gear, or parts of moose.

Current Events

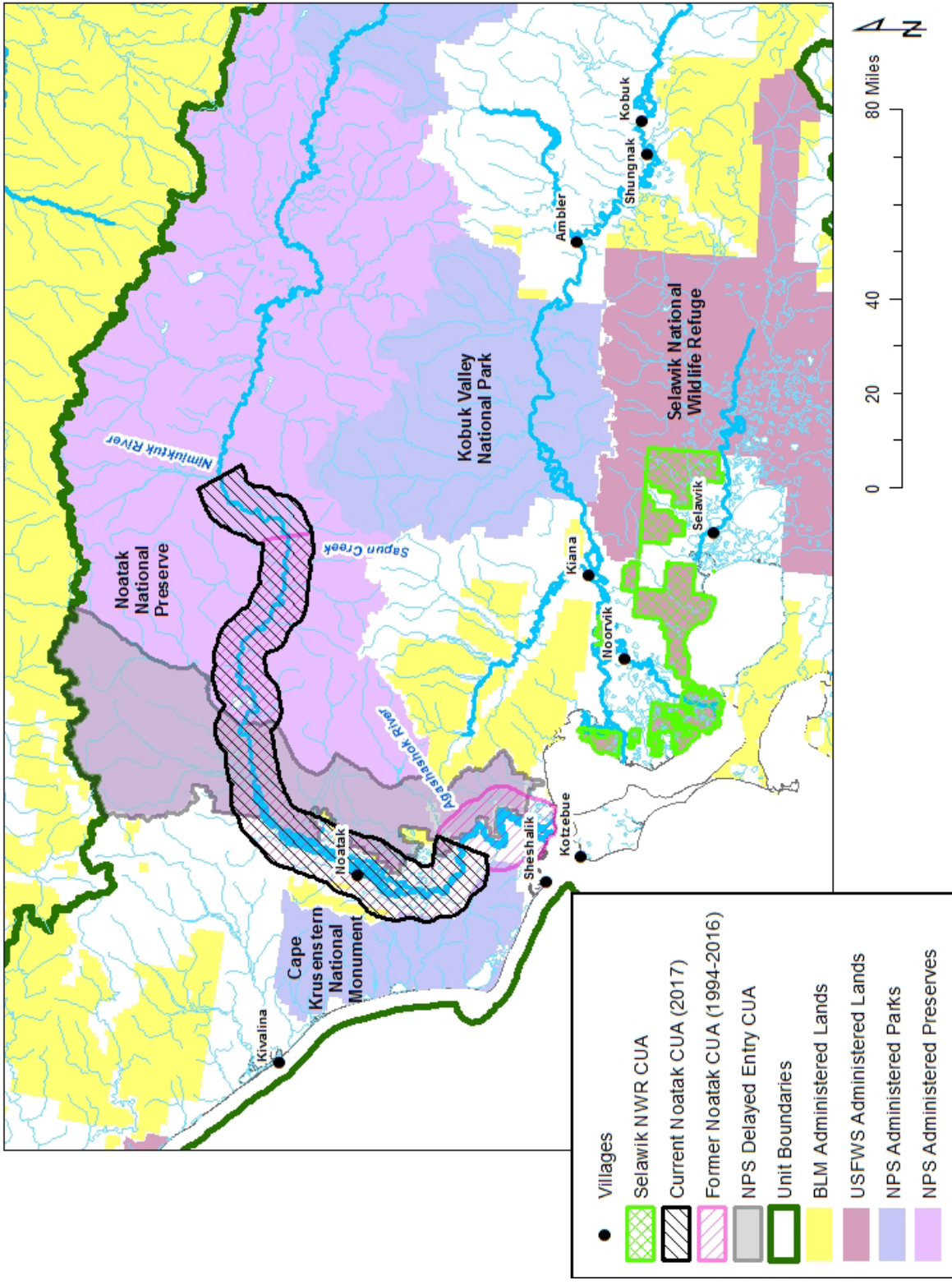
Tribal and ANCSA Corporation Consultations

Tribal and Alaska Native Claims Settlement Act (ANCSA) corporation consultations were held on April 28 and May 26, 2021 by teleconference. 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 Covid-19 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 harvest 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 Northwest Arctic and North Slope, 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.



Map 5. Federal and State Controlled Use Areas in Unit 23.

Public Hearing and Written Comments

The Office of Subsistence Management held a public hearing to solicit comments on WSA21-01 on April 23, 2021 from 3pm to 7:15pm by teleconference. Over 300 people called in, and approximately 120 people gave comments. Written public comments were also accepted between April 16 and April 20, 2021, and 1,221 written comments were submitted. The majority of public comments came from non-Federally qualified users or non-local hunters, guides, transporters, and regular citizens, and were in opposition to the requested closure.

The reasons most frequently given for opposition can be broken down into the following broad categories: (1) decisions regarding wildlife management should always be science-based, and this closure is not supported by available science; (2) the Western Arctic Herd is above management objective; (3) there is not evidence that air traffic has delayed caribou migration; (4) subsistence harvest of caribou has remained high; (5) 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.

A resident of Ambler testified in opposition, expressing concern that his nonrural relatives would not be able to hunt in the region, and asking for the views of all communities in the region to be considered in the decision-making. However, most residents of Units 23 and 26A who participated in public comment opportunities testified in support of the action for reasons that overlap with those described in the above section on tribal and 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 youngest generation. 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.

Western Arctic Caribou Herd Working Group

At the December 9, 2020 meeting of the Western Arctic Caribou Herd (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, the Council did support the Northwest Arctic Regional Advisory 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.

Alaska Department of Fish and Game

Alaska Department of Fish and Game 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 and would prevent non-Federally qualified users with ties to the area from hunting on Federal public lands.

Biological Background

Caribou

The TCH, WACH, and CACH have ranges that overlap in Unit 26A (**Map 6**), and there can be considerable mixing of herds during the fall and winter. 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).

Western Arctic Caribou Herd

Caribou abundance naturally fluctuates over decades (Gunn 2001, WACH Working Group 2011). Gunn (2001) 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 2001, 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 2001).

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 7**, Dau 2011, WACH Working Group 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. In the fall, the majority of the herd generally moves south toward wintering grounds south of the Brooks Range (Joly 2021, pers. comm.). Rut occurs during fall migration (Dau 2011, WACH Working Group 2011).

In recent years, the timing of fall migration has been less predictable. From 2010-2019, the average dates that GPS collared caribou crossed the Noatak River ranged from Sep. 6-Oct. 13; the Kobuk River ranged from Sep. 24-Nov. 3; and the Selawik River ranged from Oct. 2-Nov. 10 (Joly and Cameron 2020). From 2010-2016, caribou migration was trending to occur earlier in the year. However, from 2017-2019, caribou crossed the Noatak River, but then there was substantial delay before caribou crossed the Kobuk and Selawik Rivers (**Figure 1, Table 7**). This appears to have been the case for 2020 as well. 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. While data has yet to be analyzed, the first GPS collared caribou did not cross the Kobuk River until November, which is the latest first crossing since data collection began in 2010 (July 2021, pers. comm.). Reasons for changes in migration phenology are unknown.

The proportion of caribou using certain migration paths also varies each year (**Figure 2**, Joly and Cameron 2020). 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).

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 (WACH Working Group 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 6**).

The WACH population declined rapidly in the early 1970s, bottoming out at about 75,000 animals in 1976. Aerial phot censuses 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 phot census was completed in 2020, but ADF&G plans to conduct a census in 2021 (WACH Working Group 2020).

Between 1982 and 2011, the WACH population was within the liberal management level prescribed by the WACH Working Group (**Figure 3, Table 6**). 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 where it has remained. In 2020, no photocensus was completed, and the WACH Working Group voted to maintain the herd's status at the conservative declining level (WACH Working Group 2020).

Between 1970 and 2017, 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). 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 2016, 85 calves:100 cows were observed, which approximates the highest parturition level ever recorded for the herd (86 calves:100 cows in 1992) (Dau 2016a).

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 2020, SY:adult ratios ranged from 9-26 and averaged 18 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 2020 SY:adult ratio was 17 SY:100 adults (WACH Working Group 2020).

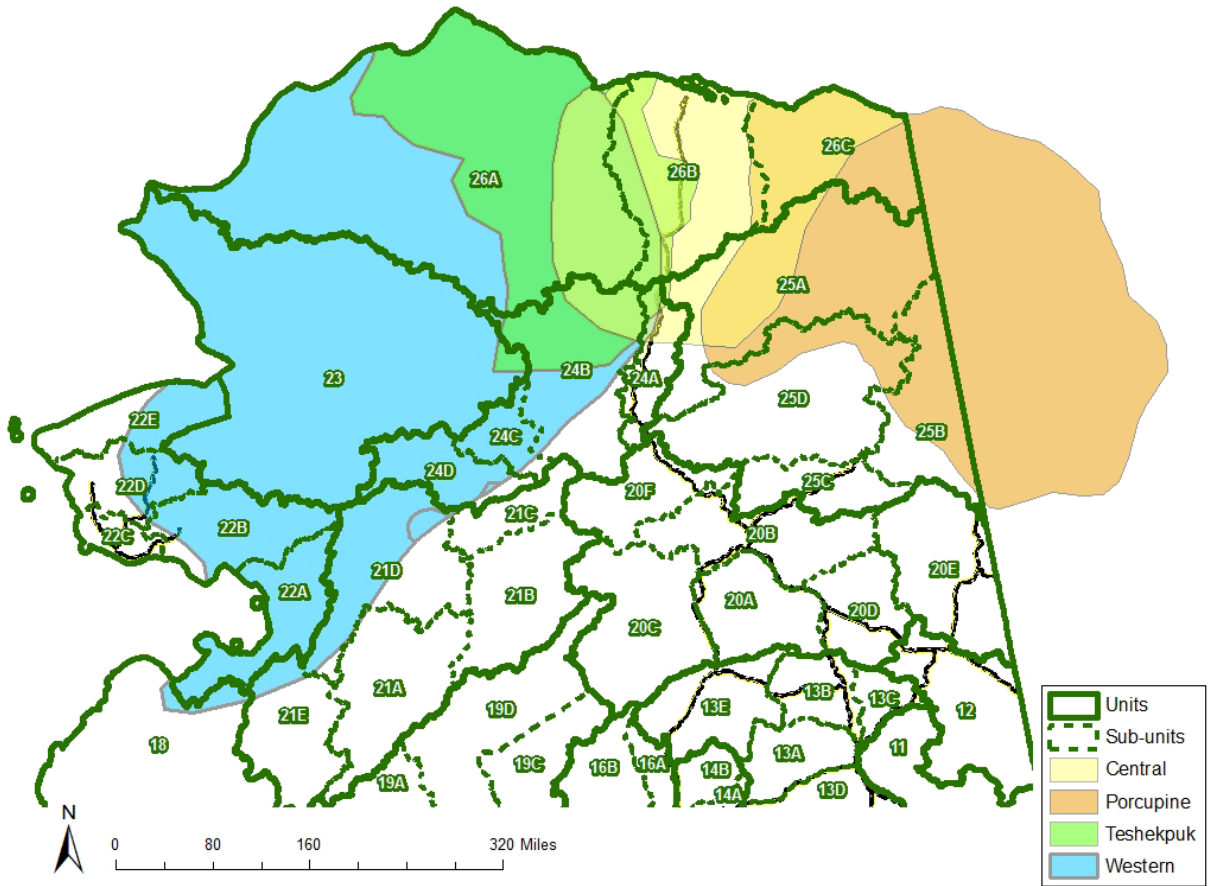
Cow mortality affects the trajectory of the herd (Dau 2011, 2013, Prichard 2009, NWARAC 2019a). The annual mortality rate of radio-collared adult cows increased from an average of 15% between 1987 and 2003 to 23% from 2004-2014 (**Figure 5**, Dau 2011, 2013, 2014, 2015). Mortality rates declined in

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. 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, 2015b, Prichard et al. 2012).

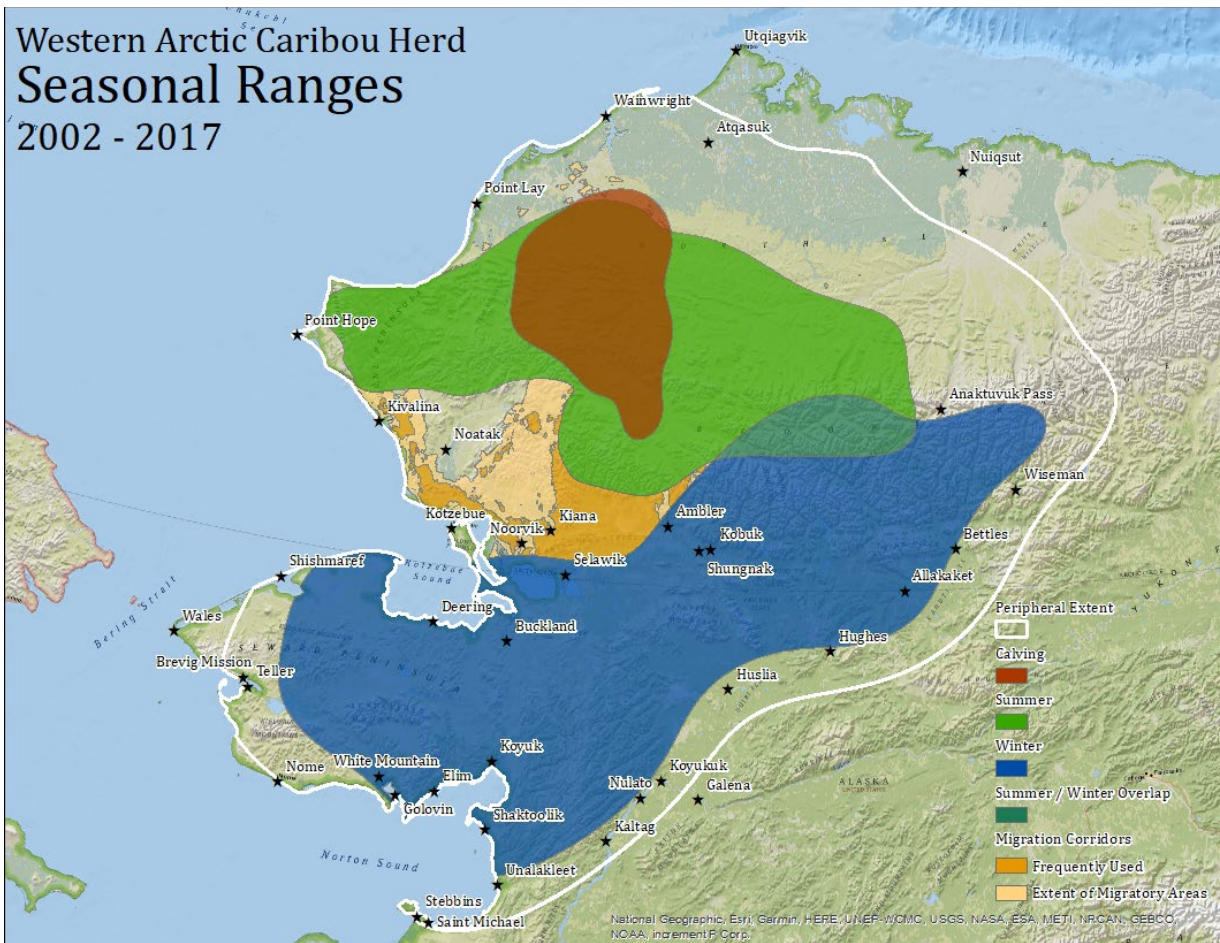
Far more caribou died from natural causes than from hunting between 1992 and 2012 (Dau 2013). Cow mortality remained constant throughout the year, but natural and harvest mortality for bulls spiked during the fall. However, as the WACH has declined and estimated harvest has remained relatively stable, 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). 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.

Dau (2015) speculates that fall and winter icing events were the primary factor initiating the population decline in 2003. Increased predation, hunting pressure, deteriorating range condition (including habitat loss and fragmentation), climate change, and disease may also be contributing factors (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. 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 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.).

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



Map 7. Western Arctic Caribou Herd seasonal range map, 2002-2017 (image from WACHWG 2019).

Table 6. 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+	Pop: 230,000+	Pop: 200,000+	<ul style="list-style-type: none"> 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
	Harvest: 14,000+	Harvest: 14,000+	Harvest: 14,000+	
Conservative	Pop: 200,000-265,000	Pop: 170,000-230,000	Pop: 150,000-200,000	<ul style="list-style-type: none"> 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
	Harvest: 10,000-14,000	Harvest: 10,000-14,000	Harvest: 10,000-14,000	
Preservative	Pop: 130,000-200,000	Pop: 115,000-170,000	Pop: 100,000-150,000	<ul style="list-style-type: none"> 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
	Harvest: 6,000-10,000	Harvest: 6,000-10,000	Harvest: 6,000-10,000	
Critical	Pop: <130,000	Pop: <115,000	Pop: <100,000	<ul style="list-style-type: none"> 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
	Harvest: <6,000	Harvest: <6,000	Harvest: <6,000	

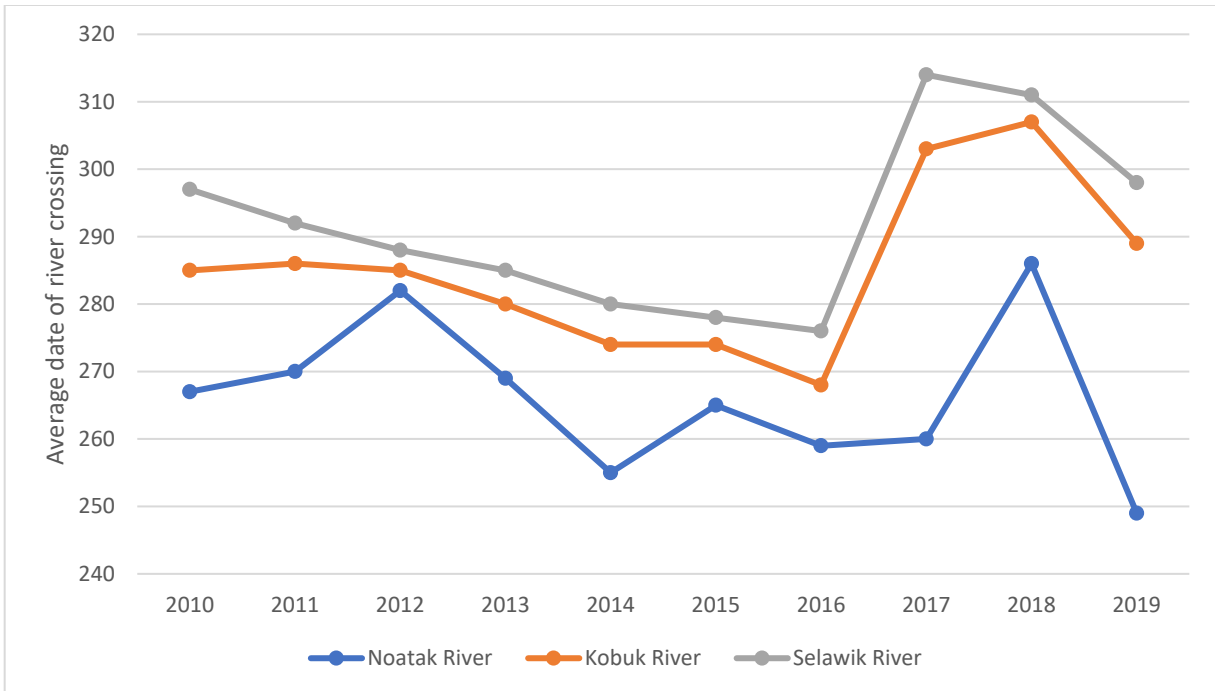


Figure 1. Average dates GPS collared caribou crossed the Noatak, Kobuk and Selawik Rivers during fall migration. Calendar dates were converted to numerical dates (e.g. February 1 would be 32). (Joly and Cameron 2020).

Table 7. 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 2020).

Year	Noatak River Crossing Date (SD); % Crossed; N	Kobuk River Crossing Date (SD); % Crossed; N	Selawik River Crossing Date (SD); % Crossed; N	Duration
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
Ave	Sep 23 (11.4); 77.3%; 49	Oct 12 (12.5); 65.1%; 48	Oct 19 (13.4); 59.2%; 48	27

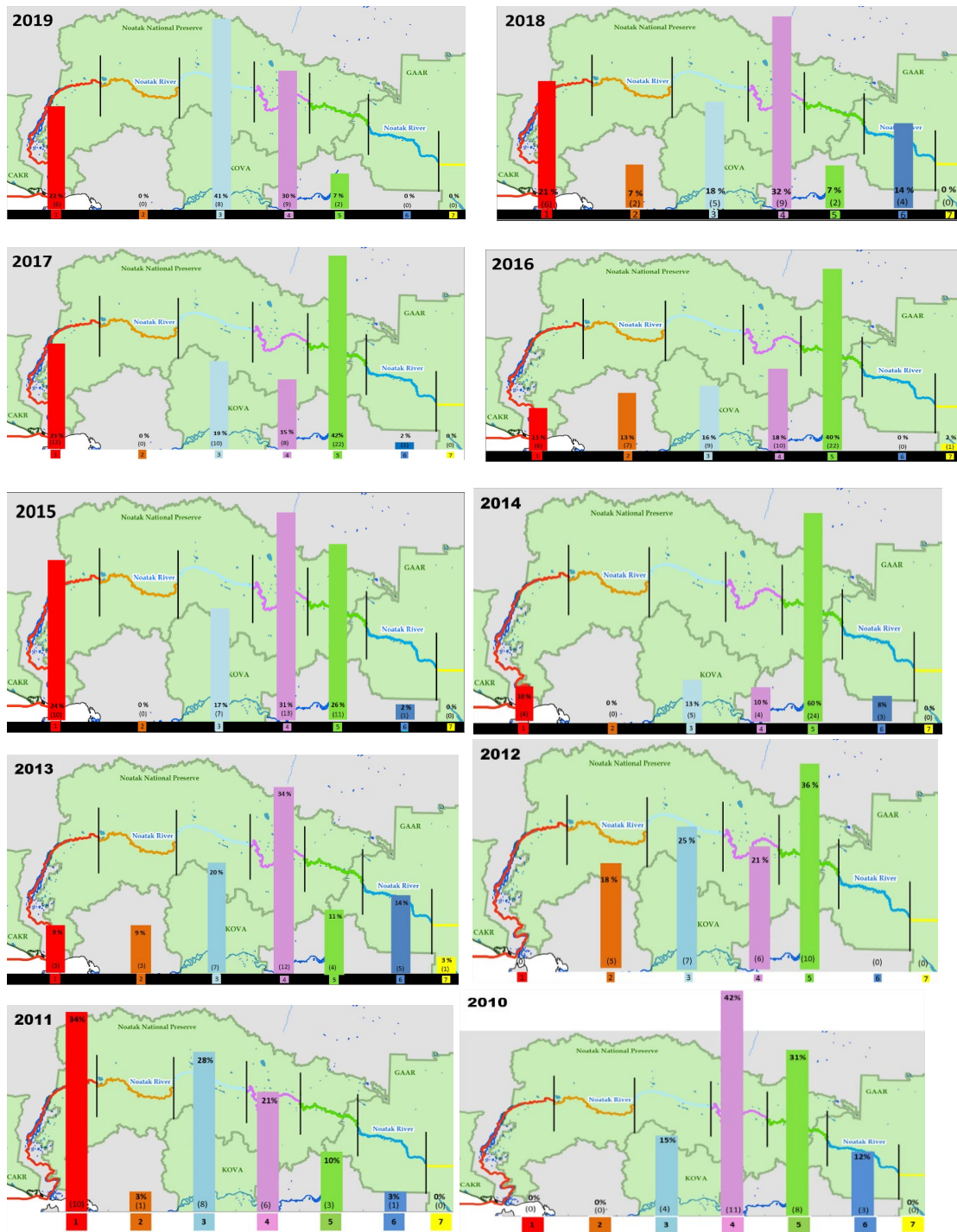


Figure 2. 2010-2019 distribution of caribou crossing the Noatak River during fall. Histograms depict where collared female caribou crossed the Noatak River, generally from north to south, on their fall migration. Relative percentages (top number) and the absolute number (middle number) of caribou are 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 2020).

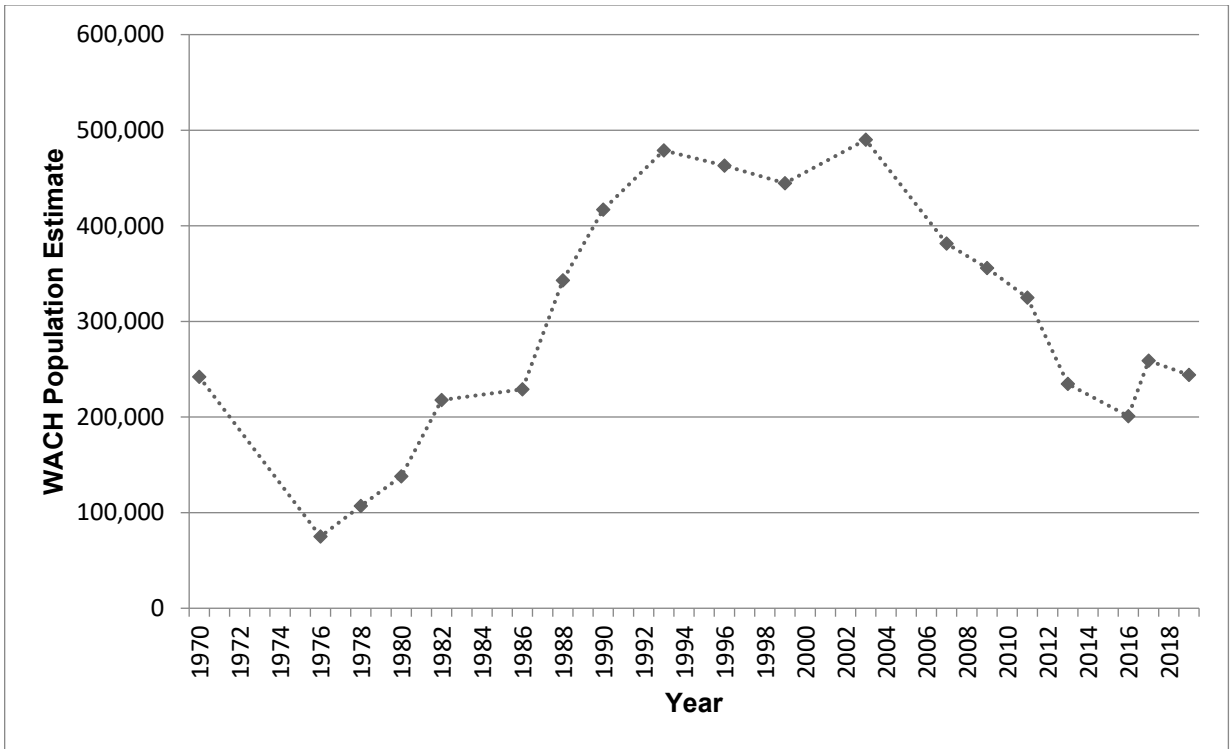


Figure 3. The WACH population estimates from 1970–2017. Population estimates from 1986–2017 are based on aerial photographs of groups of caribou that contained radio-collared animals (Dau 2011, 2013, 2014, Parrett 2016, 2017a, Hansen 2019a).

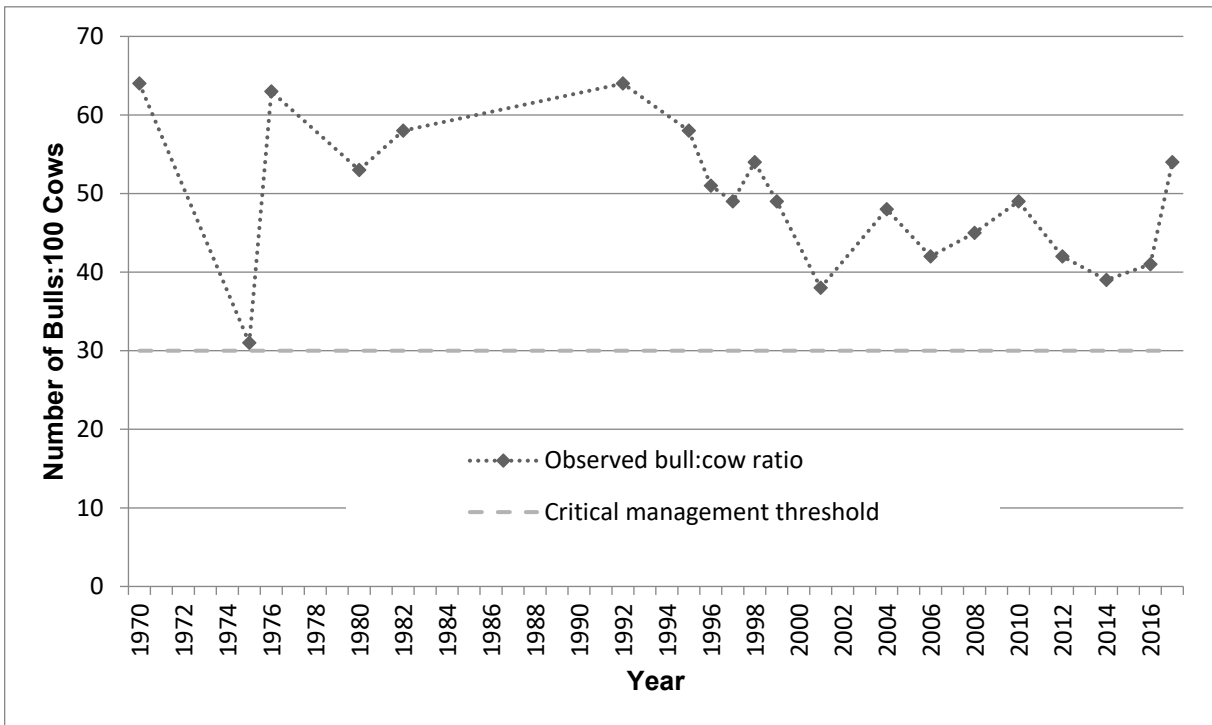


Figure 4. Bull:Cow ratios for the WACH (Dau 2015, ADF&G 2017c, Parrett 2017a).

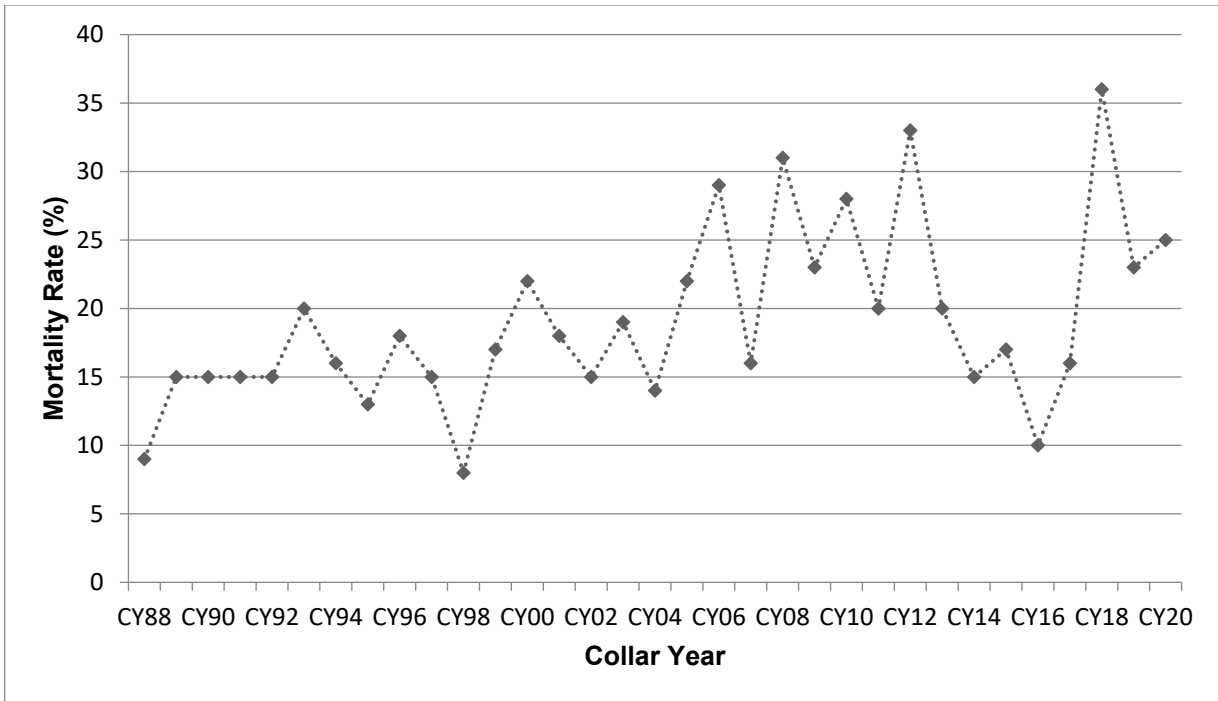


Figure 5. Mortality rate of radio-collared cow caribou in the Western Arctic caribou herd (Dau 2013, 2015, 2016b, NWARAC 2019a, WACHWG 2020). Collar Year = 1 Oct-Sep 30.

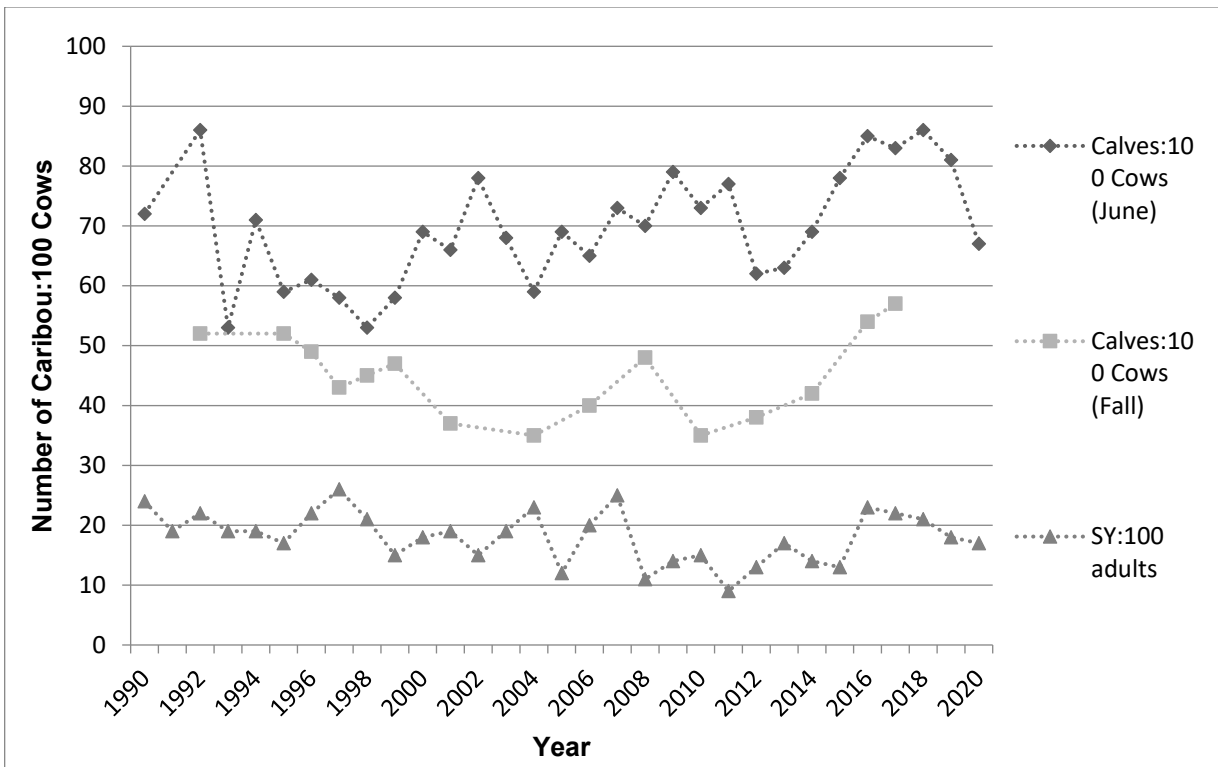


Figure 6. Calf:cow and short yearling (SY):adult ratios for the WACH (Dau 2013, 2015, 2016a, ADF&G 2017c, Parrett 2017a, NWARAC 2019a, WACHWG 2020). Short yearlings are 10-11 months old caribou.

Unit 23 Moose

Moose first appeared in eastern Unit 23 during the 1920s, expanding their range from the east. Over the next several decades, moose spread northwest across Unit 23 to the Chukchi Sea coast (**Map 8**) (LeResche et al. 1974, Tape et al. 2016, Westing 2012). The Unit 23 moose population grew through the late-1980s (Westing 2012). This rise in population was followed by severe winters and extensive flooding from 1988-1991 which, in conjunction with predation by brown bears and wolves, reduced the population and overall moose density (Westing 2012). State management objectives for moose in Unit 23 include (Saito 2014):

- Maintain a unit-wide adult moose population of 8,100-10,000 moose
- Noatak River and northern drainages 2,000-2,300 moose
- Upper Kobuk River drainage 600-800 moose
- Lower Kobuk River drainage 2,800-3,400 moose
- Northern Seward Peninsula drainages 700-1,000 moose
- Selawik River drainage 2,000-2,500 moose
- Maintain a minimum fall ratio of 40 bulls:100 cows, except in the Lower Kobuk where bull:cow ratios are skewed by its disproportional use by maternal cows. The higher bull:cow ratio goals are due to the low densities and wide distribution of moose throughout Unit 23 (Saito 2014).

The NPS, in cooperation with ADF&G, conducts spring population and fall composition surveys for moose in Unit 23. Surveys are conducted within census areas on a rotating basis with each census area being surveyed approximately every five years (**Map 9**, Alaska Board of Game 2017). Census areas have fluctuated throughout the years due to time and financial constraints as well as evolving survey techniques (Saito 2017, pers. comm.). In 2012, the Squirrel River drainage was moved from the Lower Noatak census area to the Lower Kobuk census area (Saito 2014). In 2014, the Upper Kobuk census area was expanded to include previously unsurveyed areas (Saito 2017, pers. comm.). Current census areas are static for the foreseeable future.

Moose density is primarily influenced by local factors such as snow depth, fire frequency, forage availability, and predators (Gasaway et al. 1992, Stephenson et al. 2006, Boertje et al. 2009, Street et al. 2015). Therefore, moose in Unit 23 are not evenly distributed across the landscape, with some drainages experiencing higher densities of moose than others. Between 2001 and 2017, total moose densities ranged across census areas from 0.03-0.7 moose/mi² while adult moose densities ranged from 0.03-0.59 moose/mi² (**Table 8**, Robison 2017, Saito 2014, 2016, pers. comm.).

Since 2009, the estimated moose population in almost every census area has declined (**Figure 7**). (Note: While the population estimate for the Selawik River drainage survey area increased between the 2016 and 2021 surveys, the increase is very small and still well below the 2011 estimate. The apparent decline in the Upper Kobuk is not statistically significant). The most recent population estimates are also well below State population objectives in every area except the Upper Kobuk, which just meets its lower State population objective (**Table 9**, Saito 2014, 2016a, pers. comm., Robison 2017, NWARAC

2019a). An estimated 70% of the Unit 23 moose population is found in the Selawik, Lower Kobuk, and Lower Noatak River census areas (NWARAC 2018a). All three of these areas have experienced substantial population declines. (Note: both the old (smaller) and new (larger) Upper Kobuk census areas were surveyed in 2014. The old census area data is depicted in **Figure 7** for better comparability across years while the new census area data is listed in **Table 9**).

In 2016 and 2017, ADF&G provided a unit-wide population estimate of 7,500 moose (ADF&G 2017a). In 2018, ADF&G estimated the Unit 23 moose population at 6,300 moose, representing a 16% decline (NWARAC 2018a). The most recent unit-wide moose population estimate was reported at 5,600 moose in a comment on WSA19-04 submitted by ADF&G. This represented an additional 11% decline in the population since the 2018 estimate. The Council and the public have also repeatedly reported at recent meetings that there are noticeably fewer moose than in the past (NWARAC 2017a, 2018a).

ADF&G conducts composition surveys in the fall to estimate bull:cow and calf:cow ratios. In 2008, ADF&G changed the methodology of fall composition surveys, and data are not comparable between survey methods (Saito 2014). From 2004-2007, Unit 23 bull:cow ratios averaged 39 bulls:100 cows. Since 2008, bull:cow ratios have ranged across survey areas from 34-54 bulls:100 cows, although composition surveys are conducted sporadically (**Table 10**) (Saito 2014, 2016a pers. comm., 2018 pers. comm.). In all census areas with multiple composition surveys since 2008, bull:cow ratios have declined and are below or near the State management objectives (**Table 10**). However, composition surveys are not a random sampling and are likely biased toward higher bull:cow ratios. This is because cows, particularly cows with calves, prefer more enclosed habitat for predator protection, which also makes them more difficult to see by aerial surveyors (Fronstin 2021, pers. comm.).

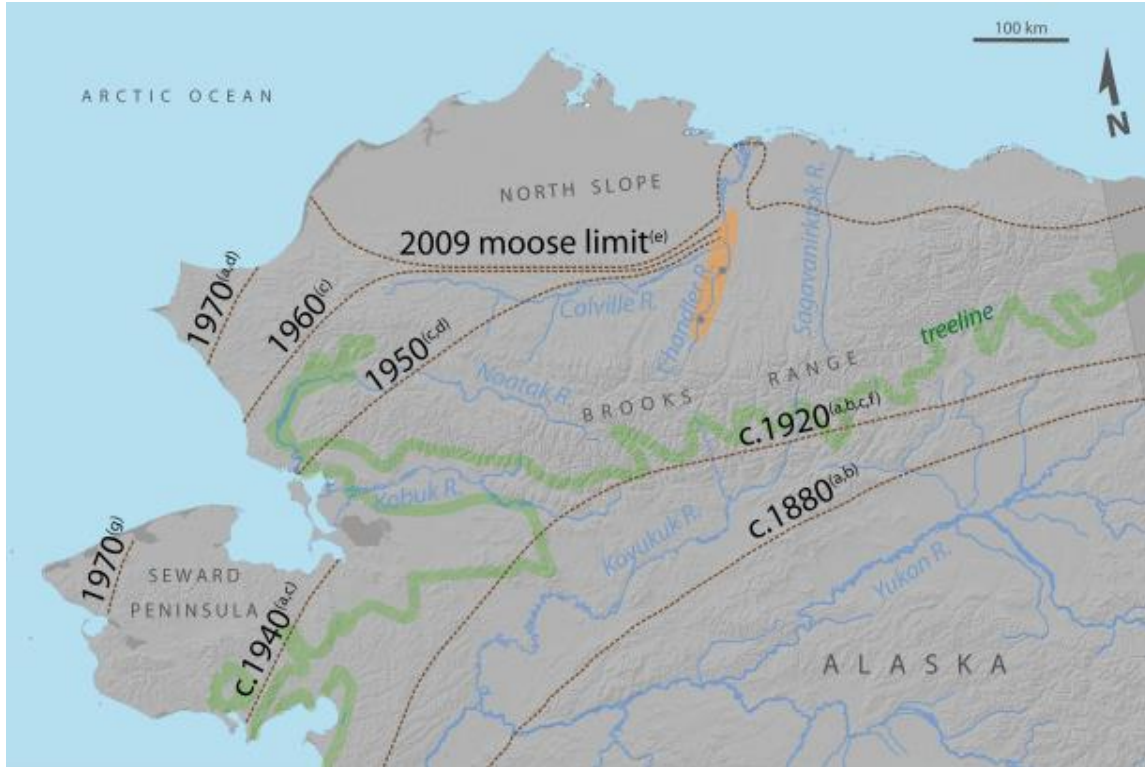
Fall calf:cow ratios of < 20 calves:100 cows, 20-40 calves:100 cows, and > 40 calves:100 cows may indicate declining, stable, and growing moose populations, respectively (Stout 2010). Since 2008, calf:cow ratios have ranged across survey areas from 4-24 calves:100 cows (**Table 10**) (Saito 2014, 2016a pers. comm., 2018 pers. comm.). These low calf:cow ratios suggest that the Unit 23 moose population is declining, with the possible exception being the Lower Kobuk survey area which has a larger percentage of maternal cows. During spring population surveys, ratios of calves:100 adults are also estimated as a measure of recruitment. Between 2001 and 2021, ratios ranged across survey areas from 7-23 calves:100 adults (Saito 2016a, pers. comm., 2018, pers. comm., Robison 2017, NWARAC 2019a, Fronstin 2021, pers. comm.). No clear trend is detectable with ratios increasing over time in some survey areas and decreasing or fluctuating in others.

While predation by brown bears, black bears, and wolves affects moose population dynamics in Unit 23, the overall level of impact of predators in relation to other factors such as weather, snow depth, disease, and human harvest is unknown, although deep snow and icing events limit moose movements, increasing their susceptibility to predation (Saito 2014, Fronstin 2018 pers. comm.). Relatively high moose densities and calf:cow ratios in the Kobuk River delta, where predator populations are lower due to its proximity to year-round human travel routes, suggest predators may be affecting moose in the more remote portions of the unit and that cows with calves may travel to the delta for safety (Saito

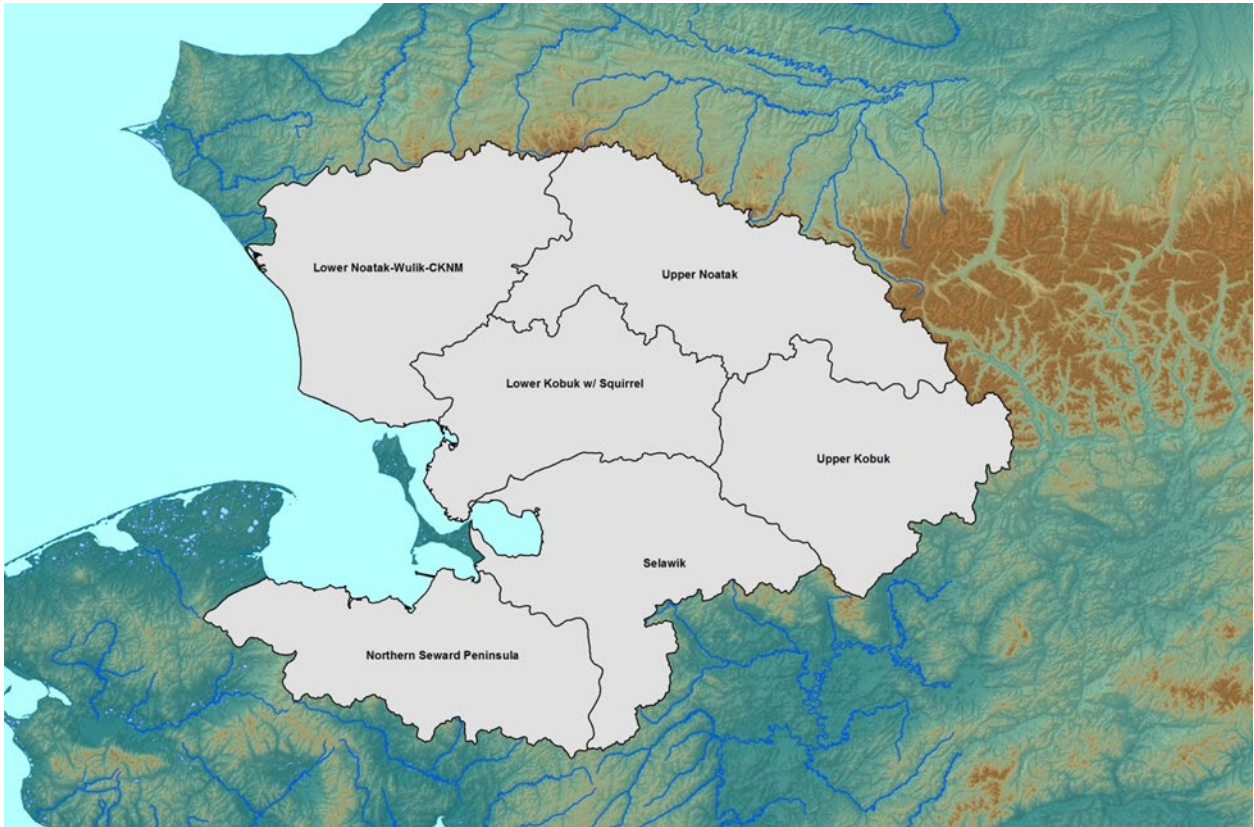
2014, Fronstin 2021, pers. comm.). However, preliminary results from a 3-year (2018-2020) calf survival study in the Lower Kobuk drainage indicate survival rates of around 65% for the first year with 77% of mortalities occurring from bear predation (108 out of 140 mortalities), which is comparable to other moose populations in Alaska (Hansen 2021, NWARAC 2018b). Further, the Lower Kobuk is primarily composed of the Kobuk River delta, which provides extensive riparian habitat. Thus, the situation mirrors the results from neighboring Unit 24, where moose productivity was higher where vegetative productivity was higher (Joly et al. 2017). As humans primarily harvest bull moose and bull:cow ratios have not substantially declined across years despite substantial population declines, human harvest may not be a limiting factor (NWARAC 2017b).

As moose are on the edge of their range in Unit 23, lower moose densities and habitat limitation are expected. However, the Unit 23 moose population does not appear to be nutritionally limited in the lower Kobuk survey area (Hansen 2021). A 2017 browse survey, completed in the Lower Kobuk, suggested that winter forage is not a limiting factor for moose populations with browse removal rates of only 19% (Hansen 2021, NWARAC 2018a). Twinning rates are another indicator of habitat and food limitations. From 2016-2020, 36-55% of cows surveyed in the Lower Kobuk had twins, further suggesting food is not a limiting factor and the population is not experiencing a density-dependent response (NWARAC 2018a). However, as stated above, the lower Kobuk area contains higher quality habitat and correspondingly higher moose densities than the rest of the unit.

Moose rely on willow and shrub habitats for browsing and for cover from predators. Shrub and willow productivity, height, and cover have increased and expanded in Unit 23 in response to rising average temperatures (Tape et al. 2016). Taller vegetation provides more suitable cover and increased available forage above the snowpack (Tape et al. 2016). Wildfire (the primary driver of boreal forest succession) frequency and shrub habitat is also forecasted to increase in Northern Alaska as the Arctic climate warms, resulting in more moose habitat in Unit 23 in the future (Joly et al. 2012, Swanson 2015). During a 2005 habitat survey in Unit 23, willows did not appear to be over-browsed by moose (Westing 2012).



Map 8. Temporal moose distribution changes in northern Alaska (figure from Tape et al. 2016).



Map 9. ADF&G moose census areas in 2017 (figure from Saito 2017, pers. comm.).

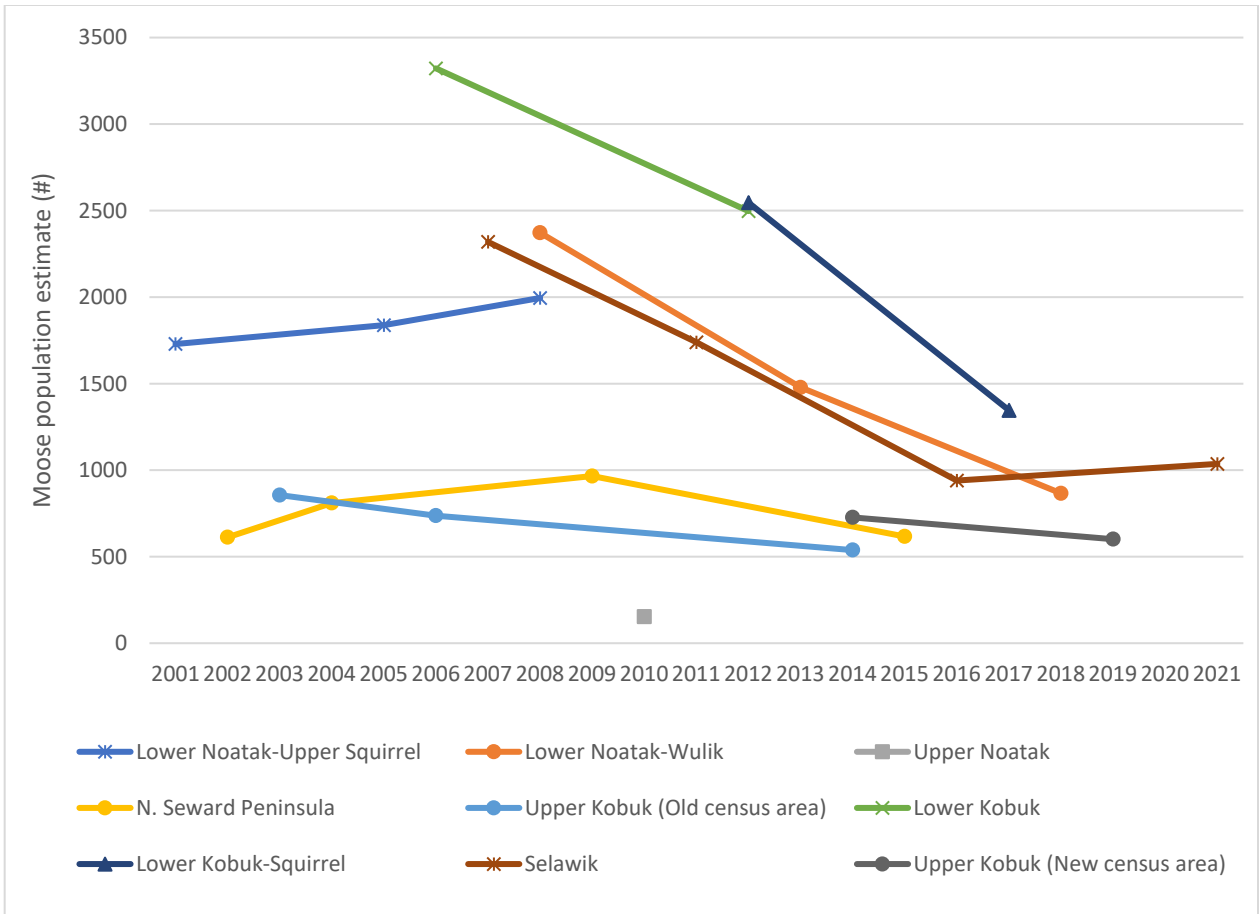


Figure 7. Total moose population estimates from 2001 to 2019 by census area. The old Upper Kobuk and new Upper Kobuk census area population estimates are both shown here (Fronstin 2021, pers. comm.).

Table 8. Moose population data collected during spring population census surveys in Unit 23 since 2001. The Upper Kobuk was surveyed in 2014 using both the older census area and the updated census area (Fronstin 2021, pers. comm.).

Census Area	Year	Moose Observed	Total Moose Estimated	Census Area (mi ²)	Area Surveyed (mi ²)	Total Density (/mi ²)	Adult Density (/mi ²)	Calves:100 adults
Lower Noatak-Upper Squirrel	2001	709	1,729	5,230.2	832	0.33	0.3	10
	2005	575	1,838	5,349.7	915.5	0.34	0.3	13
	2008	596	1,995	5,290.0	1,241.7	0.38	0.34	13
Lower Noatak-Wulik	2008	685	2,372	7,161.1	1,515.4	0.33	0.29	14
	2013	413	1,478	6,404.5	1,310.2	0.23	0.21	11
	2018	489	866	6,404.5	2,325.4	0.14	0.12	14
Upper Noatak	2010	100	153	4,485.6	1,972.1	0.03	0.03	12
Northern Seward Peninsula	2002	520	612	5,888.5	1,220.7	0.1	0.1	7
	2004	610	810	5,882.9	1,934.3	0.14	0.12	12
	2009	293	966	5,773.2	1,271.2	0.17	0.16	8
	2015	310	617	5,767.8	1,791.2	0.11	0.09	15
	2020	433	--	--	--	--	--	22
Upper Kobuk	2003	252	856	4,001.5	900.6	0.21	0.19	12
	2006	219	737	4,001.5	973.7	0.18	0.16	15
	2014	136	538	3,990.8	839.2	0.13	0.13	7
	2014	186	727	5,056.8	1,082.5	0.14	0.13	7
	2019	328	601	5,056.8	2,139.1	0.12	0.1	23
Lower Kobuk	2006	1,540	3,322	4,870.5	1,468.1	0.68	0.58	19
	2012	789	2,497	4,870.5	1,457.6	0.51	0.48	8
Lower Kobuk-Squirrel	2012	789	2,546	5,338.0	1,290.8	0.48	0.44	8
	2017	796	1,346	5,338.0	2165.2	0.25	0.22	15
Selawik	2007	678	2,319	6,580.1	1,845.2	0.35	0.32	10
	2011	448	1,739	6,559.0	1,289.1	0.27	0.24	11
	2016	520	940	6,559.0	2,273.0	0.14	0.13	14
	2021	--	1,036	--	--	--	--	10

Table 9. Comparisons across Unit 23 study areas of the most recent moose population estimates, population objectives, and harvestable surpluses. The harvestable surplus is calculated as 6% of the population. The Upper Kobuk census area represents the updated census area that was created in 2014. The spring 2017 and 2018 surveys in the Lower Kobuk and Lower Noatak-Wulik survey areas, respectively are incorporated in the table, but not into the extrapolated population total. Extrapolated total incorporates estimated populations in non-surveyed portions of Unit 23 (Robison 2017, Saito 2016a pers. comm., 2018 pers. comm., NWARAC 2018a, 2019, Fronstin 2021, pers. comm.).

Unit 23 Study Area	Most recent survey year	Population Estimate	Population Objective	Estimated Harvestable Surplus
Noatak River Drainages	2010 (Upper), 2018 (Lower)	1,019	2,000- 2,300	61
Lower Kobuk River Drainage	2017	1,346	2,800- 3,400	81
Upper Kobuk River Drainage	2019	601	600-800	36
Selawik River Drainage	2021	1,036	2,000- 2,500	62
Northern Seward Peninsula	2015	617	700-1,000	37
Total		4,619		277
Extrapolated 2017 Total		7,500		450
Extrapolated 2018 Total		6,300		378
Extrapolated 2019 Total		5,600		336

Table 10. Bull:cow and calf:cow ratios in fall composition surveys conducted after 2007 (Saito 2014, 2016a pers. comm., 2018 pers. comm., Fronstin 2021, pers. comm.).

Survey Area	Year	Bulls:100 Cows	Calves:100 Cows
Selawik	2008	54	18
	2010	47	19
	2015	43	20
Lower Kobuk	2011	45	15
	2017	38	34
Lower Noatak	2013	53	4
	2018	41	17
Northern Seward Peninsula	2009	53	4
	2020	52	
Seward Peninsula	2014	34	16

Unit 26A Moose

Prior to the 1940s, moose were scarce along the North Slope. Subsequently, populations expanded along the limited riparian habitat of the major drainages (LeResche et al. 1974) and have become well established in the southeast portion of Unit 26A. The northern extent of the moose populations on the North Slope is thought to be limited by habitat availability. The moose in these areas tend to concentrate along riparian corridors where browse is most abundant. Nearly all the moose are confined to the riparian habitat along the large river corridors during the winter but during summer many of the moose disperse north across the coastal plain and south into the foothills of the Brooks Range (Klimstra and Daggett 2020).

Recommended State management objectives for moose in Units 26A are (Klimstra and Daggett 2020):

- Manage for a population of 600-800 moose
- Manage for a fall bull:cow ratio of $\geq 30:100$
- Manage for a fall calf:cow ratio of $\geq 30:100$
- Manage for \geq to 20% short yearlings in spring

Since the late 1970s, ADF&G has conducted spring aerial surveys in all the major drainages of Unit 26A to assess population status and recruitment of short yearlings (10 to 11 months old) (Carroll 2000, 2010). These surveys produce a direct population count because the treeless landscape results in a sightability factor of one, and the deep spring snows concentrate moose in riparian corridors, which are all systematically surveyed. Of note, all the population counts included the Ikillik River, which is part of the Colville River drainage, but is in Unit 26B (Carroll 2010). Between 1970 and 2021, the Unit 26A moose population fluctuated, ranging from 294-1,535 moose (**Table 11**). Currently, the Unit 26A moose population is relatively low, but may be rebounding. Over the same time period, the percentage of short-yearlings ranged from 1-25% of the Unit 26A moose population (Klimstra and Daggett 2020, Daggett 2021, pers. comm.) (**Table 11**).

The periods of population declines resulted from poor calf survival and high adult mortality. Moose mortality was likely due to malnourishment, bacterial diseases, mineral deficiencies, predation from wolves and bears, weather factors, and competition with snowshoe hares for browse. In 2008, weights of short yearlings averaged 322 pounds, which was the lightest recorded in Alaska and an indicator of malnourishment. Human harvest of moose is very low and likely does not significantly influence abundance of the Unit 26A moose population (Klimstra and Daggett 2020).

ADF&G also periodically conducts fall composition surveys. Between 2010 and 2014, bull:cow ratios ranged from 42-97 bulls:100 cows, exceeding the State population goals. Over the same time period, the percentage of calves in the population ranged from 7-18% with the lowest calf:cow ratio occurring in 2014 (Klimstra and Daggett 2020). No composition surveys have been conducted since 2014 (Daggett 2021, pers. comm.).

Table 11. Moose observed during spring aerial censuses conducted in Unit 26A (Carroll 2010, OSM 2013, Klimstra and Daggett 2020, Daggett 2021, pers. comm.).

Year	Moose observed			% Short yearlings
	Adults	Short yearlings	Total ^a	
1970	911	308	1,219	25
1977	991	267	1,258	21
1984	1,145	302	1,447	21
1991	1,231	304	1,535	20
1995	746	11	757	1
1999	274	52	326	16
2002	502	74	576	13
2005	863	185	1,048	18
2008	1,023	157	1,180	13
2011 ^b	545	64	609	11
2014	290	4	294	1
2017	285	63	348	17
2021	349	88	437	20

^a Includes moose counted on the Itkillik River which is part of the Colville River drainage, but is in Unit 26B. In 2008, there were 64 moose, including 4 calves on the Itkillik River (Carroll 2010).

^b Information provided by Geoff Carroll (Carroll 2013, pers. comm.).

Habitat

Moose in Unit 26, which are on the extreme edge of their distribution, are limited by marginal habitat and thus are more vulnerable to environmental variations than populations in more optimal locations and habitat. During the winter the moose in this area are confined to the riparian areas on the coastal plain. During the summer a majority of them will disperse from the river bottoms but usually remain near riparian habitat and during the fall, when the snow begins to accumulate, they move back to the riparian corridors of the large river systems (Carroll 2010).

A habitat study was initiated in April 2008 on the Colville River in areas where moose browsed between the mouth of the Killik River and Umiat to determine the quantity of browse available to moose in the riparian area in the winter. Results indicated a 12% browse removal rate, which was similar to other areas in the State which have moderate browsing and twinning rates. Thus it appears that the poor survival rate of collared animals, low weights of the short-yearlings, and apparent starvation of several moose during the 2008 capture season was not related to the quantity of browse in Unit 26A (Carroll 2010). Quantity and availability (willows covered up by snow drifts), accessibility (effects of deep snow on access), and

increased tannins in the willows (in response to snowshoe hares eating the bark) are factors which could contribute to malnourishment seen in some of the moose. In 2009, samples were taken to assess the quality of the browse but the results are not currently available (Carroll 2010).

Harvest History

Western Arctic Caribou Herd

The State manages the WACH on a sustained yield basis (i.e. managing current harvests to ensure future harvests). The harvestable surplus when the WACH population trend is declining is calculated as 6% of the estimated population (WACH Working Group 2011, Parrett 2017b, pers. comm.). In 2017, the WACH harvestable surplus was 15,540 caribou (6% of 259,000 caribou). Assuming the herd population remained stable in 2018 and 2019, the harvestable surplus remains 15,540 caribou. This is a substantial increase from the 2016 harvestable surplus of 12,056 caribou when harvest likely exceeded sustainable levels. However, there is substantial uncertainty in harvestable surplus estimates (Parrett 2015a, Dau 2015). 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, 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 1999–2017, the average estimated total harvest from the WACH was 14,119 caribou/year, ranging from 11,729–16,219 caribou/year (Hansen 2020, pers. comm., **Figure 8**). These harvest levels are within the conservative harvest level specified in the WACH Management Plan (**Table 6**). In 2015 and 2016, total local harvest estimates were 14,360 caribou and 14,971 caribou, respectively (Hansen 2019b, pers. comm.). While these harvest estimates are below the 2017–2019 harvestable surpluses, they exceed the 2016 harvestable surplus. Of note, harvest estimates do not include wounding loss, which may be hundreds of caribou (Dau 2015).

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 (**Figure 9**, ADF&G 2017c). Comparison of caribou harvest by community from household survey data (**Table 15**) 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.

Between 1998 and 2018, annual reported caribou harvest in Unit 23 ranged from 168-676 caribou (**Figure 10**). 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 10**). On average, 76% of WACH caribou harvested by nonlocals are harvested in Unit 23 (Dau 2015). Between 2016, when Federal lands closure began, and 2019, reported caribou harvest by non-local hunters in Unit 23 averaged 161 caribou (WinfoNet 2018, 2019).

From 1999-2013, 72% of nonlocal hunters on average accessed the WACH by plane. Most nonlocal harvest (85-90%) occurs between Aug. 25 and Oct. 7. In contrast, 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.

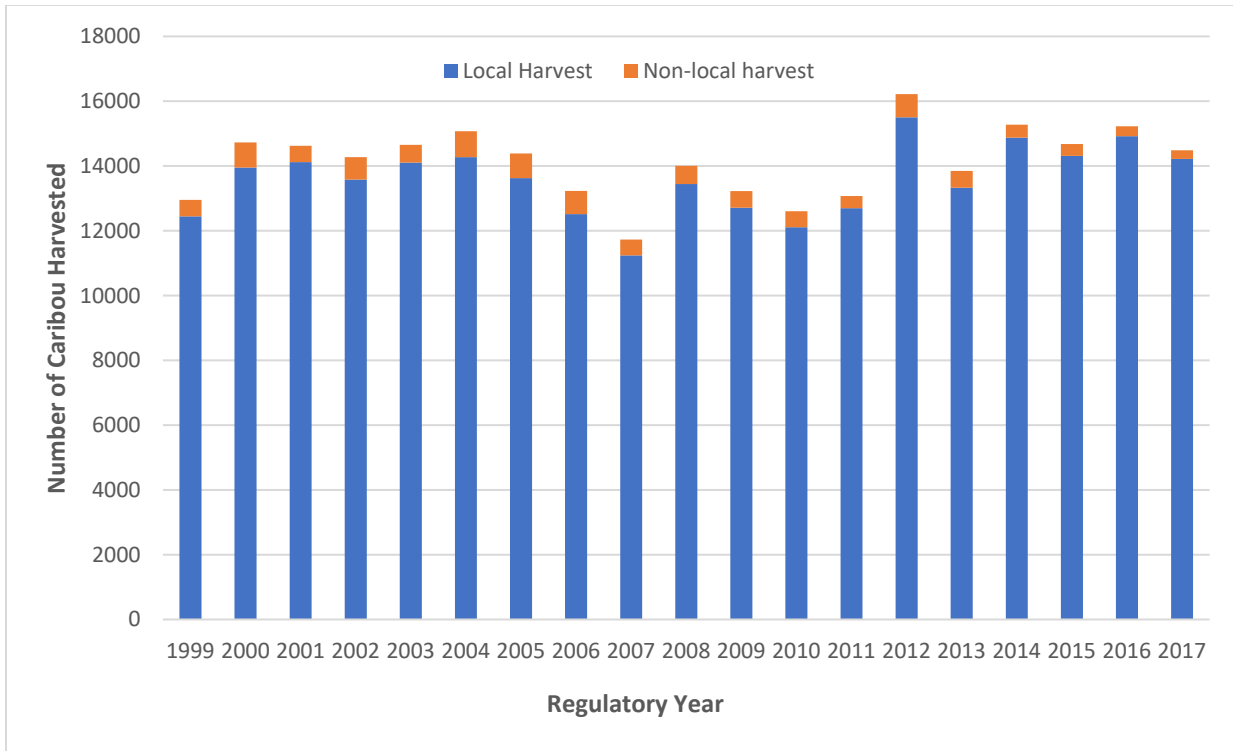


Figure 8. Estimated number of caribou harvested from the WACH by residency (Hansen 2020, pers. comm.). Local harvest is an estimate derived from models; non-local harvest is from harvest reports.

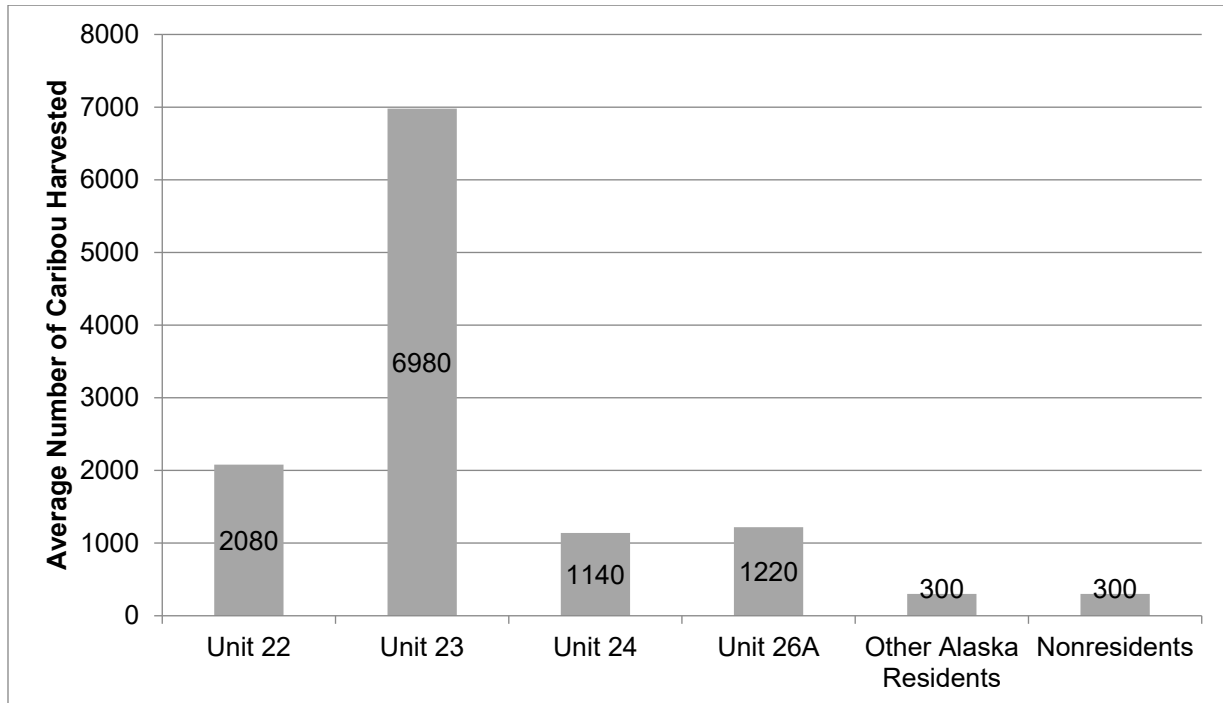


Figure 9. Average number of caribou harvested by unit and residency from 1998-2015 (ADF&G 2017c).

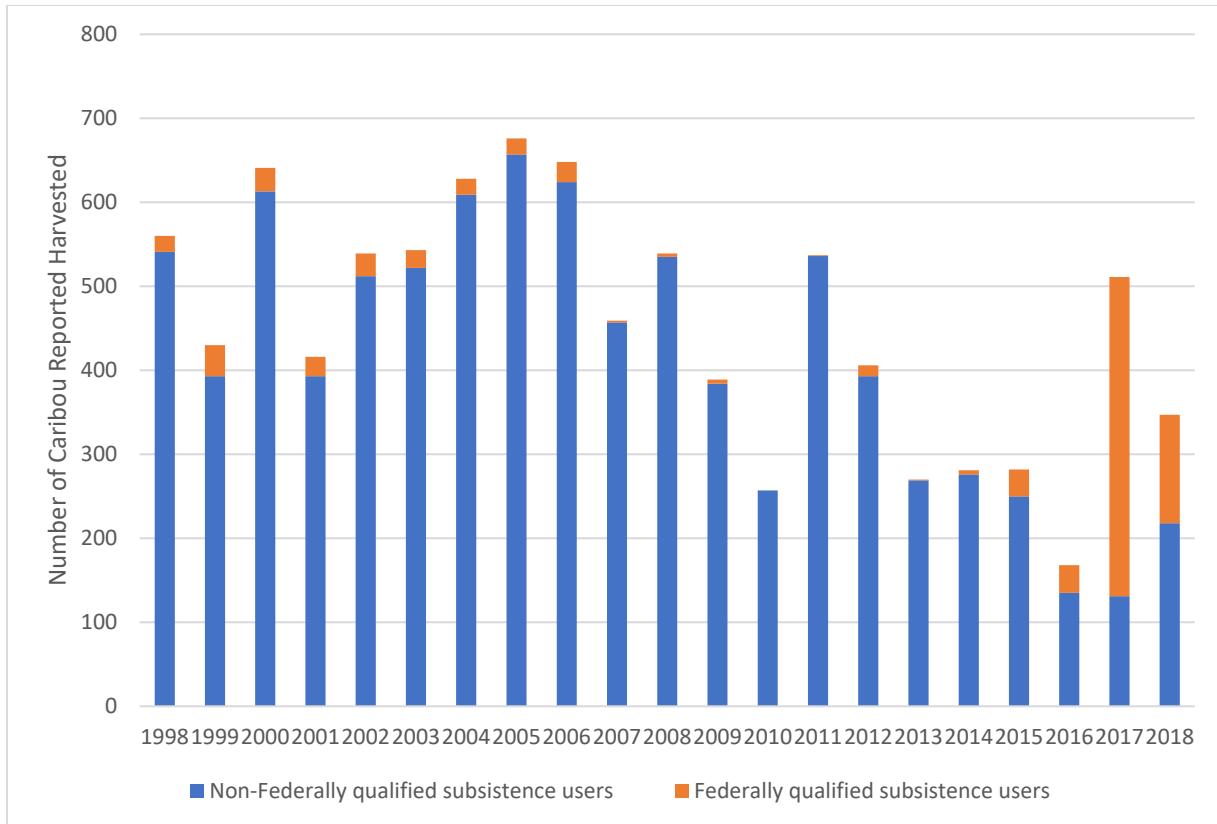


Figure 10. Reported caribou harvest in Unit 23 (WinfoNet 2018, 2019).

Unit 23 Moose

Harvest data is derived from State harvest reports and community household surveys. Community household surveys are used, in part, as a method to determine whether harvest is being reported accurately in State harvest reports. Harvest reports provide data on an annual basis. Community household surveys gather data from local communities pertaining to subsistence harvest on an irregular basis, with many communities only being visited once over a ten year time span. In Unit 23, community household surveys show that moose harvest is underreported by local users (users residing in Unit 23), but nonlocal user harvest can be assumed accurate based on the requirement of a registration permit (RM880) for the any-antlered bull resident harvest and drawing permits for non-resident harvest (before the non-resident hunt was closed). This section will discuss State harvest report data prior to reviewing community household survey data.

Between 2005 and 2019, total reported moose harvest in Unit 23 ranged from 55-189 moose, averaging 133 moose (**Table 12**) (ADF&G 2016, 2018a). The lowest reported harvest was in 2018, after ADF&G cancelled the nonresident moose season and Federal public lands were closed to moose harvest except by Federally qualified subsistence users for part of the December season (WSA18-04). Local resident (residents of Unit 23), nonlocal resident, and nonresident reported harvest averaged 72 moose (55%), 40 moose (30%), and 20 moose (15%) per year, respectively (**Table 12**) (ADF&G 2016, 2021). Cows comprised 7% of the annual reported harvest on average, with 1-21 cows being harvested each year, although the actual cow harvest is likely double what is reported (Alaska Board of Game 2017). The vast

majority of moose are harvested in September (**Figure 11**) (WINFONET 2017). Since 2006, more moose have been harvested from the Kobuk River drainage than from other drainages within Unit 23 (**Figure 12**) (ADF&G 2017a). Moose hunting is the primary activity by nonlocal users on Selawik National Wildlife Refuge (Georgette 2017, pers. comm.).

Since 2000, community household survey data has indicated 350-450 moose are harvested each year by local residents (Saito 2014). In regulatory year 2012/13 specifically, ADF&G estimated moose harvest by local residents as 342 moose (Saito 2014). When community harvest data is taken into account, local residents represent approximately 73% (2015) of the Unit 23 annual harvest, conservatively (NWARAC 2017b). The only community household survey data available for the number of cow moose harvested by local residents are for 2008 and 2009 in the villages of Noorvik, Shungnak, Ambler, Buckland, Kiana, and Kobuk. These data indicate 3 out of 67 total moose harvested were cows, although 6 moose were of unknown sex (ADF&G 2018b).

ADF&G calculates the harvestable surplus of moose in Unit 23 as 6% of the population (Saito 2016a, pers. comm.). As the 2018 unit-wide population estimate was 6,300 moose, 378 moose was the estimated harvestable surplus. In 2019, the population estimate and harvestable surplus declined to 5,600 moose and 336 moose, respectively. Reported harvest by nonlocal residents and nonresidents (~67 moose/year) combined with community household survey harvest estimates for local residents (350-450 moose/year) indicate that total Unit 23 moose harvests likely exceed the harvestable surplus. While the State has closed the nonresident season, and nonlocal resident reported harvest declined in 2016 and 2017 (**Table 12**), harvest estimates by local residents alone may still exceed the harvestable surplus (Saito 2014).

Harvest within individual drainages may be particularly high or have disproportionate effects on the population. For example, ADF&G estimates that approximately 70 moose are taken from Selawik drainage each year, which translates to a 7% harvest rate (**Figure 12**) (NWARAC 2016a). During winter months, large congregations of moose have been observed near villages, which can make these moose highly susceptible to harvest (Alaska Board of Game 2017). The Lower Kobuk River drainage hosts a disproportionate number of maternal cows, possibly because this area appears to support fewer large predators due to its proximity to human travel corridors (Saito 2014). More moose are also harvested from the Kobuk River drainage than any other drainage (**Figure 12**). This suggests cow moose in the Kobuk River drainage are particularly susceptible to harvest, although the taking of cows with calves is prohibited under both State and Federal regulations, and the cow moose hunt is now closed under both Federal and Subsistence regulations. While recent restrictions to State regulations have decreased reported moose harvest, decline of the Western Arctic Caribou Herd has likely increased moose harvest by local residents trying to meet their subsistence needs (Saito 2014, NWARAC 2017a, 2018a). During recent Council meetings, subsistence users have commented on the importance of moose as a subsistence resource, particularly when caribou are scarce (OSM 2017a, NWARAC 2017a, 2018a).

Table 12. Reported moose harvest in Unit 23 for 2005-2019 from ADF&G harvest ticket and permit reports (ADF&G 2021a).

Year	Local Resident Harvest	Nonlocal Resident Harvest	Nonresident Harvest	Total Harvest	Male	Female	Unknown
2005	65	41	41	148	137	10	1
2006	79	49	30	159	150	7	2
2007	64	29	25	123	116	7	0
2008	62	48	40	151	143	7	1
2009	80	50	23	155	144	10	1
2010	102	63	22	189	169	17	3
2011	72	45	26	144	133	11	0
2012	75	57	24	156	146	10	0
2013	88	53	21	164	151	12	1
2014	74	40	10	124	109	14	1
2015	85	59	20	165	144	21	0
2016	63	18	11	95	90	4	1
2017	66	18	0	84	78	5	1
2018	42	13	0	55	54	1	0
2019	61	15	0	76	76	0	0
Average	72	40	20	132	123	9	1

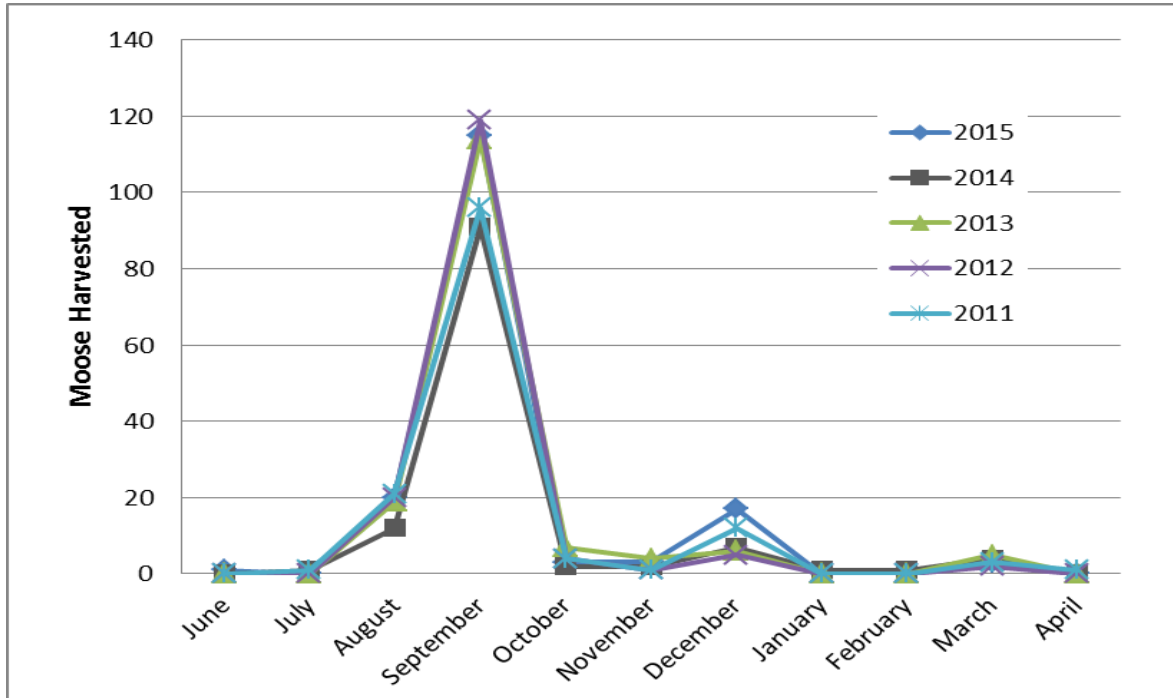


Figure 11. Moose harvest, by month, among users of Unit 23 from 2011-2015 according to State harvest reports (WINFONET 2017).

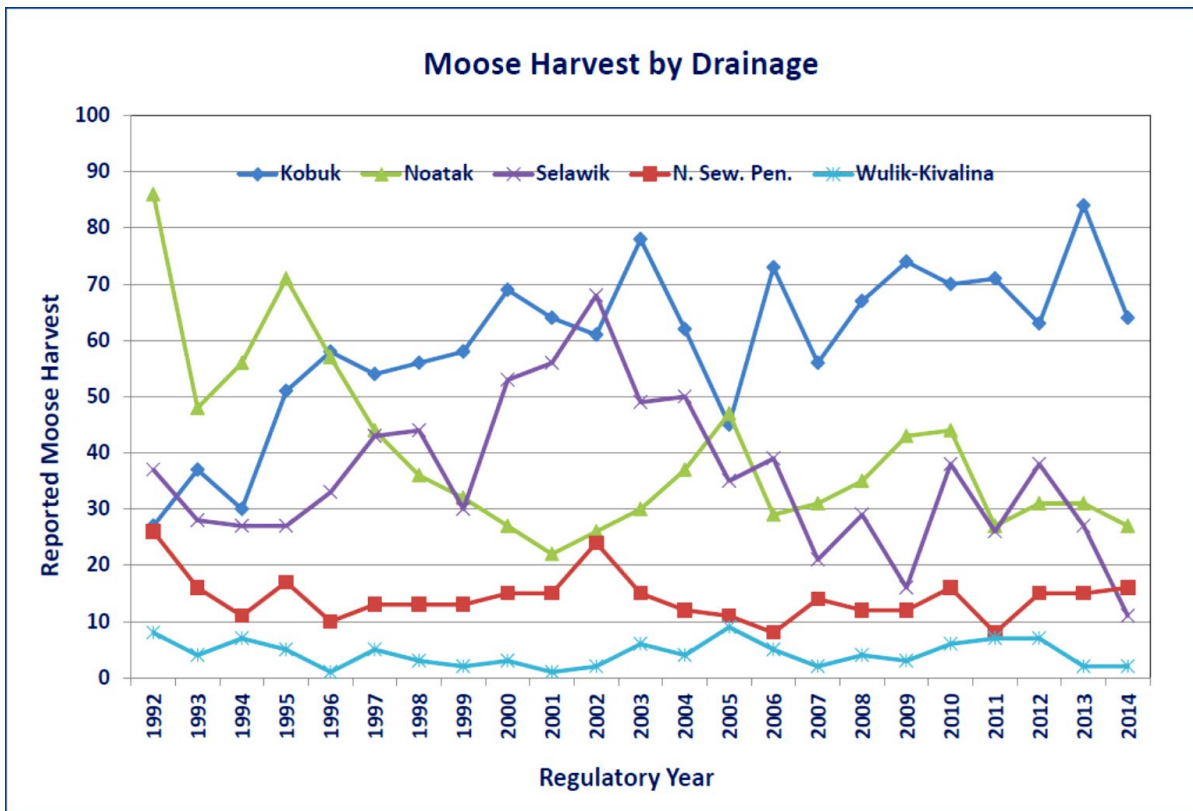


Figure 12. Moose harvest, by drainage, among users of Unit 23 from 1992-2014 according to State harvest reports (figure from ADF&G 2017a).

Unit 26A Moose

Moose harvest in all of Unit 26A averaged 57 per year until 1995, which was several years after the peak estimated abundance of the moose population in 1991. Although the trend area counts began to decline in 1992, the harvest remained at the higher levels for several years (Carroll 2010). In 1995, when more restrictive regulations were implemented, the harvest dropped to 14 moose, and then remained low between 1996 and 2004 at an average of 4 moose per year. One of the most important changes affecting harvest levels in this area was the ban on the use of aircraft beginning in 1996. In 2006, in response to an increasing moose population, the BOG allowed the use of aircraft to hunt moose in Unit 26A under a State draw permit hunt (DM980/981), but not under the general season by harvest ticket. However, the BOG discontinued the draw permit hunt, and therefore any use of aircraft, in 2015. Between 2009 and 2019, the average reported moose harvest was 3.73 moose per year (**Table 13**).

The non-resident moose hunt in Unit 26A has been closed since 2014. While the ADF&G harvest report website showed one moose harvested by non-residents in 2018 and 2019, this may be reported illegal harvest (Daggett 2021, pers. comm.). In recent years (2015-2019), non-local resident moose harvest has averaged 0.8 moose per year, while local resident harvest has averaged 1.4 moose per year (ADF&G 2021a).

Table 13. Reported moose harvest in Unit 26A for 2009-2019 from ADF&G harvest ticket and permit reports (ADF&G 2021a).

Regulatory Year	Local Resident Harvest	Nonlocal Resident Harvest	Nonresident Harvest	Unknown Residency Harvest	Total Harvest	Male	Female	Unknown
2009	2	0	1	0	3	2	1	0
2010	1	0	0	3	4	4	0	0
2011	2	0	0	0	2	2	0	0
2012	4	5	0	0	9	8	1	0
2013	2	2	0	0	5	5	0	0
2014	1	0	0	1	2	1	1	0
2015	0	0	0	3	3	2	1	0
2016	2	2	0	0	4	4	0	0
2017	3	0	0	0	3	3	0	0
2018	1	1	1	0	3	3	0	0
2019	1	1	1	0	3	3	0	0
Average	1.73	1	0.27	0.64	3.73	3.36	0.36	0

Commercial Use Authorization activity on National Park Service Lands in Unit 23

Table 14 shows several metrics of the presence of Commercial Use Authorization resulting activity in the Western Arctic National Parklands (WEAR). Each guide is limited to 12 clients a year (NWARAC 2020a). Hunting by non-locals in WEAR is only permitted in Noatak National Preserve.

In 2020, two guides and four transporters operated in WEAR, as well as six air taxi companies (NWARAC 2020a). In 2019, there were three guides operating, and a total of 11 companies holding

Commercial Use Authorizations (WEAR 2019). In 2018, there were three guide companies operating, and a total of 18 companies holding Commercial Use Authorizations (WEAR 2018).

Table 14 demonstrates that most of the transporter traffic occurs within Noatak National Preserve and is likely associated with hunting by non-Federally qualified users; Kobuk Valley National Park and Cape Krusenstern National Monument are only open to hunting by local residents. However, transporter traffic still occurs in Kobuk Valley National Park and Cape Krusenstern National Monument, and some of the traffic in Noatak National Preserve is likely not hunting related.

Table 14. Transporter and guide activity on National Park Service Lands in Unit 23. (WEAR 2017, 2018, 2019, 2020). CUA = Controlled Use Area.

Year	Number of Visitors via CUA/ Concession aires	Number of Visitor Days via CUA/ Concession aires	Number of Caribou harvested via Transporters and Guides	Number of Moose harvested via Transporters and Guides	Number of Air Taxi/ Transport Flights
Noatak National Preserve (NOAT)					
2020	456	3,324	366	1	361
2019	543	3,079	165	6	245
2018	319	1,724	66	2	119
2017	232	223	--	--	--
Kobuk Valley National Park (KOVA)					
2020	53	124	0	0	23
2019	496	946	0	0	144
2018	205	415	0	0	67
2017	212	73	0	0	--
Cape Krusenstern National Monument (CAKR)					
2020	11	11	0	0	5
2019	79	173	0	0	25
2018	73	120	0	0	25
2017	15	4	0	0	--
Western Arctic Parklands (NOAT, KOVA, and CAKR) TOTAL					
2020	520	11	366	1	389

Year	Number of Visitors via CUA/ Concession aires	Number of Visitor Days via CUA/ Concession aires	Number of Caribou harvested via Transporters and Guides	Number of Moose harvested via Transporters and Guides	Number of Air Taxi/ Transport Flights
2019	1,118	4,198	165	6	414
2018	597	2259	66	2	211
2017	459	300	---	--	--

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 7,523 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.

Caribou

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 in the Northwest Arctic Region. Hunt timing changed—and continues to change—from year to year according to the availability of caribou and their migration paths (Burch 2012; ADF&G 1991). Iñupiaq hunting values are based on the belief that hunter behavior can prevent a successful harvest and/or alter the caribou migration (Anderson 1998). Caribou continue to dominate the subsistence harvest in most communities in the region (Braem et al. 2015, Braem et al. 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 capita harvest of caribou has been as high as 430 pounds per year in communities in Unit 23 (ADF&G 2021b; **Table 15**).

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.

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). 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.

Table 15 highlights variability in the number of caribou harvested annually by each community over time, which tends to correspond with local availability.

Table 15. Subsistence survey data showing four measures of use of caribou by Unit 23 communities between 1986 and 2017. (ADF&G 2015, 2021b; Mikow and Kostick 2016).

Community	Data year	Est Caribou Harvested	Number of Caribou per Capita	Pounds of Caribou per Capita	Percent of overall subsistence Harvest (when known)
Ambler	2012	685	2.54	330	55%
	2009	456	1.75	260	--
	2003	325	1.12	176	--
Buckland	2016	637	1.21	179	--
	2009	561	1.3	176	--
	2003	637	1.56	212	38%
Deering	2017	342	2.22	342	--
	2013	294	2.29	430	65%
	2007-2008	182	1.37	161	--
	1994	142	0.96	131	19%
Kiana	2009	440	1.18	149	--
	2006	306	0.77	108.5	31%
	1999	488	1.23	174	--
Kivalina	2010-2011	86	0.23	32	--
	2007	268	0.67	85	14%
	1992	351	0.49	138	18%
	1983	564	0.78	283.9	30%
Kobuk	1982	346	0.48	179	23%
	2012	119	0.84	98	32%
	2009	210	1.72	194	--
	2004-2005	134	1.06	148	--

Community	Data year	Est Caribou Harvested	Number of Caribou per Capita	Pounds of Caribou per Capita	Percent of overall subsistence Harvest (when known)
Kotzebue	2014	1286	0.43	59	29%
	2013	1,680	0.55	75	--
	2012	1803	0.59	78	--
	1986	1917	0.71	97	24%
Noatak	2016	337	0.59	80	--
	2010	66	0.12	16	--
	2007	441	0.9	114	31%
	2002	410	0.9	120	--
	1999	683	1.61	224	--
Noorvik	1994	615	1.62	220	48%
	2017	250	0.48	65	--
	2012	851	1.36	198	33%
	2008	767	1.19	173	--
Point Hope	2002	988	1.46	181	--
	2014	185	0.25	34	8%
	1994	355	0.5	67	23%
Selawik	2011	683	0.79	109	20%
	2006	934	1.11	165	--
	1999	1289	1.68	249	--
Shungnak	2012	396	1.47	196	53%
	2008	416	1.53	218	--
	2002	403	1.62	220	36%
	1998	561	2.17	312	--

Table 16 compares percentages of residents attempting to harvest caribou versus those succeeding in harvesting caribou in Unit 23 communities. In practice, attempted harvest depends on the presence of caribou in traditional harvest areas. It is worth noting that the percentage of individuals 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 people are getting as many caribou as they would like to meet their harvest goals; sharing redistributes caribou through the community in order to help meet need, and “percent receiving” is also included in **Table 16**.

Table 16. Households' attempted harvest, harvest, and sharing of caribou in Unit 23 between 1986 and 2017. (ADF&G 2021b).

Community	Year	Percent Attempting to Harvest Caribou	Percent Harvesting Caribou	Percent Receiving
Kotzebue	2014	39%	29%	72%
	2013	43%	34%	71%
	2012	44%	39%	60%
	1991	70%	63%	62%
	1986	50%	45%	58%
Selawik	2011	70%	54%	80%
	2006	65%	63%	--
	1999	61%	61%	84%
Kivalina	2010	66%	29%	73%
	2007	64%	64%	69%
	1992	77%	74%	67%
Noatak	2016	70%	51%	84%
	2010	20%	20%	45%
	2007	73%	66%	88%
	2002	76%	71%	64%
	1999	74%	72%	62%
	1994	84%	84%	50%
Lower Kobuk River Communities				
Noorvik	2017	59%	40%	40%
	2012	60%	60%	47%
	2008	70%	70%	37%
	2002	72%	71%	60%
Kiana	2009	83%	80%	60%
	2006	62%	57%	--
	1999	68%	65%	75%
Upper Kobuk River Communities				
Ambler	2012	70%	62%	60%
	2009	76%	74%	50%
	2003	74%	70%	50%
Shungnak	2012	52%	48%	74%
	2008	73%	68%	74%
	1998	74%	72%	35%

The most recent surveys conducted for communities in Unit 23 were conducted in 2017 (Deering, Noorvik), 2016 (Buckland), 2014 (Kotzebue), and 2012 (Ambler, Kobuk, Shungnak), and Kiana (2009). Therefore, harvest data from comprehensive surveys are not sufficiently up-to-date to provide accurate

information on the full impact of delayed caribou migration; new comprehensive subsistence surveys and key informant interviews are needed, particularly for Kiana, Ambler, Kobuk, Shungnak, and Kotzebue. For years in which subsistence surveys were conducted, the greatest difference between the percentage of residents attempting to harvest caribou and actually harvesting caribou occurred in Noorvik in 2017, Kotzebue in 2014, Ambler in 2012, Selawik in 2011, and Kivalina in 2010; for all five of these communities, the year with the greatest disparity was also the most recent year documented in subsistence surveys, supporting the fact that people have been having more difficulty harvesting caribou in these communities within the last decade.

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. 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 GAAR do not have the same traditional knowledge-based record of caribou disruption. Braem et al. 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).

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.” 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 in this issue. Local subsistence users take umbrage with the location and timing of the non-local harvest in particular, rather than the number of animals taken.

Past management has focused on addressing short-term interruptions to caribou movement and displacement of local hunters in high conflict harvest and air travel areas; local complaints that the presence of non-local activity may be contributing to large scale delay, diversion, or cessation of the herd's migration on a long-term basis suggests that management actions to date (partial closures and Controlled Use Areas) have not been sufficient to ensure continuation of subsistence.

Concerns over delayed caribou migration—and the potential role of non-local hunting activities in diverting and delaying migration—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, 2021b, 2021). In areas of high conflict, 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 et 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 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 on caribou migration as well as subsistence access and hunter behavior has not received adequate attention in the literature (Stinchcomb et al. 2019).

Delays in caribou migration are known to have created difficulty for virtually all communities in Unit 23 (Dau 2015, Braem et al. 2015, NWARAC 2020a, 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), which corresponds with reduced success rate as reported in the most recent comprehensive subsistence surveys (ADF&G 2021b). 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). Simultaneously, research on the cumulative impact of changes to soundscapes on both caribou and the behavior of subsistence hunters is growing (Stinchcomb 2017; Stinchcomb et al 2020). 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 Regional Advisory Council (NWARAC 2020a, 2021).

Concerns about the impact of non-local hunters on caribou migration led to a unit wide closure in 2016 and 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. According to interviews conducted by Gonzalez et al. 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” (2018:19). Key informant interviews have not been conducted by ADF&G Division of Subsistence since 2017 in any Unit 23 communities, so additional information about the effects of the partial closure must be gleaned from transcripts of Northwest Arctic Regional Advisory Council meetings.

Other areas previously identified as high conflict in Unit 23 which remain open to non-Federally qualified users include the Upper Kobuk River, although this area is surrounded by State-managed lands, so Federal lands closure would not affect this area. Delayed migrations and arrival at the Kobuk River have been noted since 2000 (Dau 2015). Federal lands occurring within Kobuk Valley National Park, as well as other National Parks and Monuments in the Unit, are already closed to non-Federally qualified users, open only to local resident zone communities. Selawik National Wildlife Refuge, BELA, most BLM lands, the portion of Gates of the Arctic National Preserve within Unit 23, and small areas of the Alaska Maritime National Refuge within the unit remain open to non-Federally qualified users. However, caribou are often no longer present in some of these areas during the fall season, and aircraft restrictions in some of these areas mean that air traffic is limited in some of these remaining open areas. Specifically, in the far Western portion of Noatak National Preserve and in a portion of Selawik National Wildlife Refuge (**Map 5, Table 5**).

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. 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).

The proponents of this request also expressed concern over non-local hunting activity in Unit 26A disrupting and delaying caribou migration through Unit 23. Concerns over the Federal lands closure in Unit 23 also included displacement of non-local caribou hunters into adjacent units, including Unit 26A.

Moose

Moose are a relatively recent addition to both the Northwest Arctic and North Slope regions and have been incorporated into subsistence diets as their ranges have expanded. Archaeological sites in tundra and northern tree-line areas of Alaska demonstrate few moose remains until the mid-20th century, and this is consistent with historical accounts and minor representation in Iñupiat culture (Hall 1973, Coady 1980, Tape et al. 2016).

Shifts in caribou herd migration and size cause variability in their availability to communities, with harvest strategies for other available species, such as moose, often changing accordingly over time (Georgette and Loon 1993). Because moose harvest increases and decreases in response to the availability of other resources such as caribou and marine mammals, data from subsistence surveys need to be understood in the context of flexible subsistence strategies over time. A single year of data may over or under-represent a community's dependence on moose during times when caribou or marine mammals are less available.

Unit 23

In the upper Kobuk River in northwest Alaska, moose did not appear until the 1920s but soon thereafter populated the entirety of the drainage. Moose were present in the tributaries of the upper and middle Noatak River in the 1940s and became more common downriver after 1960. The presence of moose is especially recent in lowland and coastal areas; by the 1980s, moose were present in suitable habitat throughout northwest Alaska (Georgette and Loon 1993).

According to Georgette and Loon (1993), residents of Kotzebue continued to consider moose as secondary to caribou in their importance and desirability as a subsistence food; they were taken to add dietary variety. Residents hunted moose in the fall, but moose were also harvested throughout the winter as needed. The relative size of moose made them more difficult to butcher and pack than caribou, and

hunters often preferred to harvest the species as close as possible to the edge of a river or a lake in proximity to their boat (Georgette and Loon 1993).

In many parts of the Northwest Arctic, shifts in caribou herd migration and size cause variability in their availability to communities, with harvest strategies for other available species, such as moose, often changing accordingly over time (Georgette and Loon 1993). On the North Slope coastal communities, more moose may be harvested in years with poor whale or caribou harvests. Because moose harvest increases and decreases in response to the availability of other resources data from subsistence surveys needs to be understood in the context of flexible subsistence strategies over time. A single year of data may underrepresent a community's dependence on moose during times when caribou or marine mammals are less available. For this same reason, trends in moose availability most likely cannot be reliably deduced based on trends in numbers of moose taken as reported in subsistence surveys or harvest reports.

The average per capita harvest of moose in Kotzebue in 2014, the most recent survey year, was 14.6 pounds, accounting for only 7% of the average household harvest (**Table 17**, ADF&G 2021b). Approximately 22% of Kotzebue households attempted to harvest moose, and 10% of Kotzebue households successfully harvested moose (compared to 29% harvesting caribou) (**Table 18**, ADF&G 2021b). Despite the small percentage of households harvesting moose, sharing of this resource was widespread with approximately 50% of households using it (**Table 17**, ADF&G 2021b.).

The harvest and use of a resource in regional hubs with larger populations may be different than that of a rural village since the former tends to be more heterogeneous in “culture, birthplace, education, employment, and length of residency” (Georgette and Loon 1993: 4). In 2012 (the most recent survey year), the rural northwest arctic community of Ambler harvested approximately 27 pounds of moose per capita, with 19% of households harvesting the resource (compared to 62% harvesting caribou) and 49% of households using the resource (ADF&G 2021b).

Georgette and Loon (1993) suggested that future declines in caribou availability in the region could result in increased reliance on moose to meet the subsistence harvest demands of Kotzebue residents. Given recent declines in the Western Arctic Caribou Herd (Dau 2015), moose may already be becoming a more prominently sought after resource for meeting subsistence needs in the region. **Table 18** compares the percentage of community residents attempting to harvest moose, successfully harvesting moose, and receiving moose from others, according to comprehensive subsistence surveys. There does appear to be a general increase over time in the percentage of community members attempting to harvest moose, except in the upper Kobuk River communities; however, sufficiently recent data is not available to substantiate a trend. An increase in the percentage of community members attempting to harvest moose could reflect several different variables, such as moose availability and the need to offset lack of caribou. **Table 17** tracks trends in the percentage of community residents using moose, pounds per capita of moose used, and the percentage of the overall subsistence harvest comprised by moose, according to comprehensive subsistence surveys. A clear trend does not emerge from these data on use of moose use by residents of Unit 23, but a pattern may emerge when updated subsistence survey data becomes available. Declining moose populations may temper the availability of this resource to offset lower availability of caribou.

Table 17. Subsistence survey data showing three measures of use of moose by Unit 23 communities between 1986 and 2017 (ADF&G 2021b).

Community	Year	Percent Using Moose	Pounds of Moose per Capita	Percent of Total Harvest (when known)
Kotzebue	2014	52%	14.6	7%
	2013	43%	13	15%
	2012	37%	12.5	14%
	1991	62%	34.6	--
	1986	42%	13	--
Selawik	2011	75%	24.8	5%
	2006	Unknown	32.4	--
	1999	55%	48.5	--
Kivalina	2010	49%	18.8	37%
	2007	31%	4.8	--
	1992	48%	26.4	--
Noatak	2016	24%	8.4	9%
	2010	27%	8.6	32%
	2007	46%	10.8	3%
	2002	22%	4	--
	1999	18%	5.7	--
	1994	12%	3.5	--
Lower Kobuk River communities				
Noorvik	2017	54%	38	36%
	2012	66%	22	4%
	2008	37%	22	11%
	2002	68%	41	--
Kiana	2006	40%	22.5	--
	1999	30%	10.1	--
Upper Kobuk River communities				
Ambler	2012	49%	27.3	5%
	2003	52%	23.2	--
Shungnak	2012	52%	8.8	--
	2008	55%	23.5	--
	2002	73%	22.8	--
	1998	50%	45.6	--
Kobuk	2012	50%	11.8	4%
	2004	64%	30.6	16%

Table 18. Attempted harvest, harvest, and sharing of moose in Unit 23 between 1986 and 2017 (ADF&G 2021b).

Community	Year	Percent Attempting to Harvest Moose	Percent Harvesting Moose	Percent Receiving Moose
Kotzebue	2014	22%	10%	46%
	2013	15%	7%	36%
	2012	18%	9%	30%
	1991	33%	27%	45%
	1986	27%	8%	34%
Selawik	2011	50%	23%	65%
	2006	25%	24%	--
	1999	33%	41%	38%
Kivalina	2010	35%	13%	43%
	2007	14%	10%	29%
	1992	30%	23%	31%
Noatak	2016	15%	6%	9%
	2010	12%	5%	23%
	2007	16%	9%	46%
	2002	8%	3%	20%
	1999	4%	3%	14%
	1994	7%	3%	8%
Lower Kobuk River communities				
Noorvik	2017	38%	23%	45%
	2012	23%	17%	52%
	2008	18%	15%	23%
	2002	44%	28%	54%
Kiana	2006	21%	14%	--
	1999	13%	8%	22%
Upper Kobuk River communities				
Ambler	2012	28%	19%	40%
	2003	30%	15%	45%
Shungnak	2012	11%	7%	48%
	2008	27%	23%	34%
	1998	32%	30%	20%
Kobuk	2012	30%	10%	43%
	2004	70%	22%	61%

Alternatives Considered

An alternative to closing Federal public lands in all of Units 23 and 26A to the harvest of caribou by non-Federally qualified users Aug. 1 to Sep. 30 is to expand the current targeted closure to the rest of Unit 23 only, or to an expanded portion of Unit 23, while stopping short of closing Federal public lands in both Units. Key Federal public lands in Unit 23 which currently remain open and may be candidates for partial closures include additional river corridors within Noatak National Preserve or all of Noatak National Preserve, and BLM lands in the portion of the unit north of the Kobuk River. Subsequently, additional Federal public lands in Unit 23 and portions of the National Petroleum Reserve in Unit 26A could be closed if the initial stepped closure is not sufficient to ensure continuation of subsistence hunting for caribou within Unit 23. This alternative was considered and rejected because there is not yet adequate evidence that closing Federal public lands would definitively result in caribou migrating to the Kobuk River communities earlier in the fall. Additionally, this alternative runs the risk of concentrating non-local users on State land around some communities.

Effects of the Proposal

According to Section 815(3) of the Alaska National Interest Lands Conservation Act (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.”

Caribou in Units 23 and 26A

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, 2021. 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.

This 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 Federal public lands in adjacent units (i.e. Unit 26A), which could impact hunting and harvest in those units.

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, 2021, as they are not Federally qualified subsistence users. Non-Federally qualified users who are Native corporation shareholders would still be able to hunt on Native corporation lands under State regulations.

While the number of people and planes on Federal public lands may decrease substantially, user conflicts 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 considered State land. Reports from law enforcement and nonlocal hunters indicate caribou are commonly harvested on such gravel bars, which may suggest limited impacts of the 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).

Attempts to mitigate user conflicts in Unit 23 have already been implemented by the NPS (delayed entry zone in Noatak NP), ADF&G (Noatak Controlled Use Area), Selawik NWR (closure of certain areas to commercial use), and the Board (partial 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 Area date was changed to Sep. 22.

However, more can still be done by individual Federal agencies as well as the State to further address user conflict (e.g. 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, and additional education and outreach, etc.). A non-resident caribou hunt remains open in Units 23 and 26A; the State can be encouraged to improve education of non-resident as well as non-local resident hunters about Traditional Ecological Knowledge regarding caribou behavior, and cultural norms surrounding human-caribou interactions. The National Park Service could stop allowing transporters to bring hunters into Noatak National Preserve. However, there is not currently adequate evidence that ceasing transport of non-local hunters into Noatak National Preserve would result in caribou resuming their previous migration pattern. Additionally, this alternative runs the risk of concentrating non-local users on State land around some communities.

Because there are already several Controlled Use Areas in place for Units 23 and 26A, closure to non-Federally qualified users may not reduce air traffic in areas already covered by Controlled Use Areas targeting hunter activity associated with the same species. 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.

Approving this request may result in increased subsistence opportunity for Federally qualified subsistence users. Reducing non-local hunting, as well as air traffic and noise associated with hunting, may remove one factor possibly contributing to delay, diversion, or cessation of the caribou migration into traditional harvest areas. The role of these activities on caribou migration is currently poorly understood, particularly in combination with the impact of climate change on caribou migration and habitat use. However, Fullman et al. (2017) suggests that while aircraft can affect caribou behavior in the short-term (< 8 hours),

which can impact hunting success, aircraft are unlikely to have long-term impacts on caribou migration through the Noatak NP. The WACH have migrated through Unit 23 for thousands of years, although specific migration routes change annually (**Figure 1**). The long-held Iñupiaq tradition of letting lead caribou pass unmolested in order to establish migration routes also suggests that once migration routes are established, other caribou will follow regardless of hunting or other disturbances such as airplanes (Dau 2015).

Some discussion regarding this closure has focused on current herd numbers and classification under State and Western Arctic Caribou Herd Working Group management levels; the herd is currently being managed at the “conservative declining” level (**Table 6**), and under these frameworks, closure to non-Federally qualified subsistence users is not recommended until the herd is at the “preservative” management level, as indicated by population estimates and bull:cow ratios. However, the rationale for the request to close to non-Federally qualified users is not the current population metrics of the herd, but the continuation of subsistence uses. Specifically, the availability of the herd to Federally qualified subsistence users, and how the activity, presence, noise, and caribou-human interactions associated with non-local hunters may be affecting that availability. 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 hinder their movement, and that such effects may not be purely transitory, or could be cumulative in nature. Therefore, it is currently unclear whether closing Federal public lands to non-Federally qualified subsistence users in either Unit 23 or Unit 26A, or both, could contribute to restoration of historic migration routes and phenology. Fullman et al (2017) suggests that while individual caribou movements can be affected by human activity, it likely does not affect long-term caribou migration through Noatak NP. However, Local and Traditional Ecological knowledge holders suggest that repeated disruption to migratory pathways may approach a tipping point, beyond which herd memory of these routes can be lost (Baltensperger and Joly 2019; Nicholson et al. 2016). Thus, acting to protect migratory pathways may be time critical.

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 Subsistence Regional Advisory 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).

Since 2017, there has instead been a geographically targeted closure for caribou hunting by non-Federally qualified subsistence users along the Noatak, Eli, Agashashok, and Squirrel Rivers. This targeted closure focused on mitigating user conflicts around Noatak and resulted from extensive analysis and conversations with the Northwest Arctic Council representative from Noatak. Testimony from the Northwest Arctic Council indicates that this closure has been successful in mitigating a high-conflict area and allowing residents of Noatak to harvest caribou (NWARAC 2017a). While the current closure reduced user conflicts around Noatak, including limiting on-the-ground interactions between user groups, it does not address caribou migration and availability throughout Unit 23, the focus of the current request.

The primary reason the Norwest Arctic Council submitted this special action was because of delayed caribou migration, which has prevented many subsistence users from harvesting caribou during the fall. At their fall 2020 meeting, Council members stated that only Noatak had harvested caribou. Since 2016, according to GPS-collared caribou, crossing of the Kobuk and Selawik Rivers has been delayed, while crossing of the Noatak River has remained relatively consistent (Joly and Cameron 2020, **Figure 1, Table 7**). This suggests that closing areas south of the Noatak River and north of the Kobuk River may have the greatest impact on caribou migration phenology. However, western portions of Noatak National Preserve, BLM lands within the Squirrel River drainage, Kobuk Valley NP, CAKR, and GAAR are all already closed to non-Federally qualified users. Additionally, Council members from Ambler have expressed concern in the past 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. The closure of Selawik NWR, Bering Land Bridge NP, and the BLM lands south of the Kobuk River would not have any effect on encouraging migrating caribou to cross the Kobuk River earlier in the fall.

Moose 23

If this request is approved, Federal public lands in Unit 23 will be closed to the harvest of moose by non-Federally qualified users from August 1-September 30, 2021. Only Federally qualified subsistence users—those with a customary and traditional use determination for moose in Unit 23—would be able to harvest moose on Federal public lands in Unit 23. This request seeks to reduce moose harvest by non-Federally qualified users to protect a declining population that is important to Federally qualified subsistence users.

There are substantial conservation concerns that threaten the viability of the population. Surveys indicate substantial declines in almost every survey area, and population estimates are below State objectives. Additionally, the harvestable surplus has likely been exceeded. Regulatory changes made to reduce moose harvest since 2017 under State regulations include ending the hunt for non-residents of Alaska and elimination of the antlerless moose season. Regulatory changes made under Federal regulations since 2018 include combining the Noatak River drainage and remainder hunt areas, shortening seasons, closure of the cow moose season and changing the Unit 23 harvest limit to one antlered bull. However, moose populations have continued to decline. Federally qualified subsistence users have taken steps to limit their own harvest, and the Northwest Arctic Council voted to support these restrictions. Additionally Federal public lands were closed to moose harvest by non-Federally qualified users in December 2018 via special action due to conservation and population viability concerns.

Local use and dependence on moose may increase as availability of caribou, the most important subsistence resource for residents of Unit 23, becomes less predictable due to changes in migration routes and timing. However, moose are not a traditionally preferred food in the region. Approval of this request could aid in the recovery of the Unit 23 moose population by reducing moose harvest by non-Federally qualified users and offsetting a potential increase in use of moose by Federally qualified subsistence users on Federal public lands.

If this special action request is approved, those with a history of residency and family connection in Unit 23 who are now residing outside the region would not be able to harvest moose on Federal public lands in Unit 23 Aug. 1-Sep. 30, 2021, as they are not Federally qualified subsistence users. Non-Federally qualified users who are Native corporation shareholders would still be able to hunt on Native corporation lands under State regulations.

Hunting of moose, by non-Federally qualified users, would still be permitted on State lands in the unit as well as below the mean high water line on many waterways within Federal lands (**Map 1**). Many State lands are located adjacent to Native lands, which could cause more non-Federally qualified users to harvest moose near these areas; this concern has been expressed by communities within Unit 23 in discussion about potential closures to non-Federally qualified users. Non-Federally qualified users hunting moose may still traverse Federal public lands to access State lands if this Special Action Request is approved. If all non-Federally qualified users harvest moose on State lands, this could lead to overcrowding, increasing user conflicts. The RM880 permit already requires those hunting moose in Unit 23 under State regulations to obtain their permit in the unit in July, requiring an extra trip for non-local hunters. However, there is still an option for hunting by harvest ticket for a bull with a more limited season and additional antler restrictions (50-inch antlers or antlers with 4 or more brow tines on at least one side), which does not require that hunters obtain a permit in the unit.

Moose 26A

If this request is approved, Federal public lands in Unit 26A will be closed to the harvest of moose by non-Federally qualified users from Aug. 1-Sept. 30, 2021. Only Federally qualified subsistence users—those with a customary and traditional use determination for moose in Unit 26—would be able to harvest moose on Federal public lands in Unit 26A. Hunting of moose, by non-Federally qualified users, would still be permitted on State lands in the unit as well as below the mean high water line on many waterways within Federal lands. Currently, the State’s non-resident season is closed and harvest by non-local residents in Unit 26A is very low, at an average of less than one per year (**Table 13**). Therefore, approving this request would probably not contribute to conserving the moose population.

If this special action request is approved, those with a history of residency and family connection in Unit 26A who are now residing outside of the region would not be able to harvest moose on Federal public lands in Unit 26A Aug. 1-Sep. 30, 2021, as they are not Federally qualified subsistence users. Non-Federally qualified users who are Native corporation shareholders would still be able to hunt on Native corporation lands under State regulations.

Closing to non-Federally qualified users would alleviate concerns on the part of Federally qualified subsistence users about the impact of non-local moose hunters on the moose population, as well as possible effects of non-local hunters—including those seeking out moose—on the behavior of migrating caribou. However, the Unit 26A Controlled Use Area is already in effect in this subunit under State regulations. The Unit 26A Controlled Use Area is closed to the use of aircraft for hunting moose from Jul. 1-Sep. 30 (covering the proposed closure of Aug.1-Sep. 30), as well as Jan. 1-Mar. 31. This Controlled Use Area does not apply to use of aircraft between publicly owned airports for hunting moose. The

additional effect of this closure would be to stop foot and boat traffic associated with the single moose harvested on average per year by non-local users in Unit 26A.

OSM CONCLUSION

Support WSA21-01 with modification to only close moose hunting to non-Federally qualified users in Unit 23 from Aug. 1-Sep. 30, 2021.

Justification

Caribou in Units 23 and Unit 26A

While 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 through the Noatak NP. While the factors affecting caribou migration are poorly understood and warrant additional research, the closure of Federal public lands is not currently warranted.

The Board has already closed areas of historically high user conflicts around Noatak in Unit 23 to caribou hunting by non-Federally qualified users, while national parks (CAKR, GAAR, KOVA) in the unit are always closed. Testimony from subsistence users and GPS-collared caribou data 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) are already closed. Additionally, closure of lands in Unit 26A are not expected to prevent delays in fall migration south of the Noatak River as these lands are 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 of 2021, user conflicts and disruption of caribou movement may increase on State lands, particularly along the upper Kobuk River. 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 considered State land. A closure based on the disruption of aircraft traffic on migrating caribou would also pose an unnecessary restriction on non-Federally qualified users accessing these units by means other than airplanes. Aircraft traffic from other users such as recreational boaters would still occur.

Moose in Unit 23

This request seeks to reduce moose harvest during the peak of the hunting season by non-Federally qualified users to protect a declining population that is important to Federally qualified subsistence users. There are substantial conservation concerns that threaten the viability of the population. Surveys indicate substantial declines in almost every survey area, and population estimates are below State objectives. Additionally, the harvestable surplus has likely been exceeded. Regulatory changes have been made to reduce moose harvest and promote population recovery in Unit 23 under both Federal and State regulations since 2017. However, moose populations have continued to decline. Approval of this request

could aid in the recovery of the Unit 23 moose population by reducing moose harvest by non-Federally qualified users.

Moose in Unit 26A

Currently, harvest by non-local residents in Unit 26A is very low, at an average of one per year. Therefore, approval of this request would probably not contribute to conserving the moose population. The Unit 26A Controlled Use Area is already closed to the use of aircraft for hunting moose from July 1 to September 30 as well as January 1 to March 31.

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INTERAGENCY STAFF RECOMMENDATION

Approve Temporary Wildlife Special Action Request WSA21-01 **as modified by OSM** to close moose hunting to non-Federally qualified users in Unit 23 Aug.1 – Sept. 30, 2021.

Justification

We acknowledge the vital concerns voiced by Federally qualified subsistence users in Units 23 and 26A regarding food security and the continuation of subsistence uses. To help mitigate the situation, we recommend collaborative cross-agency efforts to better understand the patterns of migration in the Western Arctic Caribou Herd, including impacts of external factors. We also encourage that co-equal attention be given to traditional knowledge and western science in understanding and managing subsistence resources in the region.

As indicated in the staff analysis for WSA21-01, closure of caribou hunting to non-Federally qualified users in Units 23 and 26A is not warranted at this time. The long-term effects of aircraft and non-local hunting activity on caribou migration remain unclear, though short-term effects on individual harvest success by Federally qualified subsistence users may be occurring. The Board has already closed areas of historically high user conflicts in Unit 23 along a portion of the Noatak River, the Squirrel, Eli, and Agashashok River drainages to caribou hunting by non-Federally qualified users, while national parks and monuments within the unit are already closed to this user group. Furthermore, closure of Federal public lands in these units may serve to concentrate non-Federally qualified users onto State lands, which are often located close to villages, and may increase user conflicts in these areas; and non-Federally qualified users would still be able to access and harvest caribou on gravel bars below the mean high-water mark along navigable rivers within Federal public lands as these areas are considered State land. Finally, aircraft traffic from other users such as recreational boaters and hikers would still occur if a closure was enacted.

A closure to moose hunting in Unit 26A to non-Federally qualified users is also not warranted. Moose harvest by non-Federally qualified users is very low in the unit and closure of moose hunting to this user group would not aid in the conservation of moose populations. Additionally, moose populations are at the edge of their distribution range in Unit 26A and are limited by marginal habitat available in the area. Finally, the Unit 26A Controlled Use Area is already closed to the use of aircraft for hunting moose from July 1 to Sept. 14 as well as Jan. 1 to Mar. 31, which already limits moose hunting opportunities by non-Federally qualified users.

A closure to moose hunting in Unit 23 to non-Federally qualified users is warranted. As shown in the analysis, there are substantial conservation concerns that threaten the moose population in the unit. Surveys indicate substantial declines in almost every survey area, and population estimates are below State objectives. Additionally, the harvestable surplus has likely been exceeded. Regulatory changes have been made to reduce moose harvest and promote population recovery in Unit 23 under both Federal and State regulations since 2017. Despite these efforts, moose populations have continued to decline. Closure

of moose hunting to non-Federally qualified users in Unit 23 may aid in the recovery of the moose population, may provide additional harvest opportunities for Federally qualified subsistence users, and is warranted under Section 815(3) of ANILCA and under 50 CFR 100.10(d)(4)(vi).



Brown Bears- 2021 Survey Summary

Seward Peninsula/Bering Land Bridge National Preserve

Background

The National Park Service, in cooperation with the Alaska Department of Fish & Game and Wildlife Conservation Society, conducted an aerial survey for brown bears on the Seward Peninsula during May 17-31, 2021. This survey area included most of Bering Land Bridge National Preserve and portions of Game Management subunits 22B, 22C, 22D, and 22E. The survey uses a photo-sight-resight protocol to estimate the total population and was conducted using five aircraft based out of Nome, Quartz Creek, and Kotzebue. Brown bear abundance and density estimates are critical for sustainable management of brown bear populations and their harvest. Of 192 total subunits, 139 were double sampled, 42 were single sampled, and 10 were not flown due to logistical constraints.

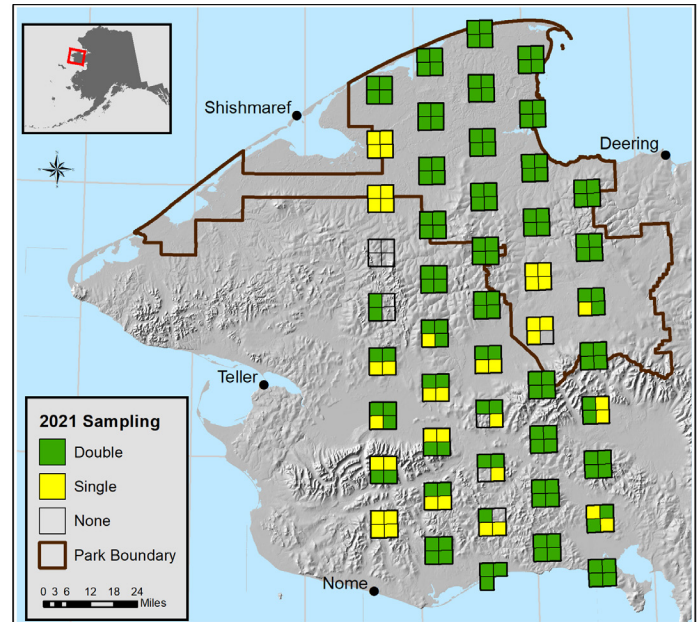


Figure 1. Map of Seward Peninsula Survey Area.



Figure 2. A family of brown bears spotted during the aerial survey (NPS / JORDAN PRUSZENSKI).
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Figure 3. An adult brown bear cooling off (NPS / DYLAN SCHERTZ).

Population Estimates

Survey teams observed 29 solo adult bears, 3 adult pairs, and 34 family groups within survey units. The provisional estimate for adult brown bears was 527 (95% Bayesian Credible Interval: 361—722) in 2021 and 462 (95% BCI: 313—678) in 2015. The nearly complete overlap in 95% Bayesian Credible Intervals indicates the adult population is stable. The mean estimate for cubs was substantially higher in 2021 compared to 2015, indicating favorable conditions for cub production and survival in 2020 and 2021. For full estimate breakdowns, see the table below. ARCN plans to repeat this survey every five years to monitor this population and refine the survey method.

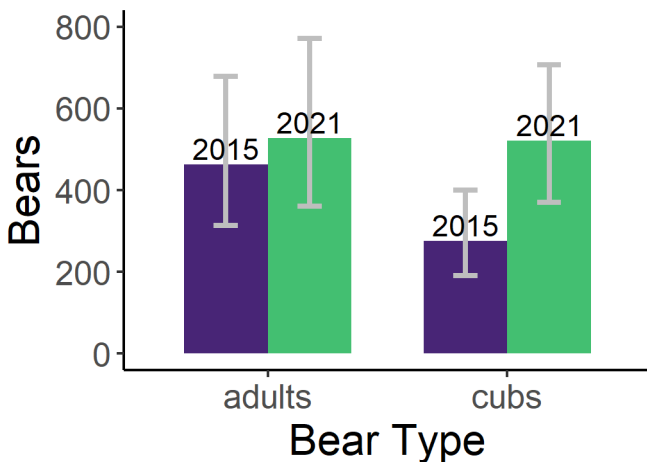


Figure 4. Brown bear population estimates for the Seward Peninsula study area, which includes Bering Land Bridge National Preserve, Alaska. Gray error bars indicate 95% Bayesian Credible Intervals.

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	2015	2021
	Mean (95% BCI*)	Mean (95% BCI*)
Adults	462 (313 – 678)	527 (361 – 772)
Cubs	275 (191 – 400)	521 (371 – 708)

Table 1. Provisional 2015 & 2021 Brown Bear Estimates for the Seward Peninsula Survey Area. *95% BCI refers to 95% Bayesian Credible Intervals, which is a standard way to express uncertainty around a population estimate.



Figure 5. A Piper SuperCub, the survey aircraft typically used for brown bear surveys (NPS / BRAD SHULTS).

More Information

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<https://www.sciencedirect.com/science/article/pii/S0006320717300423>

<https://www.nps.gov/im/arcn/bears.htm>

August 10, 2021



United States Department of the Interior



BUREAU OF LAND MANAGEMENT
Anchorage Field Office
4700 BLM Road
Anchorage, Alaska 99507-2591

Bureau of Land Management – Anchorage Field Office **Updates to Subsistence Regional Advisory Councils** **Fall 2021 Meetings**

Summer 2021 saw a return to some field work operations. BLM staff worked diligently to get back into the swing of field season, while adhering to all COVID-19 protocols and mitigations. Preventing the COVID-19 spread has been a critical focus for all programs.

An overview map of the Anchorage Field Office can be found at:

https://www.blm.gov/sites/blm.gov/files/documents/files/Maps_Alaska_Anchorage-Field-Office.pdf

BLM Alaska publicly available interactive maps are available at: <https://blm-egis.maps.arcgis.com/apps/MinimalGallery/index.html?appid=d2da853631fe4b60ac768f19bec4e84b>

Wildlife

- Contributed funds in an Interagency Agreement with the NPS to help fund the Western Arctic Caribou Herd Working Group meeting this December. The meeting is funded by BLM, National Park Service, US Fish & Wildlife Service (USFWS), and Alaska Department of Fish & Game (ADF&G). The Working Group will discuss the management of the herd and its current population status.
- Assisted ADF&G with muskox classification counts on the Seward Peninsula in April, by providing a helicopter and field staff from Nome to count muskox groups, for the 2021 Peninsula wide muskox population estimate.
- Issued subsistence permits in July for the Federal muskox hunts in GMU 22B and 22D on the Seward Peninsula.
- Issued subsistence permits in August for the Federal moose hunt in in GMU 22A to Unalakleet residents.
- Completed two breeding bird survey routes on the Unalakleet and Anvik rivers in June. These routes provide data to the US Geological Survey to determine bird population trends across North America.
- Contributed funds through an Interagency Agreement with the USFWS Togiak Wildlife Refuge to help monitor the Mulchatna Caribou Herd. Funds will be used to capture and collar

caribou in the Goodnews Bay and Carter spit area to help determine movement of animals that use that area.

Aquatics

- Collected genetic sampling in August of arctic char and water in the Kigluaik Mountains on the Seward Peninsula for environmental DNA.
- Completed initial aquatic habitat baseline data work around Aniak and Galena as part of its National Assessment, Inventory, and Monitoring Program (AIM). AIM data provides a framework to inventory and quantitatively assess the condition and trend of natural resources on public lands.
- Ongoing stream gaging flow quantification efforts on Big River and Unalakleet Wild & Scenic River
- Ongoing water quality monitoring work at Platinum and Nixon Fork Mines
- Provided juvenile salmon identification books for the Bristol Bay Fly Fishing and Guide Academy being held August.

Ecology

- Developed a terrestrial monitoring program for the Kobuk Seward Peninsula Planning Area as part of its AIM Program. In July 2021, 38 plots were established and sampled using this monitoring framework. Data on plant cover, bare ground, invasive species, sensitive species, and soil structure were collected. In addition to these national core monitoring indicators, BLM has developed new methods to collect data on lichen cover and disturbance to determine rangeland health in areas that BLM permits reindeer grazing.
- In August 2021, will visit and maintain seven exclosures on the Seward Peninsula. These small fenced-in areas protect vegetation from grazing, providing a baseline to learn about the long-term effects of grazing on lichens and plants. The exclosures were installed in 2011 and 2012 and now require a comprehensive maintenance visit. Monitoring will occur next year to assess how the vegetation within them has changed over the past 10 years.
- Issued four firewood harvest permits to residents on the Seward Peninsula.
- In August 2021, plans to install two permafrost monitoring stations along the Iditarod National Historic Trail near Nikolai. These stations will monitor the trail's impact to permafrost soil properties and to provide important data to fill a spatial gap and assist University of Alaska-Fairbanks efforts to model permafrost temperatures across Alaska. Also collaborating with local schools in Nikolai and McGrath to develop a program to educate and involve local students in the project and further their understanding of the permafrost soils around them.

- Collaborated with the United State Forest Service Forest Inventory and Analysis Program (FIA) to facilitate data collection at 50 plot locations on BLM within the FIA's Southwest Inventory Unit.
- Invasive species inventory, treatment, and monitoring data was entered into BLM's new Vegetation Management Action Portal that houses all of BLM's spatial data relating to vegetation treatments. This new database will greatly reduce redundant data entry from field users and will increase analysis and reporting capabilities.
- Anchorage Area:
 - Collected pre-treatment data in June 2021 for a collaborative University of Alaska-Anchorage research project to learn how to construct fuel breaks that are more resilient to spruce bark beetle attack and wind events. The project will establish three experimental fuel break treatment plots plus one control plot on Campbell Tract. Spruce trees in the three treatment plots will be thinned to 8-12 foot spacing. The three treatments vary in how the felled material will be processed: 1) stand thinned and trees left exactly as felled, 2) stand thinned and trees cut to 4-6 foot lengths and scattered within the treatment area, and 3) stand thinned and felled trees chipped and scattered within the treatment area. Treatments are planned for early winter of 2021.
 - Conducted invasive species control treatments on Campbell Tract in July with another planned for August 2021. White sweet clover, bird vetch, orange hawkweed, bird cherry, and yellow toadflax were spot treated within a 6-acre area that is assessed annually.
 - Continues to support the Anchorage Cooperative Invasive Species Management Area through an assistance agreement to partially fund meetings, public events, and chairperson coordination.

Recreation

- In August 2021, plan to inspect guide and outfitter camps in GMU 23.
- Issued new Special Recreation Permit (SRP) for guided bear hunts in GUA 22-06,07. July BLM conducted permit monitoring for one camp location used during 2 spring bear hunts.
- Conducted SRP monitoring in the Nulato Hills area, Kateel River, Galena, along the Golsovia & Unalakleet Rivers

Iditarod National Historic Trail

- Conducted public shelter cabin inspections along the Iditarod National Historic Trail (NHT).
- BLM partner the Iditarod Historic Trail Alliance is supporting and working with the community of White Mountain to develop a new public shelter cabin along the Iditarod Trail in the Topkok Hills west of the town.
- The Iditarod NHT program is providing technical assistance to the Iditarod Historic Trail Alliance and Nome Kennel Club for the installation of safety way-markers along the trail east of Nome.

Realty

- The Bureau of Land Management is announcing next steps in the implementation of the Alaska Native Vietnam-era Veterans Land Allotment Program and is seeking public comments to support an environmental assessment that will consider the effects of opening certain lands to selection by eligible Alaska Native Vietnam-era Veterans. The lands to be analyzed are associated with 28 million acres identified in five public land orders signed in January 2021. The 60-day public comment period ends on Sept. 21, 2021.
 - Maps and other planning documents associated with the project are available on the BLM's National NEPA Register at <https://eplanning.blm.gov/eplanning-ui/project/2014748/510>
 - For additional information on the environmental assessment development, contact project lead Racheal Jones at rajones@blm.gov
 - For questions on the Alaska Native Vietnam-era Veteran Allotment Program of 2019 visit <https://www.blm.gov/alaska/2019AKNativeVetsLand> or contact Paul Krabacher at pkrabach@blm.gov

Hazmat

- With new Hazmat staff onboard, start planning for cleanup activities at nine remote sites near Salmon Lake, Rohn, Golsovia Creek, and Jacksmith Creek. Activities will include removal of non-hazardous solid waste, non-historic structures, and oil/hazardous substances contamination
- Conducted a site visit and assessment with the US Army Corps of Engineers at the Kodiak Burma Road Military Munitions Response Program Site.
- Attended the annual Project Delivery Team meeting for the Kodiak Buskin Beach Formerly Used Defense Site

Minerals

- Conducted inspections in late June at two operations in the Nome area, assessing the cleanup of unauthorized use and occupancy and a Notice of exploration.
- Continues to work with operators in the Flat area addressing compliance issues including ongoing reclamation and monitoring.
- Conducted inspection of Platinum Mine in early August. Mining and Aquatics staff are working with claimant to move forward the Salmon River Fish Passage Enhancement Project.

Building Partnerships and Capacity for Federal Subsistence Fisheries Management and Research in the North

Partners for Fisheries Monitoring Program (PFMP)

Introduction

The Partners for Fisheries Monitoring Program was established in 2002 to increase the opportunity for Alaska Native and rural organizations to participate in Federal subsistence management. The program provides funding for fishery biologist, social scientist, or educator positions within the organization, with the intent of building and sustaining the organization's fisheries management expertise. In addition, the program supports a variety of opportunities for local, rural students to connect with subsistence management through science camps and paid internships.

The program has provided funding to mentor more than 100 college and 450 high school students, some of whom have gone on to become professionals in the field of natural resource conservation. To date with 13.3 million dollars spent, the program has supported nine Alaska Native organizations in building capacity. Organizations are funded for up to four years through a competitive grant process.

How to Get Involved

The next funding opportunity will open in 2023; it is never too early to reach out and to begin planning the components of a proposed PFMP program. The Office of Subsistence Management (OSM) is happy to answer questions and provide advice regarding its various funding programs.

OSM also partners with the Alaska Native Science and Engineering Program (ANSEP) to provide internship opportunities that expose students to careers in natural resource management. If your existing Alaska based fisheries program could benefit from a student internship, or if your program has exciting fisheries-related opportunities to challenge and educate Alaska's rural youth, please be sure to let us know!

For more information, please visit our site at <https://www.doi.gov/subsistence/partners>. You can also contact the program's coordinator, Karen Hyer at karen_hyer@fws.gov or 907-786-3689.

Partner Contacts

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- **TCC:** Brian McKenna, brian.mckenna@tananachiefs.org
- **QTU:** Chandra Poe, chandra@qawalagin.com

2021 Partners Program Participant Summaries

Bristol Bay Native Association (BBNA)

The Bristol Bay Native Association (BBNA) researches and highlights the role of fish used in satisfying a way of life, through collaborative investigations with our member tribes, universities, and state and federal managers. These partnerships inform our citizens of any changes to the public's relationships with fish and emphasize the value in the co-production of traditional knowledge and contemporary sciences research.

The BBNA Partners program funding is used in supporting the conversation between our residents, communities, and the managers tasked with decision-making on essential food resources. The program reinforces public input to the region's Fish and Game Advisory Committees, NPS Subsistence Resource Commissions, and the Federal Regional Advisory Council, while relaying information gathered from the social science investigations. Recent focus has been on subsistence fishery funding from section 12005 of the Cares Act, and the Chignik Fisheries disaster relief efforts.

Over the past year, the program informed and collaborated on multiple investigations and recent publications, some of which are available online and focus on; The Naknek River Subsistence Salmon Harvest, Subsistence Salmon Sharing Networks on the Alaska Peninsula, Voices of Alaska Native Women Fishers, Sharing Food and Community Resilience, and a Subsistence Harvest Assessment and Stock Composition of Dolly Varden and Nonsalmon Fish Stocks in the Togiak National Wildlife Refuge.

BBNA's program has coordinated dozens of internships with partners like Lake Clark National Park, Togiak National Wildlife Refuge, Alaska Dept. of Fish and Game, and the University of Washington. The leaders involved in these summer experiences have guided many students into careers in natural resource management. Some of those students have now become the mentors to the next cohort of future leaders. While the 2020 summer internships were successfully held virtually, we are looking forward to getting the hands-on field experiences in 2021!

Yakutat Tlingit Tribe (YTT)

Yakutat Tlingit Tribe (YTT) is a federally recognized tribe with 820 enrolled Tribal Members located on the northern coast of the Gulf of Alaska. Developing conservation concerns about local salmon stocks have highlighted the need for building capacity for fisheries monitoring and management in the YTT Environmental Department. Through the Partners Program, YTT hired a full time Fisheries Biologist in 2020 to participate in subsistence management and instill place-based knowledge on the Situk River. YTT's Fisheries Biologist partners with the Yakutat District River Ranger to serve as the primary contacts to the public on the Situk River (April-September).

The team's primary job is to contact Situk users to promote stewardship and cultural awareness. Being on the river during peak fishing seasons, they can communicate conservation messages to anglers streamside on topics like catch and release, don't tread on redds, salmon ecology, angler etiquette, current regulations, alternative fishing sites, and habitat degradation. The biologist provides river users with

context about history and cultural importance of salmon with the Situk being the primary source for subsistence in Yakutat. In the past, brown bears associating anglers with fish has been a safety concern for both people and bears on the Situk. However, in coordination with the USFS Wildlife Biologist and Fish and Game, the River Rangers have aggressively worked to curb the behaviors amongst fisherman that lead to this problem. The consistent presence of the partners alone will prompt stewardship and good behavior amongst the varied Situk River users.

The Partners Program has enhanced YTT's capacity by broadening the scope of resources and tools available to the Tribe such as allowing access to valuable data like river use, stream restoration trainings, and research methods like eDNA. This partnership forges a strong foundation that strengthens and supports the YTT Environmental Department's capacity to identify and respond to conservation concerns that impact tribal interests. YTT looks forward to expanding the department and welcoming an intern under the Partners Program.

Tanana Chiefs Conference (TCC)

The Tanana Chiefs Conference (TCC) serves as a non-profit organization for the Interior region of Alaska. The TCC region covers an area of 235,000 square miles and overlaps three separate National Wildlife Refuges (NWR): Kanuti, Koyukuk-Innoko-Nowitna, and the Yukon Flats. Since its creation, the TCC has become the provider of several programs in the Interior of Alaska. Through contracts with the Bureau of Indian Affairs, TCC is responsible for the management and delivery of services such as housing, land management, tribal government assistance, education and employment services, and natural resources management.

Within TCC's organizational structure, the Wildlife and Parks (W&P) Program is responsible for serving the subsistence needs of its tribes and tribal members. The Partners Program allows the TCC W&P Program the ability to maintain a fulltime fisheries biologist on staff and has allowed TCC to develop the capacity to address the subsistence needs of TCC tribes and tribal members by conducting a variety of fisheries research programs and also by participating in federal and state fisheries management meetings.

Through the Partners Program, TCC has successfully operated the Henshaw Creek Weir salmon monitoring project in the upper Koyukuk River. TCC strives to recruit and hire local technicians and youth to assist with the project each year. The Henshaw project also hosts an annual summer science and culture camp that is jointly operated by TCC and the Kanuti NWR. Elders and youth are brought together at the camp where the Elders teach students traditional skills (like setting nets, cutting and drying fish, and Athabascan language). TCC and Kanuti staff provide lessons in western science such as weir sampling, salmon biology and ecology and fisheries management.

Outside of the Henshaw Creek Weir project, TCC has been able to lead other fisheries investigations such as updating the Yukon River Chinook and chum salmon genetic baselines, mapping salmon spawning habitat and updating the Anadromous Waters Catalog and exploring the capabilities of small unmanned aerial systems to assist with salmon research and management. Additionally, each year they host one or two Alaska Native Science and Engineering Program (ANSEP) summer bridge students and provide them with the opportunity to gain hands on knowledge and experience in fisheries management within the Yukon River drainage.

Native Village of Eyak (NVE)

The Native Village of Eyak's Department of the Environment and Natural Resources (NVE-DENR) Fisheries Program focuses on population monitoring, filling data gaps, using traditional ecological knowledge to improve data collection, and working with partners to ensure a future with healthy robust fish populations while supporting sustainable fisheries. PFMP funds are used to support a permanent fish biologist responsible for leading the fisheries program and seasonal fisheries interns who gain valuable hands-on experience.

The current PFMP is also supporting the development of a youth science and subsistence camp and outreach with other organizations and researchers throughout the region. Current research led by NVE's Partners Program biologist includes Chinook salmon inriver abundance, Copper River (2003-2021); Chinook salmon distribution and stock specific run timing, Copper River (2019-2021); Klutina River salmon enumeration sonar pilot study (2021-2024).

Furthermore, NVE is continually sharing its resources and expertise to accomplish more work through partnerships with other researchers. Current partners on side-studies include Alaska Department of Fish and Game Division of Sport Fish and Commercial Fisheries, Prince William Sound Science Center, and Ahtna Intertribal Resource Commission.

Native Village of Napaimute (NVN)

The Native Village of Napaimute (NVN) is a federally recognized tribe and has about 100 members; the village is only seasonally occupied currently. The Napaimute Partners in Fisheries Monitoring Program main goals are to; improve effectiveness of local outreach related to fisheries management, provide opportunities in natural resource education and experience for local youth, build local capacity through strategic program and workforce development, and develop a sustainable natural resource program.

Outreach related to fisheries management is achieved by participating in management discussions with various advisory groups i.e., Kuskokwim River Inter Tribal Fish Commission, Kuskokwim Salmon Management Working Group, and agencies (ADF&G, USFWS). We routinely post in-season management actions on social media and around the Villages to keep fishers informed on the latest regulations.

Our youth outreach involves two projects; the Math Science Expedition (MSE) and the George River Internship (GRI). The MSE is tailored more to be leadership development experience with some exposure to fisheries ecology and data collection. The MSE typically accommodates 25-30 students on a two week-long rafting trip down the Salmon and Aniak Rivers.

The GRI is an advanced paid Internship opportunity on the George River where Interns learn about river ecology, hydrology, sampling techniques for fish and benthic macro- invertebrates, leadership skills and career opportunities in the area of natural resource management.

The PFMP has allowed us to build the capacity to peruse funding for and help support fisheries monitoring programs (Aniak Test Fishery & Salmon River Weir) funded through the USFWS Fisheries Resource Monitoring Program, along with several environmental monitoring and fisheries assistance projects. Projects are mostly staffed by local residents and Alaska Native Science and Engineering Students (ANSEP).

Orutsararmiut Native Council (ONC)

Orutsararmiut Native Council (ONC) is the Federally recognized Tribal Government for the Native Village of Bethel, Alaska and has greatly expanded its Partners Program since 2008. ONC Partners Program strives to support ongoing fisheries in season and postseason monitoring programs; serve as a mentor for rural, Alaska Native student interns in coordination with other state, federal, and tribal entities; communicate results of the fisheries monitoring program projects to various audiences to enhance federal subsistence management awareness in rural communities; continue youth internship programs; and pursue external funds and partnerships to expand the current Partners Program. In the past, with the support of the Partners Program, ONC was able to conduct annual Science & Culture Camps, as well as science, technology, engineering, and math (STEM) middle school career exploration programs in Bethel with the help of Alaska Native Science & Engineering Program (ANSEP) and several other partner agencies.

Our Partners Program also became involved with the Aniak & Salmon River Math & Science Expedition by fisheries educational outreach with youth from the middle Kuskokwim. ONC's involvement with youth camp programs throughout the years was able to reach many students ranging from 6th to 12th grade. Despite the difficulties and cancellations that came with the COVID-19 pandemic, ONC's Partners Program work has continued in a safe manner with new procedures and creative methods to engage youth. We would like to sincerely thank the Office of Subsistence Management and other partnering entities, for without their support, our program would not have had the ability to support the youth of the Yukon-Kuskokwim Delta. The support of our partners has allowed ONC to have great success in expanding its involvement on scientific and educational outreach projects and programs.

Qawalangin Tribe of Unalaska (QTU)

The Qawalangin Tribe of Unalaska is a federally recognized sovereign nation. The Unangan people have continuously occupied their homelands along the Aleutian and Pribilof Islands for thousands of years, relying on a close relationship with the sea and lands.

As a new participant in the Partners program, the Tribe is looking forward to continuing work to ensure healthy subsistence species and food sovereignty for generations to come.

A key project in our first year as a Partners program participant was collaborating with ADFG to operate a weir at McLees Lake, monitoring this sockeye run that is an important subsistence resource for the community. In our first year, we restored structures at the site that had fallen into disrepair during a 2-year gap in funding for the weir. Our staff gained experience in weir setup and operations and scale sampling. We are looking forward to building our staff capacity and increasing our presence at the weir in coming seasons and working to ensure continuity of this important salmon monitoring site.

In addition to continuing work at the McLees weir in partnership with ADFG, in the coming years we are looking forward to establishing a strong outreach and education program to build awareness and support of subsistence resource management, so important to our coastal community.

Subsistence Regional Advisory Council Correspondence Policy

The Federal Subsistence Board (Board) recognizes the value of the Regional Advisory Councils' role in the Federal Subsistence Management Program. The Board realizes that the Councils must interact with fish and wildlife resource agencies, organizations, and the public as part of their official duties, and that this interaction may include correspondence. Since the beginning of the Federal Subsistence Program, Regional Advisory Councils have prepared correspondence to entities other than the Board. Informally, Councils were asked to provide drafts of correspondence to the Office of Subsistence Management (OSM) for review prior to mailing. Recently, the Board was asked to clarify its position regarding Council correspondence. This policy is intended to formalize guidance from the Board to the Regional Advisory Councils in preparing correspondence.

The Board is mindful of its obligation to provide the Regional Advisory Councils with clear operating guidelines and policies, and has approved the correspondence policy set out below. The intent of the Regional Advisory Council correspondence policy is to ensure that Councils are able to correspond appropriately with other entities. In addition, the correspondence policy will assist Councils in directing their concerns to others most effectively and forestall any breach of department policy.

The Alaska National Interest Lands Conservation Act, Title VIII required the creation of Alaska's Subsistence Regional Advisory Councils to serve as advisors to the Secretary of the Interior and the Secretary of Agriculture and to provide meaningful local participation in the management of fish and wildlife resources on Federal public lands. Within the framework of Title VIII and the Federal Advisory Committee Act, Congress assigned specific powers and duties to the Regional Advisory Councils. These are also reflected in the Councils' charters. (*Reference: ANILCA Title VIII §805, §808, and §810; Implementing regulations for Title VIII, 50 CFR 100 __.11 and 36 CFR 242 __.11; Implementing regulations for FACA, 41 CFR Part 102-3.70 and 3.75*)

The Secretaries of Interior and Agriculture created the Federal Subsistence Board and delegated to it the responsibility for managing fish and wildlife resources on Federal public lands. The Board was also given the duty of establishing rules and procedures for the operation of the Regional Advisory Councils. The Office of Subsistence Management was established within the Federal Subsistence Management Program's lead agency, the U.S. Fish and Wildlife Service, to administer the Program. (*Reference: 36 CFR Part 242 and 50 CFR Part 100 Subparts C and D*)

Policy

1. The subject matter of Council correspondence shall be limited to matters over which the Council has authority under §805(a)(3), §808, §810 of Title VIII, Subpart B §___.11(c) of regulation, and as described in the Council charters.
2. Councils may, and are encouraged to, correspond directly with the Board. The Councils are advisors to the Board.
3. Councils are urged to also make use of the annual report process to bring matters to the Board's attention.

4. As a general rule, Councils discuss and agree upon proposed correspondence during a public meeting. Occasionally, a Council chair may be requested to write a letter when it is not feasible to wait until a public Council meeting. In such cases, the content of the letter shall be limited to the known position of the Council as discussed in previous Council meetings.
5. Except as noted in Items 6, 7, and 8 of this policy, Councils will transmit all correspondence to the Assistant Regional Director (ARD) of OSM for review prior to mailing. This includes, but is not limited to, letters of support, resolutions, letters offering comment or recommendations, and any other correspondence to any government agency or any tribal or private organization or individual.
 - a. Recognizing that such correspondence is the result of an official Council action and may be urgent, the ARD will respond in a timely manner.
 - b. Modifications identified as necessary by the ARD will be discussed with the Council chair. Councils will make the modifications before sending out the correspondence.
6. Councils may submit written comments requested by Federal land management agencies under ANILCA §810 or requested by regional Subsistence Resource Commissions (SRC) under §808 directly to the requesting agency. Section 808 correspondence includes comments and information solicited by the SRCs and notification of appointment by the Council to an SRC.
7. Councils may submit proposed regulatory changes or written comments regarding proposed regulatory changes affecting subsistence uses within their regions to the Alaska Board of Fisheries or the Alaska Board of Game directly. A copy of any comments or proposals will be forwarded to the ARD when the original is submitted.
8. Administrative correspondence such as letters of appreciation, requests for agency reports at Council meetings, and cover letters for meeting agendas will go through the Council's regional coordinator to the appropriate OSM division chief for review.
9. Councils will submit copies of all correspondence generated by and received by them to OSM to be filed in the administrative record system.
10. Except as noted in Items 6, 7, and 8, Councils or individual Council members acting on behalf of or as representative of the Council may not, through correspondence or any other means of communication, attempt to persuade any elected or appointed political officials, any government agency, or any tribal or private organization or individual to take a particular action on an issue. This does not prohibit Council members from acting in their capacity as private citizens or through other organizations with which they are affiliated.

Approved by the Federal Subsistence Board on June 15, 2004.

Winter 2022 Regional Advisory Council Meeting Calendar

Last updated 3/19/2021

Due to travel budget limitations placed by Department of the Interior on the U.S. Fish and Wildlife Service and the Office of Subsistence Management, the dates and locations of these meetings will be subject to change.

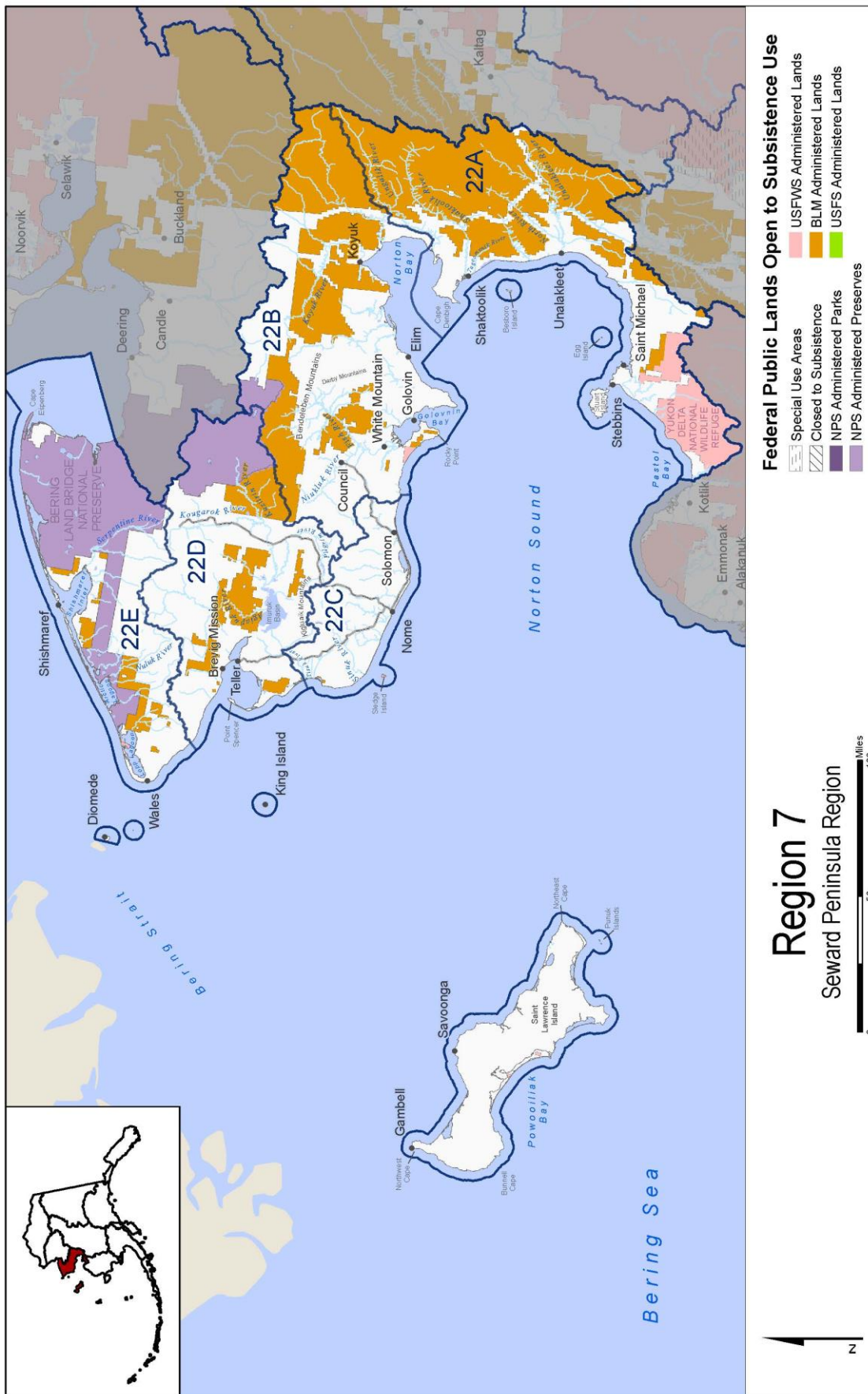
Sunday	Monday	Tuesday	Wednesday-	Thursday	Friday	Saturday
<i>Feb. 6</i>	<i>Feb. 7</i> <i>Window</i> <i>Opens</i>	<i>Feb. 8</i>	<i>Feb. 9</i>	<i>Feb. 10</i>	<i>Feb. 11</i>	<i>Feb. 12</i>
		BB - Naknek		SC - Anchorage		
<i>Feb. 13</i>	<i>Feb. 14</i>	<i>Feb. 15</i>	<i>Feb. 16</i>	<i>Feb. 17</i>	<i>Feb. 18</i>	<i>Feb. 19</i>
	NWA - Kotzebue		WI - Galena			
<i>Feb. 20</i>	<i>Feb. 21</i> PRESIDENTS DAY HOLIDAY	<i>Feb. 22</i>	<i>Feb. 23</i>	<i>Feb. 24</i>	<i>Feb. 25</i>	<i>Feb. 26</i>
		KA - Kodiak				
<i>Feb. 27</i>	<i>Feb. 28</i>	<i>Mar. 1</i>	<i>Mar. 2</i>	<i>Mar. 3</i>	<i>Mar. 4</i>	<i>Mar. 5</i>
		YKD - Bethel		SP - Nome		
<i>Mar. 6</i>	<i>Mar. 7</i>	<i>Mar. 8</i>	<i>Mar. 9</i>	<i>Mar. 10</i>	<i>Mar. 11</i>	<i>Mar. 12</i>
		EI - Fort Yukon				
		NS - TBD				
<i>Mar. 13</i>	<i>Mar. 14</i>	<i>Mar. 15</i>	<i>Mar. 16</i>	<i>Mar. 17</i>	<i>Mar. 18</i>	<i>Mar. 19</i>
<i>Mar. 20</i>	<i>Mar. 21</i>	<i>Mar. 22</i>	<i>Mar. 23</i>	<i>Mar. 24</i>	<i>Mar. 25</i>	<i>Mar. 26</i>
		SEA - Sitka			<i>Window</i> <i>Closes</i>	

Fall 2022 Regional Advisory Council Meeting Calendar

Last updated 8/5/2021

Due to travel budget limitations placed by Department of the Interior on the U.S. Fish and Wildlife Service and the Office of Subsistence Management, the dates and locations of these meetings will be subject to change.

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
<i>Aug. 7</i>	<i>Aug. 8 Window Opens</i>	<i>Aug. 9</i>	<i>Aug. 10</i>	<i>Aug. 11</i>	<i>Aug. 12</i>	<i>Aug. 13</i>
<i>Aug. 14</i>	<i>Aug. 15</i>	<i>Aug. 16</i>	<i>Aug. 17</i>	<i>Aug. 18</i>	<i>Aug. 19</i>	<i>Aug. 20</i>
<i>Aug. 21</i>	<i>Aug. 22</i>	<i>Aug. 23</i>	<i>Aug. 24</i>	<i>Aug. 25</i>	<i>Aug. 26</i>	<i>Aug. 27</i>
<i>Aug. 28</i>	<i>Aug. 29</i>	<i>Aug. 30</i>	<i>Aug. 31</i>	<i>Sep. 1</i>	<i>Sep. 2</i>	<i>Sep. 3</i>
<i>Sep. 4</i>	<i>Sep. 5 Labor Day Holiday</i>	<i>Sep. 6</i>	<i>Sep. 7</i>	<i>Sep. 8</i>	<i>Sep. 9</i>	<i>Sep. 10</i>
<i>Sep. 11</i>	<i>Sep. 12</i>	<i>Sep. 13</i>	<i>Sep. 14</i>	<i>Sep. 15</i>	<i>Sep. 16</i>	<i>Sep. 17</i>
<i>Sep. 18</i>	<i>Sep. 19</i>	<i>Sep. 20</i>	<i>Sep. 21</i>	<i>Sep. 22</i>	<i>Sep. 23</i>	<i>Sep. 24</i>
<i>Sep. 25</i>	<i>Sep. 26</i>	<i>Sep. 27</i>	<i>Sep. 28</i>	<i>Sep. 29</i>	<i>Sep. 30</i>	<i>Oct. 1</i>
<i>Oct. 2</i>	<i>Oct. 3</i>	<i>Oct. 4</i>	<i>Oct. 5</i>	<i>Oct. 6</i>	<i>Oct. 7</i>	<i>Oct. 8</i>
<i>Oct. 9</i>	<i>Oct. 10 Columbus Day Holiday</i>	<i>Oct. 11</i>	<i>Oct. 12</i>	<i>Oct. 13</i>	<i>Oct. 14</i>	<i>Oct. 15</i>
<i>Oct. 16</i>	<i>Oct. 17</i>	<i>Oct. 18</i>	<i>Oct. 19</i>	<i>Oct. 20</i>	<i>Oct. 21</i>	<i>Oct. 22</i>
<i>Oct. 23</i>	<i>Oct. 24</i>	<i>Oct. 25</i>	<i>Oct. 26</i>	<i>Oct. 27</i>	<i>Oct. 28</i>	<i>Oct. 29</i>
<i>Oct. 30</i>	<i>Oct. 31</i>	<i>Nov. 1</i>	<i>Nov. 2</i>	<i>Nov. 3</i>	<i>Nov. 4 Window Closes</i>	<i>Nov. 5</i>



**Department of the Interior
U. S. Fish and Wildlife Service**

Seward Peninsula Subsistence Regional Advisory Council

Charter

1. **Committee's Official Designation.** The Council's official designation is the Seward Peninsula Subsistence Regional Advisory Council (Council).
2. **Authority.** The Council is renewed by virtue of the authority set out in the Alaska National Interest Lands Conservation Act (ANILCA) (16 U.S.C. 3115 (1988)), and under the authority of the Secretary of the Interior, in furtherance of 16 U.S.C. 410hh-2. The Council is regulated by the Federal Advisory Committee Act (FACA), as amended (5 U.S.C. Appendix 2).
3. **Objectives and Scope of Activities.** The objective of the Council is to provide a forum for the residents of the Region with personal knowledge of local conditions and resource requirements to have a meaningful role in the subsistence management of fish and wildlife on Federal lands and waters in the Region.
4. **Description of Duties.** Council duties and responsibilities, where applicable, are as follows:
 - a. Recommend the initiation, review, and evaluation of proposals for regulations, policies, management plans, and other matters relating to subsistence uses of fish and wildlife on public lands within the Region.
 - b. Provide a forum for the expression of opinions and recommendations by persons interested in any matter related to the subsistence uses of fish and wildlife on public lands within the Region.
 - c. Encourage local and regional participation in the decision-making process affecting the taking of fish and wildlife on the public lands within the Region for subsistence uses.
 - d. Prepare an annual report to the Secretary containing the following:
 - (1) An identification of current and anticipated subsistence uses of fish and wildlife populations within the Region.
 - (2) An evaluation of current and anticipated subsistence needs for fish and wildlife populations within the Region.
 - (3) A recommended strategy for the management of fish and wildlife populations within the Region to accommodate such subsistence uses and needs; and

- (4) Recommendations concerning policies, standards, guidelines, and regulations to implement the strategy.
- e. Make recommendations on determinations of customary and traditional use of subsistence resources.
 - f. Make recommendations on determinations of rural status.
 - g. Provide recommendations on the establishment and membership of Federal local advisory committees.
 - h. Provide recommendations for implementation of Secretary's Order 3347: Conservation Stewardship and Outdoor Recreation, and Secretary's Order 3356: Hunting, Fishing, Recreational Shooting, and Wildlife Conservation Opportunities and Coordination with States, Tribes, and Territories. Recommendations shall include, but are not limited to:
 - (1) Assessing and quantifying implementation of the Secretary's Orders, and recommendations to enhance and expand their implementation as identified;
 - (2) Policies and programs that:
 - (a) increase outdoor recreation opportunities for all Americans, with a focus on engaging youth, veterans, minorities, and other communities that traditionally have low participation in outdoor recreation;
 - (b) expand access for hunting and fishing on Bureau of Land Management, U.S. Fish and Wildlife Service, and National Park Service lands in a manner that respects the rights and privacy of the owners of non-public lands;
 - (c) increase energy, transmission, infrastructure, or other relevant projects while avoiding or minimizing potential negative impacts on wildlife; and
 - (d) create greater collaboration with States, Tribes, and/or Territories.
 - i. Provide recommendations for implementation of the regulatory reform initiatives and policies specified in section 2 of Executive Order 13777: Reducing Regulation and Controlling Regulatory Costs; Executive Order 12866: Regulatory Planning and Review, as amended; and section 6 of Executive Order 13563: Improving Regulation and Regulatory Review. Recommendations shall include, but are not limited to:

Identifying regulations for repeal, replacement, or modification considering, at a minimum, those regulations that:

- (1) eliminate jobs, or inhibit job creation;
- (2) are outdated, unnecessary, or ineffective;
- (3) impose costs that exceed benefits;
- (4) create a serious inconsistency or otherwise interfere with regulatory reform initiative and policies;
- (5) rely, in part or in whole, on data or methods that are not publicly available or insufficiently transparent to meet the standard for reproducibility; or
- (6) derive from or implement Executive Orders or other Presidential and Secretarial directives that have been subsequently rescinded or substantially modified.

All current and future Executive Orders, Secretary's Orders, and Secretarial Memos should be included for discussion and recommendations as they are released. At the conclusion of each meeting or shortly thereafter, provide a detailed recommendation meeting report, including meeting minutes, to the Designated Federal Officer (DFO).

5. **Agency or Official to Whom the Council Reports.** The Council reports to the Federal Subsistence Board Chair, who is appointed by the Secretary of the Interior with the concurrence of the Secretary of Agriculture.
6. **Support.** The U.S. Fish and Wildlife Service will provide administrative support for the activities of the Council through the Office of Subsistence Management.
7. **Estimated Annual Operating Costs and Staff Years.** The annual operating costs associated with supporting the Council's functions are estimated to be \$155,000,0 including all direct and indirect expenses and 1.0 Federal staff years.
8. **Designated Federal Officer.** The DFO is the Subsistence Council Coordinator for the Region or such other Federal employee as may be designated by the Assistant Regional Director – Subsistence, Region 7, U.S. Fish and Wildlife Service. The DFO is a full-time Federal employee appointed in accordance with Agency procedures. The DFO will:
 - (a) Approve or call all Council and subcommittee meetings;
 - (b) Prepare and approve all meeting agendas;
 - (c) Attend all committee and subcommittee meetings;

(d) Adjourn any meeting when the DFO determines adjournment to be in the public interest; and

(e) Chair meetings when directed to do so by the official to whom the advisory committee reports.

9. **Estimated Number and Frequency of Meetings.** The Council will meet 1-2 times per year, and at such times as designated by the Federal Subsistence Board Chair or the DFO.

10. **Duration.** Continuing.

11. **Termination.** The Council will be inactive 2 years from the date the Charter is filed, unless, prior to that date, the charter is renewed in accordance with the provisions of section 14 of the FACA. The Council will not meet or take any action without a valid current charter.

12. **Membership and Designation.** The Council's membership is composed of representative members as follows:

Ten members who are knowledgeable and experienced in matters relating to subsistence uses of fish and wildlife and who are residents of the Region represented by the Council.

To ensure that each Council represents a diversity of interests, the Federal Subsistence Board in their nomination recommendations to the Secretary will strive to ensure that seven of the members (70 percent) represent subsistence interests within the Region and three of the members (30 percent) represent commercial and sport interests within the Region. The portion of membership representing commercial and sport interests must include, where possible, at least one representative from the sport community and one representative from the commercial community.

The Secretary of the Interior will appoint members based on the recommendations from the Federal Subsistence Board and with the concurrence of the Secretary of Agriculture.

Members will be appointed for 3-year terms. Members serve at the discretion of the Secretary.

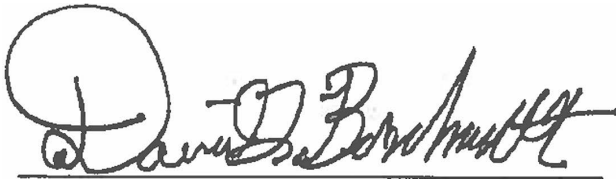
Alternate members may be appointed to the Council to fill vacancies if they occur out of cycle. An alternate member must be approved and appointed by the Secretary before attending the meeting as a representative. The term for an appointed alternate member will be the same as the term of the member whose vacancy is being filled.

Council members will elect a Chair, Vice-Chair, and Secretary for a 1-year term.

Members of the Council will serve without compensation. However, while away from

their homes or regular places of business, Council and subcommittee members engaged in Council, or subcommittee business, approved by the DFO, may be allowed travel expenses, including per diem in lieu of subsistence, in the same manner as persons employed intermittently in Government service under section 5703 of title 5 of the United States Code.

13. **Ethics Responsibilities of Members.** No Council or subcommittee member will participate in any Council or subcommittee deliberations or votes relating to a specific party matter before the Department or its bureaus and offices including a lease, license, permit, contract, grant, claim, agreement, or litigation in which the member or the entity the member represents has a direct financial interest.
14. **Subcommittees.** Subject to the DFOs approval, subcommittees may be formed for the purpose of compiling information and conducting research. However, such subcommittees must act only under the direction of the DFO and must report their recommendations to the full Council for consideration. Subcommittees must not provide advice or work products directly to the Agency. Subcommittees will meet as necessary to accomplish their assignments, subject to the approval of the DFO and the availability of resources.
15. **Recordkeeping.** Records of the Council, and formally and informally established subcommittees or other subgroups of the Council, must be handled in accordance with General Records Schedule 6.2, and other approved Agency records disposition schedule. These records must be available for public inspection and copying, subject to the Freedom of Information Act (5 U.S.C. 552).



Secretary of the Interior

DEC 12 2019

Date Signed

DEC 13 2019

Date Filed

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