



NORTH SLOPE  
SUBSISTENCE REGIONAL  
ADVISORY COUNCIL  
Meeting Materials

*March 15-16, 2017  
Utqiagvik*





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*On the cover...*

North Slope children are learning how to do *nalukatuk* (blanket toss)



Photo by Rosemary Alttuangaruak

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**NORTH SLOPE SUBSISTENCE REGIONAL ADVISORY COUNCIL**

Inupiat Heritage Center  
Utqiagvik

March 15-16, 2017  
9:00 am ~ 5:30 pm daily

**TELECONFERENCE:** call the toll free number: 1-866-864-5314, then when prompted enter the passcode: 3091862.

**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. Please fill out a comment form to be recognized by the Council chair. 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.

- 1. Invocation**
- 2. Call to Order** (*Chair*)
- 3. Roll Call and Establish Quorum** (*Secretary*).....4
- 4. Welcome and Introductions** (*Chair*)
- 5. Review and Adopt Agenda\*** (*Chair*) ..... 1
- 6. Election of Officers\***
  - Chair (*DFO*)
  - Vice-Chair (*New Chair*)
  - Secretary (*New Chair*)
- 7. Review and Approve Previous Meeting Minutes\*** (*Chair*) .....8
- 8. Reports**
  - Council Member Reports
  - Chair’s Report
- 9. Public and Tribal Comment on Non-Agenda Items** (available each morning)

**10. Old Business (Chair)**

**11. New Business (Chair)**

- a. Wildlife Closure Review - WCR15-25\* ..... 22
- b. Call for Federal Wildlife Proposals\* ..... 28
- c. Approve FY2016 Annual Report\* ..... 31
- d. Special Action WSA 17-02\*

**12. Agency Reports**

(Time limit of 15 minutes unless approved in advance)

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**14. Closing Comments**

**15. Adjourn (Chair)**

**To teleconference** into the meeting, call the toll free number: 1-866-864-5314, then when prompted enter the passcode: 3091862.

*Reasonable Accommodations*

The Federal Subsistence Board is committed to providing access to this meeting for all participants. Please direct all requests for sign language interpreting services, closed captioning,

or other accommodation needs to Eva Patton, 907-786-3358, [eva\\_patton@fws.gov](mailto:eva_patton@fws.gov), or 800-877-8339 (TTY), by close of business on March 7, 2017.

DRAFT

**REGION 10**  
**North Slope Subsistence Regional Advisory Council**

| <b>Seat</b> | <b>Year Appointed<br/><i>Term Expires</i></b> | <b>Member Name and Community</b>  |
|-------------|---|---|
| <b>1</b>    | 2011<br><b>2017</b>                           | <b>Gordon R. Brower</b><br>Barrow   |
| <b>2</b>    | 2011<br><b>2019</b>                           | <b>Robert V. Shears</b><br>Barrow   |
| <b>3</b>    | 2016<br><b>2018</b>                           | <b>Esther S. Hugo</b><br>Anaktuvuk Pass   |
| <b>4</b>    | 2015<br><b>2019</b>                           | <b>Wanda T. Kippi</b><br>Atqasuk  |
| <b>5</b>    | <b>2017</b>                                   | <b>VACANT</b>   |
| <b>6</b>    | <b>2017</b>                                   | <b>VACANT</b>   |
| <b>7</b>    | 2015<br><b>2019</b>                           | <b>Steve A. Oomituk</b><br>Point Hope   |
| <b>8</b>    | <b>2015</b>                                   | <b>VACANT</b>   |
| <b>9</b>    | 2006<br><b>2018</b>                           | <b>Lee Kayotuk</b><br>Kaktovik <span style="float: right;"><b>Secretary</b></span>                          |
| <b>10</b>   | 2009<br><b>2018</b>                           | <b>Rosemary Ahtuanguaruak</b><br>Barrow <span style="float: right;"><b>Vice Chair (Acting Chair)</b></span> |





U.S. Fish and Wildlife Service  
Bureau of Land Management  
National Park Service  
Bureau of Indian Affairs



Forest Service

## Federal Subsistence Board News Release

For Immediate Release:

*\*This provides corrected information to News  
Release dated December 9, 2016*

Contact: Caron McKee

(907) 786-3880 or (800) 478-1456  
caron\_mckee@fws.gov

### **Secretaries of the Interior and Agriculture appoint members to Federal Subsistence Regional Advisory Councils**

Secretary of the Interior Sally Jewell, with the concurrence of Secretary of Agriculture Tom Vilsack, has made appointments to the 10 Federal Subsistence Regional Advisory Councils. The Councils advise the Federal Subsistence Board on subsistence management regulations and policies and serve as a forum for public involvement in Federal subsistence management in Alaska. With these appointments (shown in bold), the current membership of the Councils is:

*SOUTHEAST ALASKA*

**Steve K. Reifenstuhel, Sitka**  
**Frank G. Wright Jr., Hoonah**  
**Patricia A. Phillips, Pelican**  
**Michael A. Douville, Craig**  
**Harvey Kitka, Sitka**  
Robert Schroeder, Juneau

Albert H. Howard, Angoon  
Donald C. Hernandez, Pt. Baker  
Kenneth L. Jackson, Kake  
Raymond D. Sensmeier, Yakutat  
John A. Yeager, Wrangell  
Michael D. Bangs, Petersburg  
Cathy A. Needham, Juneau

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*SOUTHCENTRAL ALASKA*

**Diane A. Selanoff, Valdez**  
**Eleanor Dementi, Cantwell**  
**R. Greg Encelewski, Ninilchik**  
**Daniel E. Stevens, Chitina**  
**Edward H. Holsten, Cooper Landing**  
Gloria Stickwan, Copper Center

James R. Showalter, Sterling  
Michael V. Opheim, Seldovia  
Andrew T. McLaughlin, Chenega Bay  
Judith C. Caminer, Anchorage  
Ingrid Peterson, Homer  
Thomas M. Carpenter, Cordova  
Ricky J. Gease, Kenai

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*KODIAK/ALEUTIANS*

**Antone A. Shelikoff, Akutan**  
**Patrick B. Holmes, Kodiak**  
**Richard Koso, Adak**  
**Samuel I. Rohrer, Kodiak**

Thomas L. Schwantes, Kodiak  
Coral Chernoff, Kodiak  
Rebecca Skinner, Kodiak  
Della Trumble, King Cove  
Speridon M. Simeonoff Sr., Akhiok  
Melissa M. Berns, Old Harbor

*BRISTOL BAY*

**Pete M. Abraham, Togiak**  
**Dennis Andrew, Sr., New Stuyahok**  
**Nanci A. Morris Lyon, King Salmon**  
Molly B. Chythlook, Dillingham  
William J. Maines, Dillingham

Senafont Shugak, Jr., Pedro Bay  
Dan O. Dunaway, Dillingham  
Lary J. Hill, Iliamna  
Victor A. Seybert, Pilot Point  
Richard J. Wilson, Naknek

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*YUKON-KUSKOKWIM DELTA*

**William F. Brown, Eek**  
**James A. Charles, Tuntutuliak**  
**John W. Andrew, Kwethluk**  
**Michael Peters, Marshall**  
Lester Wilde Sr., Hooper Bay  
Dale T. Smith, Jr., Mekoryuk

Anthony Ulak, Scammon Bay  
Annie C. Cleveland, Quinhagak  
Dorothy G. Johnson, Mountain Village  
Raymond J. Oney, Alakanuk  
Greg J. Roczicka, Bethel  
Robert E. Aloysius, Kalskag  
David A. Bill, Sr., Toksook Bay

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*WESTERN INTERIOR ALASKA*

**Shirley J. Clark, Grayling**  
**Donald V. Honea Jr., Ruby**  
**Pollock Simon Sr., Allakaket**  
Raymond L. Collins, McGrath  
Jack L. Reakoff, Wiseman

Darrel M. Vent, Sr., Huslia  
Timothy P. Gervais, Ruby  
Dennis R. Thomas, Sr., Crooked Creek  
Jenny K. Pelkola, Galena  
Fred W. Alexie, Kaltag

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*SEWARD PENINSULA*

Theodore Katcheak, Stebbins  
**Brandon D. Ahmasuk, Nome**  
**Louis H. Green Jr., Nome**  
**Thomas L. Gray, Nome**  
**Leland H. Oyoumick, Unalakleet**

Fred D. Eningowuk, Shishmaref  
Elmer K. Seetot Jr., Brevig Mission  
Charles F. Saccheus, Elim  
Ronald D. Kirk, Stebbins

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*NORTHWEST ARCTIC*

**Raymond Stoney, Kiana**  
**Beverly M. Moto, Deering**  
**Hannah P. Loon, Kotzebue**  
**Michael C. Kramer, Kotzebue**  
**Enoch Mitchell, Noatak**

Verne J. Cleveland Sr., Noorvik  
Louie A. Commack, Jr., Ambler  
Enoch A. Shiedt Sr., Kotzebue  
Percy C. Ballot Sr., Buckland  
Calvin D. Moto, Deering

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*EASTERN INTERIOR ALASKA*

**Susan L. Entsminger, Tok Cutoff**  
**Andrew P. Firmin, Fort Yukon**  
**Lester C. Erhart, Tanana**  
William L. Glanz, Central

Andrew W. Bassich, Eagle  
Will M. Koehler, Horsfeld  
Donald A. Woodruff, Eagle  
Virgil L. Umphenour, North Pole

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*NORTH SLOPE*

**Ester Hugo, Anaktuvuk Pass**  
**Robert V. Shears, Wainright**  
**Wanda T. Kippi, Atqasuk**  
**Steve Oomituk, Point Hope**

Sam Kunaknana, Nuiqsut  
James M. Nageak, Anaktuvuk Pass  
Gordon R. Brower, Barrow  
Lee Kayotuk, Kaktovik  
Rosemary Ahtaungaruak, Barrow

The Federal Subsistence Board is accepting applications for the 2017 appointment cycle until February 3, 2017. For more information, go to the Federal Subsistence Management Program website at <https://www.doi.gov/subsistence/statewide>.

Additional information on the Federal Subsistence Management Program may be found on the web at [www.doi.gov/subsistence](http://www.doi.gov/subsistence) or by visiting [www.facebook.com/subsistencealaska](http://www.facebook.com/subsistencealaska).

Missing out on the latest Federal subsistence issues? If you'd like to receive emails and notifications on the Federal Subsistence Management Program you may subscribe for regular updates by emailing [fws-fsb-subsistence-request@lists.fws.gov](mailto:fws-fsb-subsistence-request@lists.fws.gov).

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## NORTH SLOPE SUBSISTENCE REGIONAL ADVISORY COUNCIL

**Inupiat Heritage Center  
Barrow, Alaska**

**October 31 and November 1, 2016**

### MEETING MINUTES

#### **Council Members Present:**

Gordon Brower  
Robert Shears  
Lee Kayotuk  
Steve Oomituk  
Rosemary Ahtuanguak – Vice Chair (via teleconference)

#### **Meeting Attendees:**

Eva Patton, Council Coordinator, Office of Subsistence Management  
Gene Peltola, Jr., Assistant Regional Director, Office of Subsistence Management  
Orville Lind, Native Liaison, Office of Subsistence Management  
Jennifer Hardin, Anthropology Division Chief, Office of Subsistence Management  
Joshua Ream, Anthropologist, Office of Subsistence Management  
Karen Hyer, Fisheries Biologist, Office of Subsistence Management  
Vince Mathews, Subsistence Coordinator for Arctic, Kanuti and Yukon Flats  
Dave Yokel, Biologist, Bureau of Land Management  
Stacey Fritz, Anthropologist Subsistence Specialist BLM Arctic Office Fairbanks  
Gilbert Castellanos, External Affairs, USFWS Alaska Region Representative to the Arctic Council  
Sara Creachbaum, on detail to assist USFWS Alaska Region work on the Council of Arctic Flora and Fauna  
Ryan Klimstra, Wildlife Biologist, Alaska Department of Fish and Game, Barrow  
Nikki Bream, ADFG Division of Subsistence  
Pat Petrivelli, Anthropologist, Interagency Staff Committee, Bureau of Indian Affairs

#### *Via teleconference:*

Jill Klein, Special Assistant to the Commissioner, Alaska Department of Fish and Game  
Lincoln Parrett, Area Research Manager, Alaska Department of Fish and Game, Fairbanks  
Beth Lenart, Wildlife Biologist, Alaska Department of Fish and Game, Fairbanks  
Marcy Okada, Subsistence Coordinator, Gates of the Arctic National Park.  
Pippa Kenner, Anthropologist, Office of Subsistence Management  
Lisa Maas, Wildlife Biologist, Office of Subsistence Management  
Robbin LaVine, Anthropologist, Office of Subsistence Management  
Dan Sharp, Bureau of Land Management, Interagency Staff Committee

Carmen Daggett, AC Coordinator, Alaska Department of Fish and Game, Kotzebue  
Hillary Robinson, Anthropologist, Western Arctic Parklands

*Public and Local organizations:*

Louis Brower, Subsistence hunter, Barrow  
Delbert Rexford, Whaling Captain, Barrow  
Roy M. Nageak, Sr., BLM NPR-A, Barrow Office  
Jor Leavitt, Barrow  
Geoff Carroll, Barrow

**Roll Call:** Council members Steve Oomituk and Lee Kayotuk flights were delayed by weather so the Council re-convened with quorum in the afternoon when they arrived in Barrow. Sam Kunaknana unexcused absence. Rosemary Ahtuanguak, Vice Chair, was attending to family medical emergency, but was able to participate for portions of the meeting by teleconference. Quorum was established for a portion of the meeting. With the Council membership only at six members, the presence of only four members was required to establish a quorum.

The Council nominated Gordon Brower to serve as Acting Chair for this meeting. With a quorum present, the motion carried.

**Welcome and introductions:** The Council and staff noted the recent retirement of Harry Brower, Jr. and commended his work and dedication to the subsistence in the region. Harry Brower, Jr served on the North Slope Subsistence Regional Advisory Council for 23 years, since the inception of the Federal Subsistence Management Program. He was recently elected Mayor of the North Slope Borough and the Council wished him well in his important new job.

**Review and Adopt Agenda:** The Council reviewed the agenda and added Wildlife Special Action 16-03 to the agenda for review and recommendation to the Board and increased the time limit for the ADF&G caribou report to have a full review and discussion on the status of the caribou herds. A muskox update was also added to the agenda. The Council also voted to address all action items on the agenda first while they had quorum.

**Review and Approve Previous Meeting Minutes:** The Council reviewed and approved the March 9, 2016 meeting minutes. There were no corrections or edits.

**Council member reports:**

**Gordon Brower – Barrow:** Gordon shared that he and his brother Louis take turns as the whaling captain for the spring and fall whale hunt. Gordon expressed that he loves to go spring whaling. They didn't catch a whale this year but others in Barrow did. Gordon shared that he loves to fish and caught a lot of fish this year which helps support his whaling activities. He helps to feed his whaling crew and families in Barrow with the fish he catches. Gordon also noted that about 80% of his fish catch goes to the blanket toss community celebration. He noted he gave out about 20 sacks of fish to support the whaling crew and their families and donated another 20 sacks of fish for the successful whaling captains to share with the community.

Gordon stressed the importance of sharing for a successful subsistence harvest and a happy community.

Gordon reported that this fall the river did not freeze up until after October 15 and was slushy so a lot of people were not able to access the fall fish runs. Gordon stressed that the Ikpikpuk River has one of the largest whitefish runs on the North Slope similar to the Coleville River and is very important for subsistence. He expressed concern about warming temperatures changing the river flow and late freeze up preventing access to subsistence fishing. He also noted warm temperatures made it difficult to adequately freeze the fish to keep for the winter and that the condition and color of the roe had changed from fresh bright yellow to red or orange. He is very concerned about the impacts warmer temperatures are having on the health of the fish as well as being able to harvest and preserve fish that they depend on for subsistence.

Gordon reported that seal hunting was good this year and that his son is now taking over seal hunting for the family. He noticed at the skin boat races this Fourth of July that they had a leak in their boat and needed to replace the skins. Gordon expressed he was very happy to have a good seal harvest and enough skins to replace the old ones on their umiaq. His son was also fortunate to get a walrus this year and he is really happy about that.

Gordon reported that the rivers were low this summer which made it difficult to travel by boat but they did get a bunch of rain in August and the rivers rose quickly and they were able to get out to harvest caribou. He noted that the caribou looked healthy and fat.

Gordon reported that rain on snow and freeze - thaw events such as was happening at the time of this meeting – were of great concern for the wellbeing of the caribou. He stressed that conservation measures were still needed to support the Western Arctic Caribou Herd, even if the numbers presented by ADF&G in WSA16-03 indicated the decline had slowed it was too early to conclude survival for the winter. He noted that the warm weather creates hard, frozen snow and ice blanketing the tundra makes it difficult for caribou to feed and also to travel safely. He was concerned for caribou breaking legs when running across slick, icy land due to the freezing rain events.

Gordon expressed concern about the vacant seats on the Council and ways to get the word out to applicants such as radio announcements.

**Steve Oomituk - Point Hope:** Steve reported they are fortunate to see a lot of caribou come through and stayed around Point Hope for a while. He expressed that it had been some time that hunters had been having to travel far to hunt caribou. In recent years hunters have had to travel as much as 50 – 60 miles to the east to hunt caribou, however Steve noted that somehow this year the closure in Unit 23 to non-resident hunters on Federal lands seemed to help the caribou migration route come back through the Point Hope area.

Steve highlighted that this has been a very good year for Point Hope for subsistence. The community got a lot of oogruks, a few walrus, and a lot of fish. They have been catching all kinds of fish this year including salmon, char, and herring.

Steve shared it was also a very good year for Point Hope because they got seven whales and it had been a long time since they had harvested this many. The ice conditions have not been the best since they only had ice a half mile out. They usually go out whaling 14 miles from Point

Hope in the beginning of April but this year they had to use motor boats to get out that far too where the currents are. The pack ice has been moving further and further away from Point Hope and it exposes them to weather and tears up the shoreline. Now there is 300 – 400 miles of open water in the winter. Point Hope has been experiences changes in the weather, a lot warmer and the winds have shifted – they are getting a lot of east winds now.

Now that the ice is opening up a lot more they are seeing more and more shipping traffic and cruise ships. Point Hope is very concerned about this marine shipping because they rely on the ocean and the lands in this area and all the animals for their subsistence way of life. They are very concerned about any shipping waste dumped at sea and increasing potential for oil spill accidents.

**Robert Shears – Wainwright:** Bob Shears reported that Wainwright had a very successful and prosperous year for subsistence. Wainwright experienced a mild spring and early thaw and also had an early whaling season this year and filled their quota of 7 whales very quickly. Bob explained that usually Wainwright has to expend a lot of gas and effort to get 10-20 miles out to the open leads where the whales usually gather. However, this year the ice was out only 400 yards from the beach and the whales were actually following the ice edge so the community was able to harvest whales just five miles from Wainwright. The whale were pulled up right in front of town and the whole community was able to drive down to the beach and pick up their share of the whale harvest to take it home and put in ice cellars. They were concerned about the impacts of warming temperatures but this year the conditions were supportive for their whale harvest.

Bob shared that Wainwright also harvested a lot of oogrük which seemed very plentiful this year. He noted that since Wainwright hunts with aluminum skiffs and not sealskin boats they shared a lot of oogrük skins with other communities that use traditional skin covered umiaqs.

Bob reported that the migratory birds came in tremendous numbers and were on schedule arriving in the area as they usually do in May. The community had a very successful bird harvest. Bob expressed that the nesting habitat seemed good and that there were fewer foxes preying on the birds. He did note that there seemed to be a big increase in gulls feeding on eggs at nests even far inland. Bob shared that he spent a lot of time this spring getting to know the land around Barrow by hiking and camping. While he was out hiking he saw a tremendous number of migratory bird nests but the gulls seemed to be harassing the nests and eating the eggs more than he has seen in the past.

Bob reported the caribou appeared very healthy this summer and fall. The mosquitos were not bad this year, especially along the coast and the animals did not have too much insect stress this year. Water levels in the rivers and tundra around Wainwright were very low so it made getting upriver to hunt by boat very difficult. Bob reported he went up the Kuk River with his son this summer and there were areas of the river and tributaries that had completely dried up making it difficult to get far enough to reach the caribou. They were however able to catch a lot of grayling on this trip. Bob reported now that the freeze – thaw conditions this fall had made travel very icy and difficult for the caribou to run so it was easy to hunt them and they easily caught their quota of five cows a day. He expressed people are very concerned reporting that they are seeing many handicapped caribou and moving very slow because of the freezing rain on the snow. They are very worried for the caribou surviving the winter if they are not be able to get at their forage because of the ice cover across the tundra.

**Lee Kayotuk – Kaktovik:** Lee shared the Kaktovik had an early spring and early break but the community was able to harvest three beluga and three bowhead whales. There were nearly 60 polar bears reported feeding on the carcasses. He noted that the spring goose hunt was not so good but during the summer people were able to catch a lot of fish by rod and reel after ice break up. Lee reported that the fall goose hunt was good with lots of snow geese everywhere.

Lee stressed that it was a very windy summer and so the caribou were farther inland to the east of Kaktovik and higher up in the Brooks Range which made it very difficult for the community to get to the caribou to hunt. Some people were able to get a few caribou that did hang around the community but he is concerned that the high amount of traffic with the development in Kaktovik is keeping the caribou further away from the community.

**Public and Tribal Comment on Non-agenda items:**

**Louis Brower** of Barrow shared that there have been very unusual weather patterns that are very noticeable in the community. He stressed that these changes have caused hardship to get out and provide for the community. He also reported that he hears a lot of concerns about planes chasing caribou and stressed it is very expensive to travel to hunt for subsistence and is disheartening to experience caribou getting pushed away by a plane.

Louis reported because of the rain and high water on the Ikpikpuk River this fall they were able to travel by boat far up river to hunt caribou. This is most rain and high water he is aware of in 50 years. Louis is very happy that he had a successful caribou hunt this fall due to the rains. However, he is concerned about the warming temperatures causing changes to the sea ice platform that they need to hunt whales. Louis stressed that in his experience the ice is freezing up a month later and thawing a month earlier than usual. He also is concerned that the ice platform is getting weaker and can be dangerous for the spring whale hunts.

Lois shared that this summer he caught over 14 salmon which is more than he has ever caught before. Others in the community also reported catching salmon and he felt that was a blessing.

Lois reported he had heard about potential endangered species listing for bearded seal and wondered what that was about because in his and others experience this year the oogruk seemed very abundant.

**Roy Nageak** of Barrow expressed concern for protecting the subsistence way of life and that it is not just about food security but also subsistence is tied intimately to the Inupiaq culture and is a spiritual relationship between the people and the land and the animals. Roy stressed that people who have access to hunting along the haul road or can afford to fly in to go hunting are having an impact on the local people who rely on subsistence to feed their families is part of the fabric of the community. He is very concerned that access to hunting caribou along the haul road has caused the herds migration to be deflected. Roy repeated ongoing concerns reported by Barrow residents and other communities of planes chasing caribou or deflecting the herd just when local subsistence hunters who have had to travel far across land are about to hunt the herd. He asked for a way to monitor flights so that disturbance to the caribou can be tracked.



**Draft Nonrural Determination Policy:** Dr. Jennifer Hardin, Office of Subsistence Management, provide a brief review of the Draft nonrural determination policy. In November of 2015 the final rule changing the rural determination process was published. The Federal Subsistence Board (Board) will determine which communities in Alaska are non-rural and all other communities and areas are therefore rural. In January of 2016, the Board directed the Staff to create a nonrural policy that outlines the administrative process for future non-rural determinations. This past July, 2016, the Board approved a draft nonrural policy, which was provided to the Councils in the meeting book for review. Regional Advisory Council feedback on the draft policy will be considered by the Board at the January 2017 meeting, at which time the Board would determine whether to adopt the policy.

The Council discussed potential scenarios that might have an impact on rural status of communities in the North Slope region and had questions about the changes to population size as a criteria for consideration. They also had concerns that the Barrow population was expanding and influx of development in the region could push near the 7000 threshold that had been part of the Rural Determination process in the past. The Council was updated that that the specific criteria that were used before would no longer be in place under the new policy and that the Councils would have a role in the nonrural review process of defining rural characteristics. The Council discussed concerns about industrial complex like Prudhoe Bay and Deadhorse being considered rural and increasing pressure on subsistence resources with access along the haul road. Jennifer Hardin did clarify that while Prudhoe Bay is reverted back to pre-2007 rural status under the Final Rule, a person must be a full time, permanent resident of the area and there are very few full time residents in the Prudhoe Bay/Deadhorse area.

**Wildlife Special Action 16-03:** Wildlife Special Action 16-03, submitted by the Alaska Department of Fish and Game, requested to open Federal public lands in Unit 23 to the harvest of caribou by non-federally qualified users. Copies of the letter of request submitted by the State of Alaska and the full analysis compiled by the Office of Subsistence Management, Tribal Consultation report, and summary of public comments received at the public hearings regarding WSA16-03 was provided to the Council and public.

Joshua Ream, Anthropologist for the Office of Subsistence Management, provided an overview and presentation on the analysis which covered the subsistence hunting activity in the area and an investigation into user conflicts on federal lands in the area. ADF&G Biologist Ryan Klimstra also provided updates on the current Western Arctic and Teshekpuk caribou herd count and evaluation of calf recruitment for this year and discussed points of the WSA16-03 request with the Council.

The Council made a motion to oppose WSA 16-03. With a quorum present, the motion carried. Discussion/ Justification: The Council feels it is pre-mature to lift the closure to non-federally qualified subsistence users in Unit 23 and that the closure should remain in effect for the remainder of the current one year time frame to assess how it is working. They have heard reports from some communities that they are seeing caribou migrating through where they used to and harvest opportunity has been good. The Council wants to be proactive and help support these communities that have been struggling to get the caribou they need. The Council stressed that this is a matter of food security and rural residents who are dependent on the caribou as their

main food source should have priority to caribou as food – not antlers from big bulls often sought by sport hunters. The Council is concerned about the bull/cow ratio and knows from experience that the big bull plays an important role in gathering the herd with large harem of cows. Fewer large bulls being harvested as a result of the closure could help support the health of the herd.

The Council feels overall that management should err on the side of caution for conservation and also put food on the table first prior to opening up the hunt to non-federally qualified hunters on federal lands. The Council stressed that the recent updated caribou count is still low enough and on the threshold of needing to manage under a preservative management level (in the Western Arctic Caribou Herd Management Plan).

The Council also discussed that the traditional hunting experience is based on non-conflict and that people like to share and to pass on this knowledge and experience in a positive way. The caribou are important to take care of family, relatives, elders, and share among the community and throughout the region.

The Council feels the reduction in user conflict and less intensity of interaction on the federal lands in Unit 23 will help support the meaningful traditional hunting experience.

**Fisheries Resource Monitoring Program Priority Information Needs:** OSM Fisheries Biologist, Karen Hyer, presented an overview of the Fisheries Resource Monitoring Program and provided handouts outlining the North Slope region draft priority information needs. The program began in 2000, supporting research to provide information important for the management of subsistence fisheries on Federal public lands in Alaska. Partnerships are encouraged between rural organizations, Tribes, universities and State and Federal agencies. The Regional Advisory Councils help to advise the program to on what are the highest priority information needs for their region by identifying issues of local concern and knowledge gaps related to subsistence fisheries. There is a call for research proposals every two years addressing both traditional ecological knowledge and harvest monitoring and stock, status and trends projects. OSM staff works with the Regional Advisory Councils and Federal managers to ensure that the monitoring program focuses on the highest priority information needs for management of Federal subsistence fisheries.

The Council was provided with a list of the current projects in place for the Northern region and then reviewed the priority information needs list that they had developed previously and also discussed with the small working group the Council formed at its last meeting to continue discussion on subsistence fisheries in the region. With a quorum present, the Council identified research priorities that included the following:

- Baseline harvest assessment and monitoring of subsistence fisheries in the North Slope region including historic trends and variability in harvest locations, harvest and uses of non-salmon species. The Council discussed further refining the priority rivers so that researches could better hone in the areas most important to subsistence. Robert Shears further identified tributaries flowing into Smith Bay as being the biggest concern especially in light of expanding industrial development and plans within the NPR-A.

- Baseline information, including abundance distribution and movement of Arctic Grayling in the Colville River and lower Colville River tributaries. This issue was brought up by Sam Kunaknana at a previous meeting and Rosemary Ahtuanguaruak confirmed that this is of interest for the community of Nuiqsut. Bob Shears further recalled the discussion was specific to concerns for mitigation of development in this area and understanding the migration of grayling between Fish Creek, Coleville River, the Anaktuvuk River and other tributaries in the region.
- Changes in broad and humpback fish, health associated with climate change in Northern Alaska. Of special interest are the Colville and the Ikpikpuk Rivers. This is a new topic that has come up through discussion with the Council working group and continuing concerns about the impact of mold on subsistence fish and what is causing this outbreak.
- Dolly Varden and overwintering identification in Alaska's northern rivers. The Council stressed the importance of identifying unique characteristics of overwintering habitat so that it can be protected from industrial development impacts. Steve Oomituk stressed that Dolly Varden char is vital to the community of Point Hope, especially when other subsistence resources are scarce they harvest a lot of Dolly Varden. He is interested to know about important overwintering areas in the Point Hope region and expand the studies to the west side of the North Slope.
- Steve Oomituk also noted that grayling is a very important subsistence fish for Point Hope and this year they were very abundant. This year rivers did not freeze and the community caught them by rod and reel instead of using nets.
- The Council discussed that they realize the FRMP program does not fund mitigation but yet it is critical to document baseline information on river systems critical to subsistence fisheries such as the Ikpikpuk and Chipp Rivers large spawning runs and overwintering areas for Broad Whitefish and yet oil development slated for the Cape Simpson area could affect this important habitat and migration routes. The Council felt baseline data such as water temperature monitoring would highlight changes occurring in the region.
- Council members stressed the importance of local hire and collaborative research with the local communities and that should be a priority for the research funding.

### **Fisheries Proposals:**

**FP17-04:** Revise methods and means for use of gillnets in Racetrack Slough of the Koyukuk River and the sloughs of the Huslia River drainage. FP17-04 is a crossover proposal between Council regions since residents of the Yukon-Northern area have C&T for this fishery.

Council recommendation: Support proposal FP17-04 as modified by the Western Interior Alaska Subsistence Regional Advisory Council that streams less than 40 feet wide can be up to 70

percent blocked and streams over 40 feet wide have to allow a 20-foot open corridor passage. With a quorum present, the motion carried.

Justification: The Council discussed that they support the “home region” Council that submitted the proposal and felt that based on the analysis the Western Interior Council had done their homework and know the issue and region well. The Council noted there is little fishing by North Slope region residents in this area and thus they do not want to interfere with the local management and endorse the Western Interior Council efforts to support local resident’s subsistence opportunity through this proposal.

**Revision to Memorandum of Understanding with the State of Alaska:** Jennifer Hardin, Office of Subsistence Management, provided an overview of the current draft Memorandum of Understanding (MOU) between the Federal Subsistence Board and the State of Alaska. It establishes guidelines to coordinate management of subsistence uses of fish and wildlife resources on Federal public lands in Alaska. This document builds upon the July 18, 2012 draft MOU which incorporated recommended changes from the Regional Advisory Councils, Subsistence Resource Commissions, and Advisory Committees. The intent of this MOU is to provide a foundation to build on with the State to coordinate the management of fish and wildlife resources for subsistence uses on Federal public lands in Alaska. Jill Klein, Alaska Department of Fish and Game, Commissioners Office was on teleconference and also answered questions.

The Council reviewed the draft MOU between the Federal Subsistence Board and the State of Alaska provided in the meeting book and expressed their support for the intent to continue working together. The Council enjoys the presence of ADF&G at their meetings and would like to see that continued as well. The Council would like to see Alaska Board of Game be more participatory to the subsistence process rather than oppose subsistence protection efforts. The Council stressed the importance of regular review of the MOU so that they have the opportunity to report on if it's working or not.

The Council did feel that subsistence opportunity should be provided for across State lands as well as federal lands since most subsistence resources are migratory and discussed at length how this might be able to be addressed in the MOU. After much discussion on language that the State might consider to add the Council agreed on one recommended amendment/edit that they felt would help address that subsistence is a matter of food security and subsistence resources migrate through and are harvested on both State and Federal lands.

The Council suggested adding "State" to Section IV. 13 where it says to "ensure that local residents, Tribes and other users will have meaningful involvement in subsistence wildlife and fisheries regulatory processes that affect subsistence uses on Federal public lands" to amend that to read: on *State* and Federal public lands.

The Council also felt that food security was a great issue of concern for everyone and could be added at the end of the MOU as a final common point that both the Federal Subsistence Board and the State of Alaska could agree upon.

**Review Annual Report Reply and Identify Issues for 2016 Annual Report:**

The Council reviewed the reply from the Federal Subsistence Board from their previous annual report and Marcy Okada with Gates of the Arctic National Park & Preserve was able to provide more updates on the issue of access to Native allotments within the park. The Council was pleased to hear of the efforts the Park was making to work with local residents and find a way to provide opportunity for them to access their Native Allotments within the Park.

The Council discussed issues to include for the 2016 annual report. Topics the Council wanted to address to the Board were concerns about increased industrial shipping and cruise ship traffic in the North Slope region due to expanding ice free waters and the opening of the Northwest Passage. The Council is very concerned about potential impacts of oil spills and shipping pollution to subsistence communities in the region especially Point Hope. The Council also wanted the Board to better understand food security issues for the region and was not satisfied with the feedback they had received on that issue in their previous annual report.

**Charter Review:** The Council reviewed their Charter discussed the role and authority of the Council and, with a quorum present, voted unanimously to approve renewal of the Charter. The Council discussed they were very concerned that there was not more representation across all communities on the Council and several vacant seats that limited having full input from across the region. The Council was also concerned that circumstance such as this meeting where some members were absent which further diminished the number of the Council providing input on recommendations.

**Tongass Submerged Lands Proposed Rule:** Eva Patton, Office of Subsistence Management presented a briefing on the Tongass Submerged Lands proposed rule which is being presented to all 10 Council regions. The Council asked questions about if this might have any applicability in the North Slope Region if there were any submerged lands. Dave Yokel of BLM and Jennifer Hardin of OSM were able to clarify the unique nature of the situation in the Southeast Region. The Council voted unanimously to take no action and refer this proposal back to the affected users in the Southeast Region.

**Agency Reports:**

**ADF&G Subsistence Division ANS Overview** – At the request of the Council, Nikki Bream, Anthropologist and Arctic Region Director for the Alaska Department of Fish and Game Division of Subsistence provided the Council with a written analysis and overview of the Amounts Necessary for Subsistence (ANS) determination for the Western Arctic and Teshekpuk Caribou herds. Nikki Bream provided an overview of the ADF&G Subsistence Division analysis and range of options that was provided the Board of Game and the determination the Board made at the last meeting addressing this issue. The Council discussed their proposal that they submitted to the Board of Game of the upcoming meeting for the Arctic Region and reiterated why they felt it was important to consider separating the ANS for each herd stressing concerns that the combined ANS might result in overharvest of the smaller more vulnerable Teshekpuk herd.

**ADF&G Wildlife Reports** – At the request of the Council, Alaska Department of Fish and Game biologists provided the Council with a comprehensive overview on the status of the Western Arctic, Teshekpuk, Central Arctic, and Porcupine Caribou herds.

Ryan Klimstra, ADF&G Wildlife Biologist based in Barrow, facilitated a Power Point presentation that ADF&G Regional Manager Lincoln Perrett addressed for the Council via teleconference. Updates were provided on the most recent Western Arctic Caribou Herd aerial survey count and health indicators of the herd. The 2013 photo census recorded approximately 235,000 caribou and the most recent 2016 photo census from this summer was estimated at 201,000 caribou. This is just above the 200,000 conservative management threshold identified in the management plan for the Western Arctic Caribou Herd. The annual decline of the herd dropped from 15% to 5% over the last three years. Surveys indicated adult caribou survival was good last winter and good calf recruitment this summer. However, Lincoln Perrett cautioned that the important thing was to watch this winter for overall survival rates. The Council discussed conservation strategies if further caribou harvest reductions were needed. The Councils also reviewed an overview of Board of Game proposals such as the request submitted by ADF&G to require permitting for the harvest of caribou north of the Yukon River in order have a better assessment of harvest to use in management of the caribou herd.

Beth Lenart provided an overview of the Central Arctic Caribou Herd and stressed that the recent photo census count in 2016 indicated the herd had declined by about 50,000 animals since 2013 bringing the population down to 22,00 caribou. She discussed possible sources of mortality with the Council, noting that there had been some hard winters that affected many animals. The herd had been increasing for some time but high adult female mortality and this recent count likely warranted potential harvest to prevent further decline of the Central Arctic herd. The Board of Game will be addressing bag limits for this region at their February 2017 meeting. Beth Lenart noted she would be reaching out to the community of Nuiqsut to discuss possible management strategies since this herd is a primary importance for subsistence for that community.

Beth Lenart confirmed Council member Lee Kayotuk's observations about the Porcupine Caribou Herd. She noted that while the Porcupine Caribou herd numbers were quite healthy and doing well, the herd did range far inland and were largely not accessible to the community of Kaktovik to harvest.

Ryan Klimstra and Hillary Robinson provided a brief overview of the North Slope region Unit 26A and Unit 23 muskox herds and solicited feedback from the Council on the importance of subsistence opportunity to harvest muskox. Council members shared that in some places muskox are considered a nuisance because they are thought to drive away the caribou. However, the Council felt a small opportunity for harvest would be beneficial to communities that want it because it is a resource for good meat. Council members noted that it is important to have these harvest opportunities to continue to pass on muskox hunting knowledge because their hide is very difficult to skin and requires the proper tools and techniques.

**Arctic National Wildlife Refuge** – Vince Mathews, Subsistence Coordinator for Arctic, Kanuti and Yukon Flats National Wildlife Refuges, provided the Council with a brief written summary including pictures of wildlife updates and programs that the refuge had been involved in. Highlights of interest to the Council included moose, caribou, and sheep survey updates as well as the Youth Ambassador Program in Kaktovik where local students help educated visitors about

polar bears and polar bear safety. Lee Kayotuk of Kaktovik asked for more information on the status of the moose population in Unit 26C and if the closure could be lifted to allow even the harvest of one or two moose for the community. The Council expressed interest in receiving more information on the Porcupine Caribou herd and the work of the International Porcupine Caribou Board.

**Arctic Council and Conservation of Arctic Flora and Fauna** - Gilbert Castellanos, International Affairs Specialist, USFWS, Anchorage, provided an overview of the work of the Conservation of Arctic Flora and Fauna (CAFF) working group, the Arctic Council and the U.S. Chairmanship of the Arctic Council. The Arctic Council, made up of Ministers from the eight Arctic nations which includes United States, Sweden, Finland, Iceland, Canada, Russia, Norway, Denmark, Greenland, plus 27 observer Country representatives. Also, permanent participants to the Council include representatives of Arctic indigenous people around the circumpolar Arctic. One of those groups representing the Inupiat people is the Inuit Circumpolar Council, or ICC. The Arctic Council meets every two years to discuss Arctic issues and common goals that they can all cooperate on to achieve collaboratively across the entire Arctic region. An important focus of the CAFF has been key subsistence species that span across countries such as caribou, walrus, polar bear, migratory birds, salmon and arctic char and how to manage these animals and ecosystems sustainably across the circumpolar arctic with input from the local and indigenous people.

With the U.S. Chairmanship of the CAFF working group there is increased opportunity for involvement and input from local residents of Alaska. He encouraged the Council and subsistence communities to use this as an opportunity to have voice heard and share concerns and priorities. The Council discussed at length changes in the land and water they have been seeing for a long time and difficulties meeting subsistence needs – even fresh water is now becoming a major issue due to permafrost thaw and loss of freshwater ice at sea. The Council discussed at length with Mr. Castellano the research that is currently being conducted and their own concerns and observations about the environment and food security across the North Slope region that they would like to be prioritized. Mr. Castellano confirmed the importance of food security as an issue of primary importance and the value of traditional knowledge which the Arctic Council concurred should be integrated into the assessment and management of Arctic biodiversity. The Inuit Circumpolar Council Director, Jimmy Stotts, and Science Advisor, Carolina Behe, are the Alaska representatives to the Arctic Council and have been working on a community based food security project that was presented to the Council during the joint session of the All-Council meeting in March 2016.

In addition to serving as the United States Head of Delegation to the Conservation of Arctic Flora and Fauna Working Group of the Arctic Council, Mr. Castellano is also the staff lead for the Regional Director on the International Porcupine Caribou Board. He noted he would be happy to provide the Council with more updates of the work of the International Porcupine Caribou Board after the next upcoming meeting of the Board.

**Bureau of Land Management NPR-A:** Dr. Dave Yokel, Research Biologist for the BLM Arctic Field Office, addressed the Council that he is retiring and this would be his last meeting after working in the region for over 23 years. He noted he and former Chair Harry Brower, Jr.

had both served the North Slope Subsistence Regional Advisory Council since 1992. Dave Yokel shared that it had been a wonderful journey and he learned a lot over the years and wished everyone well. Council members shared memories with Dave, thanked him for his service and wished him all the best.

**Future Meeting Dates:**

The Council reconfirmed February 9 and 10, 2017 for the next winter meeting.

The Council selected August, 24 and 25, 2017 in Wainwright for the next fall meeting. The Council stressed the importance of meeting in Wainwright to during the upcoming wildlife cycle to address caribou proposals critical to the community and facilitate meaningful engagement in the Federal Subsistence Management process.

The Council shared closing comments and adjourned at approximately 6:30 p.m.

I certify to the best of my knowledge the forgoing minutes are accurate and complete.

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Eva Patton, Designated Federal Officer  
USFWS Office of Subsistence Management

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Rosemary Ahtuanguak, Acting Chair  
North Slope Subsistence Regional Advisory Council

These minutes will be formally considered by the North Slope Subsistence Regional Advisory Council at its winter 2017 public meeting. Any corrections or notations will be incorporated at that meeting.



## WILDLIFE CLOSURE REVIEW BRIEFING

As called for in the Closure Policy, the Office of Subsistence Management is reviewing existing wildlife closures to determine whether the original justifications for closure continue to apply. These reviews are being conducted in accordance with guidance found in the Federal Subsistence Board's Policy on Closures to Hunting, Trapping and Fishing on Federal Public Lands and Waters in Alaska, which was adopted in 2007. According to the policy, existing closures will be reviewed at least every three years, and are typically completed on a three-year rotational schedule. A summary of the current closure reviews which are applicable to your Regional Advisory Council (RAC) are provided.

Title VIII of the Alaska National Interest Lands Conservation Act (ANILCA) establishes a priority for the taking of fish and wildlife on Federal public lands and waters for non-wasteful subsistence uses over the taking of fish and wildlife for other purposes (ANILCA Section 804). The Federal Subsistence Board is authorized to restrict or close the taking of fish and wildlife by subsistence and non-subsistence users on Federal public lands and waters (ANILCA Section 804 and 815(3)) when necessary for: 1) the conservation of healthy populations of fish and wildlife; or 2) to continue subsistence users of such populations. In addition, the Board may also close Federal public lands and waters to any taking of fish and wildlife for reasons of public safety, administration, or to assure the continued viability of such population (ANILCA Section 816(b)).

Distribution and abundance of fish and wildlife populations are known to fluctuate based upon a variety of factors such as weather patterns, management actions, habitat changes, predation, harvest activities, and disease. Subsistence use patterns are also known to change over time in response to many factors including resource abundance, human population changes, among others. It is for these reasons that the Board decided in 2007 to conduct reviews every 3 years or earlier if new information becomes available that would potentially allow the closure to be lifted.

A Wildlife Closure Review contains a brief history of why a closure was implemented, along with a summary of the current resource condition and the OSM recommendation as to whether the closure should be continued or lifted.

Councils are asked to consider the OSM recommendation and share their views on the issue. Input from the Councils is critical to the development of regulatory proposals needed to address adjustments to regulations. After the Council reviews the closure review, they have three options, which should be in the form of an **action item**. They can recommend to:

- maintain the status quo
- modify or eliminate the closure
- other recommendation

If the Council recommends to modify or rescind, they should submit a proposal (**a separate action item**) at this time. Councils may choose to work with OSM staff to develop a proposal; however, proposals addressing these issues can be submitted by other individuals or organizations as well.

Regardless of the Council recommendation, closures remain in effect until changed by the Federal Subsistence Board, and any regulatory proposals that may result from this review process will be considered through the normal regulatory cycle.

**FEDERAL WILDLIFE CLOSURE REVIEW  
WCR15-25**

**Closure Location:** Unit 26C—Muskox

**Current Federal Regulation**

*Unit 26C – Muskox*

*1 bull by Federal registration permit only. The number of permits that may be issued only to the residents of the village of Kaktovik will not exceed three percent (3%) of the number of musk oxen counted in Unit 26C during a pre-calving census. Public lands are closed to the taking of musk ox, except by rural Alaska residents of the village of Kaktovik hunting under these regulations.* July 15 – Mar. 31

**Closure Dates:** Year-round

**Current State Regulation**

*Unit 26C* No open season

**Regulatory Year Initiated:** 1992

**Regulatory History**

From regulatory years (RY) 1982/1983 until 1990/1991, the State of Alaska managed the muskox hunt in Unit 26C, increasing the number of permits from 5 to 10 bulls by RY 1988/1989. In RY 1991/1992, the Federal government assumed management of muskoxen on Federal public lands in Unit 26C (Arctic National Wildlife Refuge). In 1992 the Federal Subsistence Board (Board) adopted Proposal 92 with modification, which closed Federal subsistence hunting of muskoxen in those portions of Unit 26B in the Arctic National Wildlife Refuge, restricted the number of permits issued to 10 bulls for Unit 26C, and closed Federal public lands to the harvest of muskoxen except by rural residents of the village of Kaktovik. Unit 26B was closed to harvest under Federal regulations because very few muskoxen occupied Federal lands in the unit at that time.

The Board increased the number of permits to 15 bulls in RY 1996/1997 (P96-67), and permitted the harvest of cows in RY 1998/1999 (3 cows, 12 bulls) (P98-109) (Table 1). Over time, the Board increased the season in Unit 26C from 2 months (October and March) (P92-92) to 8.5 months, July 15 to March 31(P96-67).

In 2002, the Board approved Special Action WSA02-10 which reduced the harvest quota from 15 to 2 bulls and shortened the season July 15 – Mar. 31 to Sept. 15 – Mar. 31 primarily because of the low population.

In 2003, the Board adopted Proposal WP03-53 which established a bull only harvest by Federal registration permit, with the number of permits based on three percent of the number of muskox counted during spring pre-calving muskoxen surveys in Unit 26C.

In 2012, Federal public lands remained closed to hunting muskoxen due to conservation concerns (WCR12-25), except by residents of Kaktovik per current Federal regulations. Muskoxen populations in Unit 26C were below the 3% threshold level required to issue Federal registration permits from 2003 to 2007, and 2009-2014, with only one permit being issued in 2008. There has not been an open season for muskox in Unit 26C under State regulations since RY 1992/1993.

**Closure last reviewed:** 2012 – WCR12-25

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

The muskox population was below management objectives and additional harvest would be incompatible with the conservation of a healthy population in Unit 26C. This is consistent with Section 815(3) of ANILCA, which states:

*Nothing in this title shall be construed as – (3) authorizing a restriction on the taking of fish and wildlife for nonsubsistence uses on public lands (other than national parks and monuments) unless necessary for the conservation of healthy populations of fish and wildlife, for the reasons set forth in section 816, to continue subsistence uses of such populations, or pursuant to other applicable law...*

**Council Recommendation for Original Closure:**

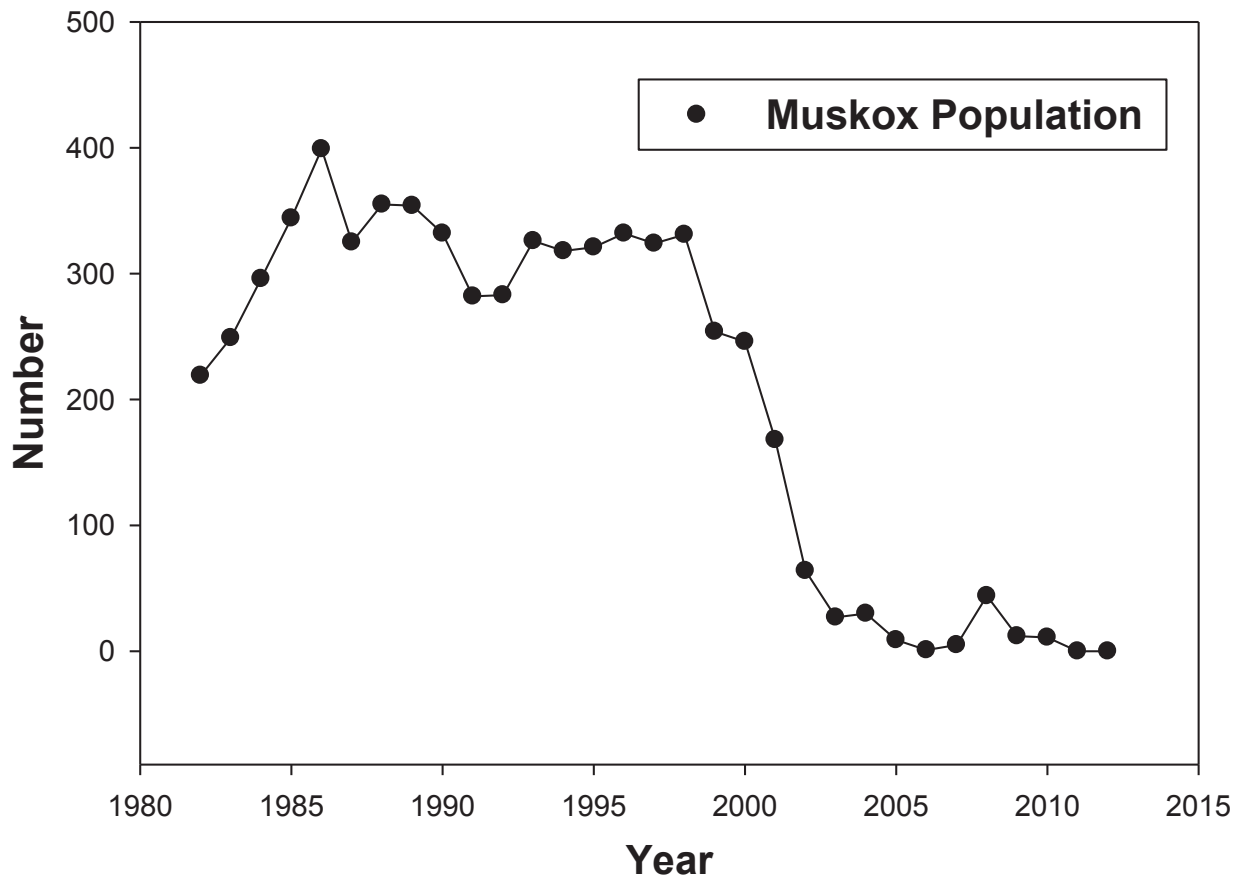
The closure was established prior to the existence of the Councils.

**State Recommendation for Original Closure:**

The State had no recommendation on the original closure. The proposed community harvest limit of 10 bulls provided harvest opportunities for the rural residents of Kaktovik in excess of the State's quota of seven. State biologists recognized this as an allocation, not a biological issue, since the difference between the harvest of seven and ten animals would not significantly impact the health of the population. However, the State had no position on the closure to muskox hunting in Unit 26C as stated in modified Proposal 92 (FSB 1992).

**Biological Background**

Muskoxen were reintroduced to the Arctic National Wildlife Refuge coastal plain in 1969 and 1970. The reintroduced population grew rapidly, expanding its range east into Yukon, Canada and west into Unit 26B after 1986. The Northeast Alaska-Yukon muskox population ranges from eastern Unit 26A (NPRA) in northern Alaska to the Babbage River in northern Yukon. Numbers of muskoxen in Unit 26C remained relatively stable (average = 331) between 1987 and 1998, but declined sharply in the early 2000s (**Figure 1**). Continued declines calf survival and recruitment and increasing adult mortality reduced the population to 29 muskoxen in 2003. In April 2008, 44 muskoxen were counted in the pre-calving census but most of these animals came from Canada the previous summer, and returned to the Yukon in late October (Reynolds 2008). From 2009 to 2015, the number of muskox in Unit 26C ranged from 0-44 individuals (**Figure 1**) (Reynolds 2011, Lenart 2013, Wald 2015, pers. comm.). Currently, there are no mixed groups of muskoxen living year-round in Unit 26C (Arctic NWR) (Reynolds, 2015 pers. comm., Wald 2015, pers. comm.).



**Figure 1.** Number of muskoxen in Arctic National Wildlife Refuge, Unit 26C, observed during annual pre-calving censuses, 1982 – 2011 (Reynolds 2011, Lenart 2013, Wald 2015, pers. comm.).

West of the Arctic National Wildlife Refuge, in Unit 26B, muskoxen increased between mid 1990s and 2003 to about 302 individuals (Lenart 2007, 2009, 2011, 2013; Reynolds 2011). Population surveys

conducted over the total range between 2006 and 2011 suggest that the population was relatively stable at about 300 animals, with about 200 muskoxen in Unit 26B, west of the Arctic National Wildlife Refuge, and 100 muskoxen in Yukon, Canada east of the Arctic National Wildlife Refuge (Reynolds 2011, Lenart 2013). Range-wide surveys are tentatively scheduled for April 2016.

The State of Alaska closed muskox hunts in Unit 26B west of the Arctic National Wildlife Refuge in 2005/2006 (Lenart 2011). State management objectives revised in 2013 were to increase the muskox population to 300 in eastern 26A, 26B, and 26C by reducing brown bear predation on muskoxen in Unit 26B (Lenart 2013). From 2007–2011, ADF&G determined that 62% of the adult mortality in Unit 26B was the result of brown bear predation (Lenart 2013). The Alaska Board of Game approved a predator control program to reduce brown bear numbers in Unit 26B at its January 2012 meeting.

There has been no State season for muskox in Unit 26C, due to low population numbers, since RY 1991/1992. When the population reaches the minimum of 300 muskoxen and the population is considered to be growing, the State plans to allow for a harvest rate of 1-3% per-year of the spring precalving population in eastern Unit 26A and Unit 26B. The goal is to increase the muskoxen population to the historical high of 650 muskoxen across eastern Unit 26A, Unit 26B and Unit 26C (Lenart 2013).

The decline of muskoxen was likely caused by low calf survival in some years, increased adult mortality, and changes in distribution of the population. Weather, predation, quality and quantity of winter forage, and exposure to parasites and disease are all factors affecting calf recruitment, muskox survival and population distribution (Lenart 2013).

### Harvest History

Legal hunting of muskoxen began in 1982. The total annual harvest of muskoxed generally increased between 1982/1983 to 1996/1997 as the number of permits increased. Total annual harvest subsequently declined until 2002/2003, when no permits were issued (**Table 1**) (FWS 2015, Reynolds 2011).

**Table 1.** History of muskox harvest in Unit 26C by agency (FWS 2015).

| Regulatory Year | Managing Agency | Permits Issued | # Bulls Harvested | # Cows Harvested | Total Harvested |
|-----------------|-----------------|----------------|-------------------|------------------|-----------------|
| 1982/83         | ADF&G           | 5              | 4                 |                  | 4               |
| 1983/84         | ADF&G           | 5              | 5                 |                  | 5               |
| 1984/85         | ADF&G           | 5              | 4                 |                  | 4               |
| 1985/86         | ADF&G           | 5              | 3                 | 1                | 4               |
| 1986/87         | ADF&G           | 5              | 5                 | 0                | 5               |
| 1987/88         | ADF&G           | 5              | 5                 | 1                | 6               |
| 1988/89         | ADF&G           | 10             | 6                 | 3                | 9               |
| 1989/90         | ADF&G           | 10             | 10                |                  | 10              |
| 1990/91         | ADF&G           | 11             | 8                 |                  | 8               |
| 1991/92         | ADF&G           | 11             | 5                 |                  | 5               |
| 1992/93         | USFWS           | 10             | 10                |                  | 10              |
| 1993/94         | USFWS           | 10             | 8                 |                  | 8               |
| 1994/95         | USFWS           | 10             | 8                 |                  | 8               |

|                      |       |        |    |   |    |
|----------------------|-------|--------|----|---|----|
| 1995/96              | USFWS | 10     | 8  | 1 | 9  |
| 1996/97              | USFWS | 15     | 12 | 3 | 15 |
| 1997/98              | USFWS | 15     | 9  | 1 | 10 |
| 1998/99              | USFWS | 13B/2C | 8  | 0 | 8  |
| 1999/2000            | USFWS | 12B/3C | 8  | 0 | 8  |
| 2000/01              | USFWS | 12B/3C | 5  | 1 | 6  |
| 2001/02              | USFWS | 12B/3C | 2  | 0 | 2  |
| 2002/03              | USFWS | 2      | 0  | 0 | 0  |
| 2003/04 <sup>a</sup> | USFWS | –      |    |   |    |
| 2004/05 <sup>a</sup> | USFWS | –      |    |   |    |
| 2005/06 <sup>a</sup> | USFWS | –      |    |   |    |
| 2006/07 <sup>a</sup> | USFWS | –      |    |   |    |
| 2007/08 <sup>a</sup> | USFWS | –      |    |   |    |
| 2008/09              | USFWS | 1      | 0  | 0 | 0  |
| 2009/10 <sup>a</sup> | USFWS | –      |    |   |    |
| 2010/11 <sup>a</sup> | USFWS | –      |    |   |    |
| 2011/12 <sup>a</sup> | USFWS | –      |    |   |    |
| 2012/13 <sup>a</sup> | USFWS | –      |    |   |    |
| 2013/14 <sup>a</sup> | USFWS | –      |    |   |    |
| 2014/15 <sup>a</sup> | USFWS | –      |    |   |    |

<sup>a</sup> No permits were issued because the population of muskox from the pre-calving surveys was below the threshold of 3%.

Federal subsistence regulations state that the number of permits issued to residents of Kaktovik for muskox will not exceed 3% of the numbers of animals observed in pre-calving census of Unit 26C. At least 36 animals need to be observed during pre-calving surveys to have 1 permit issued. In Unit 26C, no permits to hunt muskoxen were issued by the Arctic National Wildlife Refuge between 2002 through 2007 and 2009 through 2015. As a result of the April 2008 census count of 44 muskoxen in Unit 26C, and in consultation with the Muskox Working Group, the Arctic National Wildlife Refuge issued a single Federal permit for one bull muskox to be taken in Unit 26C for the RY 2008/2009 season (July 15 – Mar. 31), but no harvest occurred (Reynolds 2008). No permits were issued to Kaktovik residents from 2011 through 2015 due to very low population counts during the spring pre-calving surveys (Reynolds 2011, Reynolds 2015, pers. comm.).

**OSM Preliminary Recommendation:**

- maintain status quo**
- initiate proposal to modify or eliminate the closure**
- other recommendation**

**Justification**

There were no permits issued to harvest muskox in Unit 26C from 2003–2007 and 2009–2014 because the numbers of muskoxen in Unit 26C were below the 3% threshold level required to issue permits. Until the population increases to a more sustainable level, Federal public lands should remain closed, except for permit hunting by Federally qualified subsistence users from Kaktovik per current Federal regulations. The status quo is necessary to continue subsistence uses (ANILCA Section 815(3)) and is consistent with sound management principles and the conservation of healthy wildlife populations while providing a

priority for subsistence uses. The closure to muskox harvest by non-Federally qualified users on Federal public lands in the affected area will be reassessed in three years, per the Federal Subsistence Board Closure Policy (FSB 2007), or sooner if additional survey data suggest the closure should be lifted.

### **Literature Cited**

Federal Subsistence Board (FSB) 1992. Transcripts of FSB proceedings, April 8, 1992. Office of Subsistence Management, FWS. Anchorage, AK.

Federal Subsistence Board (FSB) 2007. FSB Closure Policy, August 29, 2007. Office of Subsistence Management, FWS. Anchorage, AK.

FWS. 2015. Federal Subsistence Management harvest database. Accessed: August 10, 2015.

Lenart, E.A. 2007. Units 26B and 26C muskox. Pages 49-69 *in* P. Harper, editor. Muskox management report of survey-inventory activities 1 July 2004-30 June 2006. Alaska Department of Fish and Game. Project 16.0. Juneau, AK.

Lenart, E.A. 2011. Units 26B and 26C muskox. Pages 63-84 *in* P. Harper, editor. Muskox management report of survey and inventory activities 1 July 2008 – 30 June 2010. Alaska Department of Fish and Game. Project 16.0. Juneau, AK.

Lenart, E.A. 2013. Units 26B and 26C muskox. Pages 75-97 *in* P. Harper, editor. Muskox management report of survey and inventory activities 1 July 2010 – 30 June 2012. Alaska Department of Fish and Game, Species Management Report ADF&G/DWC/SMR-2013-2, Juneau, AK.

Reynolds, P.E. 2008. Muskoxen in the Arctic National Wildlife Refuge Game Management Unit 26C, 2007-2008. Arctic NWR, Fairbanks, AK.

Reynolds, P.E. 2011. 2011 precalving census of muskoxen in Arctic National Wildlife Refuge 26C and adjacent regions. Unpublished report. Arctic NWR, Fairbanks, AK.

Reynolds, P. 2015. Wildlife biologist. Personal communication: email. Fairbanks, AK.

Wald, E. 2015. Wildlife biologist. Personal communication: phone. Arctic National Wildlife Refuge, Fairbanks, AK.



U.S. Fish and Wildlife Service  
Bureau of Land Management  
National Park Service  
Bureau of Indian Affairs

## Federal Subsistence Board Informational Flyer



Forest Service

**Contact:** Theo Matuskowitz  
(907) 786-3867 or (800) 478-1456  
theo\_matuskowitz@fws.gov

### How to Submit a Proposal to Change Federal Subsistence Regulations

Alaska residents and subsistence users are an integral part of the Federal regulatory process. Any person or group can submit proposals to change Federal subsistence regulations, comment on proposals, or testify at meetings. By becoming involved in the process, subsistence users assist with effective management of subsistence activities and ensure consideration of traditional and local knowledge in subsistence management decisions. Subsistence users also provide valuable wildlife harvest information.

A call for proposals to change Federal subsistence fishing regulations is issued in January of even-numbered years and odd-numbered years for wildlife. The period during which proposals are accepted is no less than 30 calendar days. Proposals must be submitted in writing within this time frame.

You may propose changes to Federal subsistence season dates, harvest limits, methods and means of harvest, and customary and traditional use determinations.

#### **What your proposal should contain:**

*There is no form to submit your proposal to change Federal subsistence regulations.* Include the following information in your proposal submission (you may submit as many as you like):

- Your name and contact information (address, phone, fax, or E-mail address)
- Your organization (if applicable).
- What regulations you wish to change. Include management unit number and species. Quote the current regulation if known. If you are proposing a new regulation, please state, “new regulation.”
- Write the regulation the way you would like to see it written in the regulations.
- Explain why this regulation change should be made.
- You should provide any additional information that you believe will help the Federal Subsistence Board (Board) in evaluating the proposed change.



**You may submit your proposals by:**

1. By mail or hand delivery to:  
Federal Subsistence Board  
Office of Subsistence Management  
Attn: Theo Matuskowitz  
1011 E. Tudor Rd., MS-121  
Anchorage, AK 99503
2. At any Federal Subsistence Regional Advisory Council meeting (A schedule will be published in the Federal Register and be announced statewide, bi-annually, prior to the meeting cycles)
3. On the Web at <http://www.regulations.gov>

Submit a separate proposal for each proposed change; however, do not submit the same proposal by different accepted methods listed above. To cite which regulation(s) you want to change, you may reference [50 CFR 100](#) or [36 CFR 242](#) or the proposed regulations published in the Federal Register: <http://www.gpoaccess.gov/fr/index.html>. All proposals and comments, including personal information, are posted on the Web at <http://www.regulations.gov>.

For the proposal processing timeline and additional information contact the Office of Subsistence Management at (800) 478-1456/ (907) 786-3888 or go to <http://www.doi.gov/subsistence/proposal/submit.cfm>.

**How a proposal to change Federal subsistence regulations is processed:**

1. Once a proposal to change Federal subsistence regulations is received by the Board, the U.S. Fish and Wildlife Service, Office of Subsistence Management (OSM) validates the proposal, assigns a proposal number and lead analyst.
2. The proposals are compiled into a book for statewide distribution and posted online at the Program website. The proposals are also sent out the applicable Councils and the Alaska Department of Fish and Game (ADF&G) and the Interagency Staff Committee (ISC) for review. The period during which comments are accepted is no less than 45 calendar days. Comments must be submitted within this time frame.
3. The lead analyst works with appropriate agencies and proponents to develop an analysis on the proposal.
4. The analysis is sent to the Councils, ADF&G and the ISC for comments and recommendations to the Board. The public is welcome and encouraged to provide comments directly to the Councils and the Board at their meetings. The final analysis contains all of the comments and recommendations received by interested/affected parties. This packet of information is then presented to the Board for action.
5. The decision to adopt, adopt with modification, defer or reject the proposal is then made by the Board. The public is provided the opportunity to provide comment directly to the Board prior to the Board's final decision.
6. The final rule is published in the Federal Register and a public regulations booklet is created and distributed statewide and on the Program's website.

**A step-by-step guide to submitting your proposal on [www.regulations.gov](http://www.regulations.gov):**

1. Connect to [www.regulations.gov](http://www.regulations.gov) – there is no password or username required.
2. In the white space provided in the large blue box, type in the document number listed in the news release or available on the program webpage, (for example: FWS-R7-SM2014-0062) and select the light blue “Search” button to the right.

3. Search results will populate and may have more than one result. Make sure the Proposed Rule you select is by the U.S. Fish and Wildlife Service (FWS) and **not** by the U.S. Forest Service (FS).
4. Select the proposed rule and in the upper right select the blue box that says, “Comment Now!”
5. Enter your comments in the “Comment” box.
6. Upload your files by selecting “Choose files” (this is optional).
7. Enter your first and last name in the spaces provided.
8. Select the appropriate checkbox stating whether or not you are providing the information directly or submitting on behalf of a third party.
9. Fill out the contact information in the drop down section as requested.
10. Select, “Continue.” You will be given an opportunity to review your submission.
11. If everything appears correct, click the box at the bottom that states, “I read and understand the statement above,” and select the box, “Submit Comment.” A receipt will be provided to you. Keep this as proof of submission.
12. If everything does not appear as you would like it to, select, “Edit” to make any necessary changes and then go through the previous step again to “Submit Comment.”

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**Missing out on the latest Federal subsistence issues?** If you’d like to receive emails and notifications on the Federal Subsistence Management Program you may subscribe for regular updates by emailing [fws-fsb-subsistence-request@lists.fws.gov](mailto:fws-fsb-subsistence-request@lists.fws.gov). Additional information on the Federal Subsistence Management Program may be found on the web at [www.doi.gov/subsistence/index.cfm](http://www.doi.gov/subsistence/index.cfm) or by visiting [www.facebook.com/subsistencealaska](http://www.facebook.com/subsistencealaska).

## North Slope Subsistence Regional Advisory Council

c/o Office of Subsistence Management  
1011 East Tudor Road, MS 121  
Anchorage, Alaska 99503

RAC NS17011.EP

Mr. Anthony Christianson, Chair  
Federal Subsistence Board  
c/o Office of Subsistence Management  
1011 E. Tudor Road, MS 121  
Anchorage, Alaska 99503

Dear Chairman Christianson:

The North Slope Subsistence Regional Advisory Council (Council) submits this FY2016 annual report to the Federal Subsistence Board (Board) under the provisions of Section 805(a)(3)(D) of the Alaska National Interest Lands Conservation Act (ANILCA). At its public meeting in Barrow on October 31-November 1, 2016, the Council identified concerns and recommendations for this report, *[approving it at its winter 2017 public meeting in Barrow.]* The Council wishes to share information and raise a number of concerns dealing with implementation of Title VIII of ANILCA and the continuation of subsistence uses in the North Slope Region.

### **1. Food Security, Preventing Deflection of Caribou and User Conflicts**

The Council addressed pressing concerns in its annual report to the Board last year for food security for communities in the North Slope Region, user conflicts, and potential impacts from the deflection of caribou. The Council appreciates the Board's response in the reply letter but feels perhaps the issue was underestimated. The Council would like to further address this issue in regards to the current situation with the decline of the Western Arctic and Teshekpuk Caribou Herds. Subsistence is not only a food security issue but also the core of the social fabric of communities in the region. Food security is truly a matter of people going hungry. Council members relayed children in Anaktuvuk Pass coming to school hungry because they had no access to caribou. Communities have been extremely stressed throughout the region where the caribou herd did not come through, struggling to feed their families, provide for their elders, teach the younger generation the awareness and skills to hunt in a positive way. Sharing among communities became strained too. This fall the caribou did finally come through Anaktuvuk Pass and caribou were harvested there for the first time in a long while. When the caribou come, the traditional loving lifestyle of the culture starts to come back and people felt happy. The subsistence way of life, eating traditional foods, and providing for family and community promotes goodwill and a sense of wellbeing. The social fabric of communities came

alive again. Council members relayed being able to trade with family seal oil for caribou they were able to harvest this year.

The Council feels the issue of food security and subsistence priority in areas where there are user conflicts needs to be taken into more serious consideration. The Council has heard from residents of Unit 23 that the closure to non-Federally qualified users made a positive change to their hunt experience in their traditional hunting areas and is still looking to similar possible options to help support the people of Anaktuvuk Pass to meet their subsistence needs. The Council recognizes the challenge of managing to avoid deflection of the herd but feels that it is a central issue in supporting a real subsistence opportunity and subsistence priority. Because management of the caribou herds crosses multiple land ownership with a mix of State and Federal lands in particular it is a challenge to find a unified way forward. The Council feels research that will help illuminate how disturbance may deflect the caribou herds and why the migration has shifted away from Anaktuvuk Pass would be of great assistance for informed management for the region. The Council would like to see further efforts for this type of research to be conducted by the Federal land management agencies and is hopeful for collaboration with State biologists as well.

Given that caribou specifically is the primary subsistence food that feeds this community, it is imperative to ensure subsistence priority is met. The Council seeks avenues through the Federal Subsistence Management Program to ensure that Federal subsistence priority for caribou is met and this also entails ensuring that activities on non-Federal public lands do not deflect caribou from their migratory path through Anaktuvuk Pass. This is a very real matter of food security and the Council seeks the assistance of the Federal Subsistence Program to generate solutions to alleviate the situation. The Council will appreciate the support of the Federal Subsistence Management Program staff in exploring possible pathways through both the Federal and State process in the upcoming regulatory cycle.

## **2. Increased shipping traffic in the Chukchi Sea and potential impacts to subsistence**

Council member Steve Oomituk of Point Hope relayed concerns for the opening of the Northwest Passage and the potential for impacts to subsistence from increased shipping traffic that is being experienced by coastal communities. The Council realizes the marine waters are beyond the jurisdiction of the Federal Subsistence Board but seeks awareness about the interaction of all subsistence activities and the relationship between marine subsistence foods and those managed on Federal lands and waters. The Council also seeks the assistance of the Federal Subsistence Board in relaying these issues of concern to the relevant Federal agencies and departments.

For coastal communities the ocean is our garden. Subsistence foods of all kinds are provided to us with the ocean currents. When caribou are in low numbers or do not come through, then the ocean provides; the fish, the seal, walrus, whales, and the polar bear. Point Hope is located in area where the currents come through and has provided for the community there in that place for

thousands of years. It is the oldest continuously inhabited village in North America. The ocean is so vital to us, provides for us. It is our food supply and our identity as a people. It is a short migration time when the leads are open in the summer and all the animals migrate north to their feeding grounds and calving grounds. The animals and our subsistence way of life is tied to both the land and the ocean. Point Hope and other communities have been experiencing increasing ship traffic and are very concerned about impacts to the ocean environment, the marine animals, and our subsistence way of life. The Council would like assistance in relaying these concerns to the appropriate agency and support in seeking avenues for protections from shipping pollutants being dumped at sea or near coastal communities and importantly emergency response system in place to respond in the event of an accident or major spill.

Thank you for the opportunity for this Council to assist the Federal Subsistence Management Program to meet its charge of protecting subsistence resources and uses of these resources on Federal Public lands and waters. We look forward to continuing discussions about the issues and concerns of subsistence users of the North Slope Region. If you have any questions regarding this correspondence, please contact Eva Patton, Subsistence Council Coordinator, with the Office of Subsistence Management at [eva\\_patton@fws.gov](mailto:eva_patton@fws.gov), or 1-800-478-1456 or (907) 786-3358.

Sincerely,

Rosemary Ahtuangeruk  
Vice Chair (Acting Chair)

cc: North Slope Subsistence Regional Advisory Council  
Federal Subsistence Board  
Eugene R. Peltola, Jr., Assistant Regional Director, Office of Subsistence Management  
Thomas Doolittle, Deputy Assistant Regional Director  
Office of Subsistence Management  
Carl Johnson, Council Coordination Division Chief, Office of Subsistence Management  
Eva Patton, Subsistence Council Coordinator, Office of Subsistence Management  
Interagency Staff Committee  
Administrative Record



National Park Service  
U.S. Department of the Interior

NPS Alaska Regional Office  
240 W. 5<sup>th</sup> Avenue  
Anchorage, AK 99510  
(907) 644-3512 phone  
[www.nps.gov/alaska](http://www.nps.gov/alaska)

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## National Park Service News Release

Release Date: January 12, 2017

Contact: John Quinley, (907) 644-3512

### NPS Finalizes Subsistence & Wildlife Collection Regulations

The National Park Service today published final regulations in the [Federal Register](#) which allow federal subsistence users in Alaska to collect and use non-edible animal parts and plants for the making and selling of handicrafts.

Regulations had not allowed people to collect plants for sale or trade, or to collect and use animal parts such as antlers that had been naturally shed or that came from naturally occurring deaths. The new regulations make those practices legal for NPS qualified subsistence users under most circumstances. The proposal for the regulation came in response to requests by several Subsistence Resource Commissions, groups formed under the Alaska National Interest Lands Conservation Act (ANILCA), to help guide subsistence management in national parks.

The rule will allow NPS-qualified local rural residents to collect and use non-edible animal parts and plant materials for the creation and subsequent disposition (use, barter, or sale) of handicrafts in accordance with ANILCA.

The regulations published today also include two restrictions not specifically related to subsistence collections. The rule limits the types of bait that may be used for taking bears under Federal Subsistence Regulations to native fish or wildlife remains that exist from natural mortality or remains not required to be salvaged from a lawful harvest. This would eliminate items such as dog food, grease, bread, marshmallows, etc. which are currently allowed and commonly used.

Based on public comment, the proposed rule was modified to allow the superintendent of Wrangell-St. Elias National Park and Preserve to issue a permit to allow use of human-produced foods upon a determination that such use is compatible with park purposes and values and the applicant does not have reasonable access to natural materials that could be used as bait. The exception for Wrangell-St. Elias was based on documented history of bear baiting

The second provision clarifies that collecting of live wildlife is not an authorized hunting or trapping practice and therefore not generally allowed. This clarification was necessary based on requests from the public to collect falcon chicks in national preserves (where sport hunting and trapping are legal).



National Park Service Update  
Gates of the Arctic National Park and Preserve  
North Slope Regional Advisory Council Meeting  
October 31 – November 1, 2016

Compiled by Marcy Okada, Subsistence Program Manager, Gates of the Arctic National Park and Preserve, (907) 455-0639, [marcy\\_okada@nps.gov](mailto:marcy_okada@nps.gov)

### **Caribou**

Data from GPS collared caribou revealed that caribou from the Western Arctic Herd (WAH) and Teshekpuk Herds (TCH) were delayed during their autumn migrations on average 30 days by the Red Dog Mine Road. Individuals from both herds encounter the road primarily during autumn migration. NPS and Alaska Department of Fish and Game biologists captured and GPS collared adult female caribou from both herds (TCH: 2004-2012; WAH 2009-2012). Delayed caribou sped up after eventually crossing the road, perhaps to “make up” ground they lost while they were delayed. Results from this study suggest, however, that even a single road can alter movement behavior for some individuals.

Information from this study can be found in:

Wilson, R.R., L.S. Parrett, K. Joly, and J.R. Dau. 2016. Effects of roads on individual caribou movements during migration. *Biological Conservation* 195:2-8.  
doi:10.1016/j.biocon.2015.12.035

For more information, contact Kyle Joly, [kyle\\_joly@nps.gov](mailto:kyle_joly@nps.gov)

### **Bears**

In 2015, NPS and USGS deployed more GPS collars on grizzly bears along the proposed corridor to the Ambler Mining District. The fieldwork component of this project is winding down. The collars will drop off in July 2017 and data analyses will begin. We are collecting information on the movements, denning characteristics, diets and health of these animals prior to future development occurring in this region.

For more information, contact Kyle Joly, [kyle\\_joly@nps.gov](mailto:kyle_joly@nps.gov)

### **Dall's Sheep**

The NPS surveyed the Anaktuvuk and Itkillik areas of northeastern Gates of the Arctic in July 2016. Survey results indicate that total and adult sheep remain low but relatively stable in the Itkillik area but numbers were markedly lower in the Anaktuvuk area in 2016 compared with 2015. This follows the big decline observed in these areas in 2013 and 2014. Surveys were not conducted in 2016 in southern Gates but results from the 2015 survey across the entire park and preserve indicated there were 25% fewer sheep than in 2010, and this decline was more pronounced in the north than in the south. The NPS is considering some ecological studies of sheep and their habitat in northeastern Gates of the Arctic, and will be collaborating with the



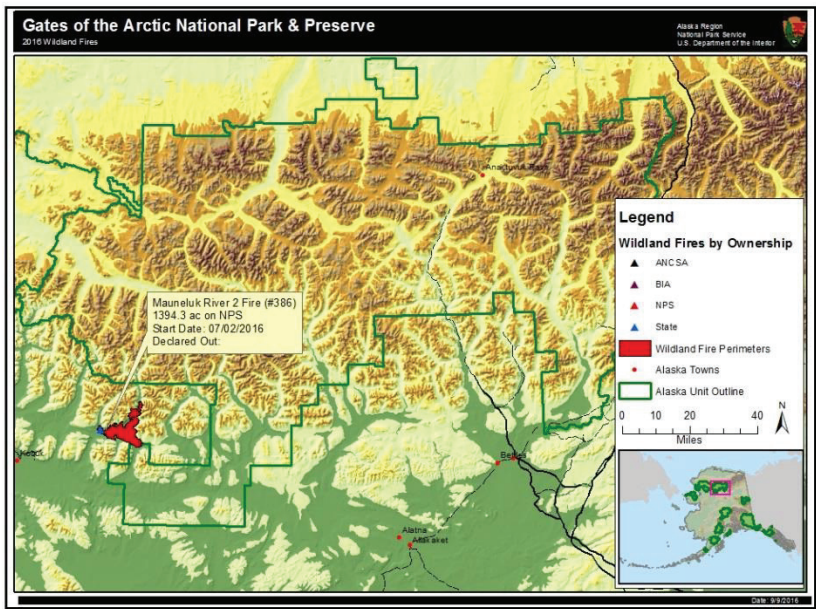
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October 31 – November 1, 2016

Arctic Refuge, BLM, the Alaska Department of Fish and Game and local communities. NPS staff will also be working with hunters in all resident zone communities of Gates of the Arctic for harvest reporting. The NPS would like to know whether the North Slope RAC has any specific biological questions they would like to see addressed?

For more information, contact Kumi Rattenbury, 907.455.0673, [Kumi\\_Rattenbury@nps.gov](mailto:Kumi_Rattenbury@nps.gov)

**Fire Management**

The 2016 Alaska fire season was below the annual median of one million acres burned. There were 321 human ignited wildfires that burned 9,611 acres and 227 lightning ignited fires that burned 490,211 acres. On July 2<sup>nd</sup>, lightning ignited the Mauneluk River 2 fire northwest of Narvak Lake near Gates of the Arctic National Park and Preserve. This fire burned into the park north of Narvak Lake on July 17 and consumed approximately 1,394 acres of National Park Service lands. Alaska Fire Service personnel conducted point protection for the Peace of Shelby lodge.



The National Park Service – Eastern Area Fire Management also conducted a fuels reduction project near Narvak Lake. Please visit the National Park Service Learning Center website for Firewise Alaska and Fire Prevention information at: <https://www.nps.gov/akso/nature/fire/>

For more information, contact Jason Devcich at 907-455-0650 or [jason\\_devcich@nps.gov](mailto:jason_devcich@nps.gov)





National Park Service Update  
Gates of the Arctic National Park and Preserve  
North Slope Regional Advisory Council Meeting  
October 31 – November 1, 2016

**Ambler Mining District Road**

On June 30, 2016, the Alaska Industrial Development and Export Authority (AIDEA) submitted the information requested by the various federal agencies as part of their initial application review. As of August 30, the application is now considered sufficient to allow the right of way permitting process to move forward. The Bureau of Land Management is preparing to publish a notice of intent to conduct an environmental impact statement (EIS) for the project and will be developing a schedule over the course of the next month.

With respect to questions about whether this process will only be for scoping of alternatives or for the entire permitting process, the application AIDEA submitted was for the full permitting process.

With respect to the separate National Park Service (NPS) Environmental and Economic Assessment, NPS plans to conduct that evaluation on a parallel path with the EIS and take advantage of the public meeting schedule contained within the EIS.

For more information, contact Greg Dudgeon, Superintendent at 907-457-5752 or Joe Durrenberger, Project Manager at 907-455-0684

A new study analyzing the potential economic effects of the proposed Ambler Mining District Industrial access road was recently published. The study also assesses the economic impacts on subsistence and the journal article is provided as a handout.

For more information, contact Kyle Joly at [kyle\\_joly@nps.gov](mailto:kyle_joly@nps.gov)

**Subsistence Updates**

The Gates of the Arctic National Park Subsistence Resource Commission (SRC) held an informational meeting in Anaktuvuk Pass on April 26, 2016. The main topics of discussion were new federal subsistence wildlife regulations, cultural resource project updates, and access to Native allotments. The next SRC meeting will be in Fairbanks on November 15-16, 2016.

Additionally, NPS shared two videos with the community of Anaktuvuk Pass. One titled “Connecting Youth through Science and Culture: Anaktuvuk Pass Caribou” which featured a caribou butchering project with the Nunamiut School, Effie Kokrine Charter School, and NPS. Also shared, was a short film called “Counting on Caribou” created by Farthest North Films. Footage was collected as part of a study documenting traditional ecological knowledge of caribou and perspectives about caribou held by subsistence users in northwest Alaska.



# Summary of Activities

## *Arctic National Wildlife Refuge*



**Prepared for North Slope Regional Advisory Council  
March 2017**



Arctic National Wildlife Refuge  
907/456 0250 800/362 4546  
arctic\_refuge@fws.gov  
<http://arctic.fws.gov/>

➤ **Research and Monitoring**

Caribou:

Management of the Porcupine Caribou Herd is a cooperative effort involving:

- 2 federal governments
- 3 state or territorial governments
- 8 native land claim agreements
- 5 national parks, preserves, or refuges
- 1 territorial park
- 2 special management areas
- Local residents of several small communities in Alaska and Canada

Management is coordinated by the International Porcupine Caribou Board, consisting of representatives from Canadian and U.S. national governments, Yukon and Northwest Territories provincial governments, the State of Alaska, and local citizens from Alaska and Canada. The International Board generally meets twice per year; the most recent meeting was held in November 2015 in Yellowknife, NWT. Biologists from the responsible agencies also work together through the Porcupine Caribou Technical Committee, which reports to the International Board.

Examples of work being done include:

- Capture and radio-collaring caribou: mainly done in March each year by YTG, with assistance from USFWS and ADF&G.
- Purchase of radio-collars: funding provided by multiple agencies, primarily (in recent years) by Inuvialuit Final Agreement funds (Canada).
- Radio-tracking and costs of satellite data processing: mainly USFWS with assistance from YTG and others.
- Annual estimates of calving distribution and success: ADF&G
- Photo census (every 2 – 5 years): ADF&G with assistance from USFWS and others.
- Harvest summaries: YTG, NWT, ADF&G, with assistance from local communities.
- Body condition monitoring: YTG with assistance from local communities.

After declining slowly during the 1990s and early 2000s, the Porcupine Caribou Herd has been increasing for several years. The 2010 census estimated herd size at 169,000 and the 2013 census found 197,000 caribou, which is the highest population yet recorded for this herd. Staff from the

Alaska Department of Fish and Game prepared for an aerial photo census in early July 2016. However, the caribou were never concentrated enough for a good census. Another attempt at a census will be made next year.

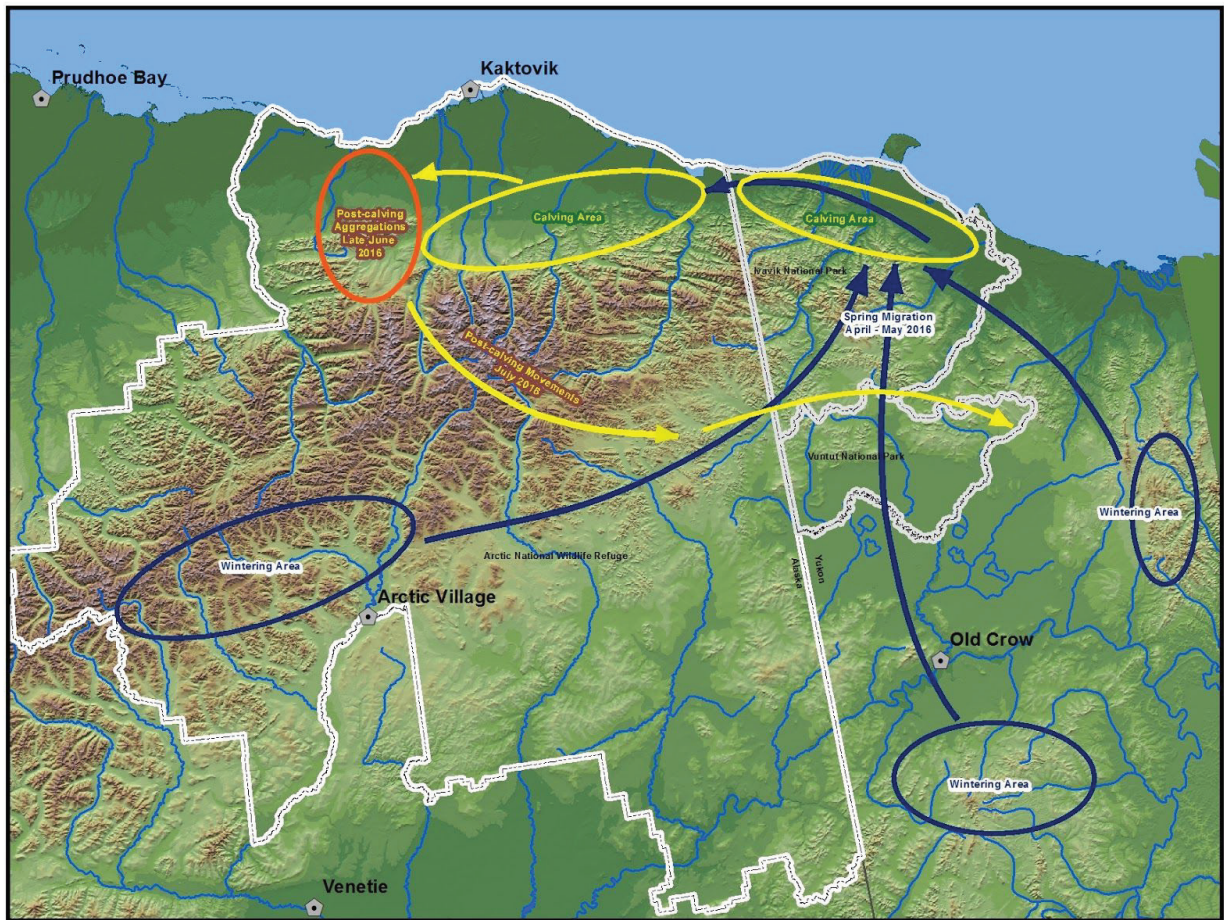
During the winter of 2015-2016 caribou were concentrated in 3 main areas, including:

- Southern Brooks Range of Alaska, mostly west of Arctic Village, extending north and west of Chandalar Lake.
- Ogilve River basin of Yukon Territory
- Richardson Mountains along the border of Yukon and Northwest Territories.

Spring migration began during late April, and proceeded rapidly through May. Caribou from Alaska mainly moved east into Yukon Territory, joining with caribou moving north from the Ogilve Mountains. These caribou then moved north to the coast, then west into Alaska. Caribou from the Richardson Mountains were mostly bulls. They moved generally northwestward to the coast, then west into Alaska (Figure 1).

Calving was spread across a wide stretch of coastal plain, from the northeastern Yukon into the Arctic National Wildlife Refuge. As in 2015, much of the calving this year occurred on the Refuge, although many caribou calved on the Yukon coastal plain as well. Details of calving rates and distributions will be provided by the Alaska Department of Fish and Game later this summer.

Post calving aggregations occurred on the Alaskan coastal plain, near the the Katakturuk and Hulahula Rivers. This area was used frequently by this herd during the late 1980s and early 1990s, but has seen relatively less use during the past 10 years. Large numbers of caribou gathered along the upper Sadlerochit River and near the Neruokpuk Lakes in late June before moving south and then east through the Brooks Range in early July. By July 15 many caribou had reached the Canadian border, and they continued east along the northern edge of Old Crow Flats to the Richardson Mountains. In early August, several collared caribou began moving back westward toward the Alaska/Canada border. By mid October, much of the herd was back in Alaska, ranging as far west as the hills north of the Hodzana River. In late October, there was a large movement back eastward, and by December most of the herd was wintering along the Alaska-Canada border between the Porcupine and Firth Rivers. Recent maps of the herd's distribution are now available on the web site of the Porcupine Caribou Management Board (Canada): <http://www.pcmb.ca/herd>



**Figure 1.** Distribution and movements of the Porcupine Caribou Herd, January - July 2016. This figure is a generalized depiction based on information provided by the Alaska Department of Fish and Game, Yukon Department of Environment, and U.S. Fish and Wildlife Service.

Long-term Changes in Caribou Distribution and Abundance in the Alaskan Arctic:

For several years, Arctic Refuge personnel have been providing assistance to Dr. Josh Miller of the University of Cincinnati on a study of changes in relative abundance of arctic caribou during the past >800 years. The study examines the abundance and ages of caribou antlers and bones collected on the arctic tundra. These objects may persist in the cold, arctic environment for many centuries (Figure 2). Dr. Miller has developed protocols for determining ages of these samples based on predictable patterns of weathering and accumulation of lichens, mosses, and other material, calibrated to ages estimated by radiocarbon dating techniques. This year, Refuge staff

traveled to the Jago River to collect 170 samples of antlers that had been located by Dr. Miller on a previous trip. Dr. Miller will use this information to investigate how long term changes in climate patterns might influence distributions of the large arctic caribou herds.

Moose:

*North Slope, GMU 26C*

FWS staff conducted a moose survey of North Slope river drainages in Game Management Unit 26C during April 2016. River corridors were flown to cover all available moose habitat. Rivers included in the survey were the Sadlerochit, Hulahula, Okpilak, Okpirourak, Jago, Aichilik, Egaksrak, Ekaluakat, and Kongakut.

We observed 42 moose within the entire area surveyed, including 9 short-yearlings, 2 of which were a set of twins. Most moose were observed in the upper tributaries of the Kongakut River drainage. Last year we counted a total of 36 moose in the survey area, 5 of which were short yearlings. These results suggest that calf or short-yearling survival is relatively low in this system, but it was higher during the past 2 years than during 2014 when no young of the year were observed.

The FWS requested a Special Action to the Federal Subsistence Board to close moose hunting in GMU 26C for the 2015/2016 regulatory year. The season is now closed and because the population remains lower than our long-term average (~50 moose) we recommend that it remain closed until the moose population improves in this region.

Because of the continued low population and closure of the moose hunt in this area, we plan to survey these drainages again during April 2017.

*South Side of Brooks Range, GMU 25A*

Data from recent surveys indicate a stable population of moose in this area since 2000. Thus, no survey was attempted during 2016. If funds are available, we will survey this area again in April 2017.

Muskoxen:

No survey was conducted for muskoxen in the Refuge during 2016. A small group (approximately 18 to 20) was observed along the lower Kongakut River in summer 2015 and a group of 6 (including one radiocollared muskox) was seen by Canadian biologists just west of the international border during March 2016. However, these groups are thought to be found more

usually in Canada. No visitors or FWS staff reported observing muskoxen in the Refuge this summer.

Sheep:

Traditional ground-based estimates of Dall's sheep sex and age composition were not conducted during 2016. Instead, FWS and National Park Service biologists collaborated on a trial of an aerial transect survey covering approximately 4,000 square miles (10,117 sq. km) in the center of the Refuge. The survey area included the Hulahula River watershed on the north side of the Brooks Range and the Arctic Village Sheep Management Area on the the south side, both of which have been surveyed during previous years. During July 9-13, we surveyed 115 transects, each 15 km long. We observed a total of 283 sheep in 52 groups. Most groups were small, although a few large groups of ewes and lambs were seen in the upper Hulahula drainage (Figure 3). These data will be used to estimate total sheep abundance in this area; results will be available later this year. Overall, sheep abundance seems to be low compared to numbers seen in the past, but similar to levels observed during the last few years.



**Figure 3.** Dall's sheep ewes and lambs observed during an aerial survey within the Arctic National Wildlife Refuge, July 2016.

### Pacific Common Eider on Beaufort Sea Barrier Islands

Populations of the Pacific common eider declined by 50–90% from 1957 to 1992, and the species is listed as a U.S. Fish and Wildlife Service Bird of Management Concern and an Audubon WatchList species. A recent climate change vulnerability assessment listed Pacific common eider as the most at-risk waterbird due to potential habitat loss and low productivity. Across their range, common eiders are an important subsistence species, contributing to food security in many communities. Although Pacific common eiders have declined throughout their range, those breeding on barrier islands in the Beaufort Sea are considered particularly vulnerable to climate-mediated factors and impacts from development, due to their small population size, ecology, and genetic and physical segregation. In 2014, Arctic Refuge, in partnership with the University of Alaska Fairbanks, U.S. Geological Survey - National Wildlife Health Center and Alaska Science Center, and the Wildlife Conservation Society, began a multi-year study to determine the current demographics and limiting factors for the population of common eider breeding along the Beaufort and Chukchi Sea coasts.

From June 7-August 11, 4 University of Alaska and Refuge staff conducted an inventory of nesting waterbirds on barrier islands between Pole Island and the Hulahula River and Tapkaurak Point and the Canadian border. We located a total of 585 nests, 529 of which were common eiders. As part of this work, we captured eider for banding and disease surveillance and placed cameras at some nests to monitor causes of fate. Nest success was very low in 2016 due to high egg predation and flooding. Preliminary results from the video suggest nest predation by grizzly and polar bears was much higher in 2016 compared to 2014-15 and that most nests that were still active at the time of a July 18<sup>th</sup> storm, flooded in a large storm surge. This storm surge was the highest recorded during July. Sea levels are predicted to rise, the intensity and frequency of storm surges in the Beaufort Sea are increasing, and model predictions suggest that wave heights and storm surges will continue to increase as ice retreats. In the future, eiders nesting on low elevation barrier islands may be increasingly impacted by earlier, stronger, and more frequent storm surges.





**Figure 4.** Common Eider survey, Beaufort Sea barrier island. *Photo credit - Tine Hagelin*

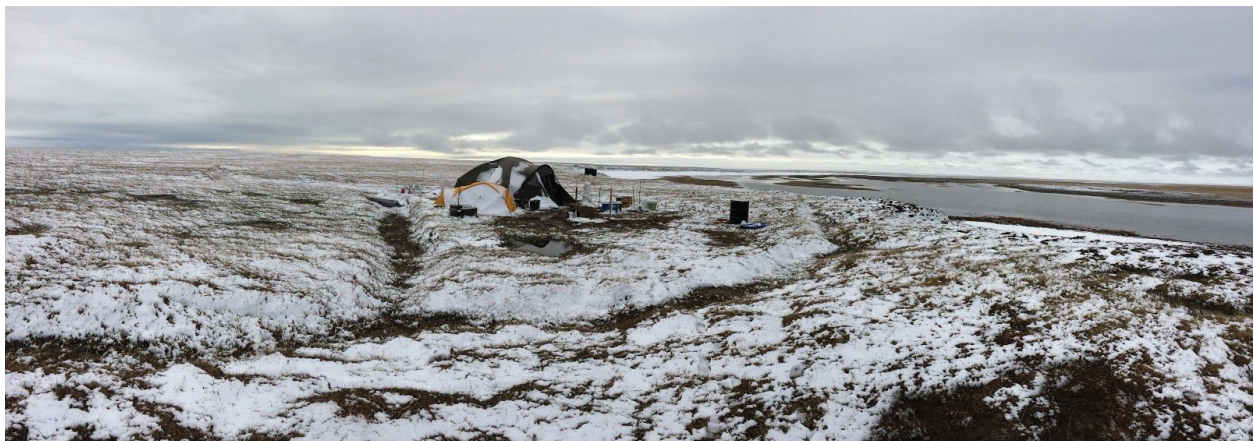


**Figure 5.** A) Nest camera footage of polar bear walking behind common eider hen on a nest and B) a glaucous gull depredating a common eider nest.

#### Tundra Nesting Birds at the Canning River Delta

The study site at the Canning River Delta in Arctic Refuge was established in the late 1970s and has since become the primary tundra nesting bird research station for the refuge. Work at this location is a collaboration between Arctic National Wildlife Refuge, Manomet, Inc., and the U.S. Geological Survey. On June 6<sup>th</sup>, a crew of 4 traveled to the camp by small wheel plane, a few days later than usual due to early breakup. We located a total of 253 nests, 160 of which were

shorebirds. This is below average compared to previous years. Estimated nest survival for all shorebirds was 43%, which is similar to the historic average. Lemming abundance (based on incidental sightings) was low and correspondingly, local Arctic fox did not appear to successfully reproduce in 2016. We captured 44 shorebirds for banding and to collect disease samples. We also attached geolocators to 13 Dunlin that will be used to track the birds migration and wintering travel patterns. As part of a pilot to more accurately identify causes of nest failure, we placed cameras at 47 nests. Video data analysis is ongoing, but preliminary results suggest that of 16 camera-monitored shorebird nests that failed, 75% were depredated by Arctic fox and 19% were depredated by jaeger species. Of the 3 camera-monitored loon nests that failed, 100% were depredated by Arctic fox.



**Figure 6.** Canning River tundra nesting bird camp after a June 22nd snow. *Photo credit - Alan Kneidel*



**Figure 7.** A) Nest camera footage of parasitic jaegers depredating a long-tailed duck nest. B) Resighted semipalmated sandpiper that was banded in a prior year.

### Plant Reconnaissance at Upper Coleen River

This work is part of a long-term effort to survey the vegetation within the Arctic refuge.

Objectives are to: (1) compile a complete plant species list for the survey area, with species listed by three areas: lowland river deposits, limestone uplands, and slate-conglomerate uplands and (2) collect specimens of unusual or rare species for the Arctic Refuge and UAF herbaria.

Refuge staff camped at the Bear Mountain airstrip on the Coleen River and traveled in different directions each day, surveying all habitat types within approximately three miles of the airstrip. We collected samples of all unusual or unknown plants for later identification. After the survey we will generate a comprehensive list of all vascular and nonvascular (e.g., mosses, liverworts, and lichens) plant species for the area by plant community type and bedrock type.

The result of this investigation will be a report documenting plant species by habitat type. We expect that there will be differences between plant communities on different types of bedrock. In addition we will add specimens to the Arctic Refuge and UAF herbaria from a survey area with almost no previous plant collection. The digital databases from the herbaria will then provide records of plant species distribution.

Species varied greatly by habitat and bedrock type. For example, the limestone mountains had very different plant communities than the slate-conglomerate mountain. The presence of well-developed fens and their great plant diversity was our biggest surprise, with over 20 species in just one genus, the sedge genus *Carex*. Since the site is near the northernmost extent of forest in Alaska, we also did detailed plant community descriptions in 4 white spruce stands on different landscape positions. Unknown species have been sent to specialists for ID.



**Figure 8.** Sampling vegetation on a limestone bluff.

Vegetation and permafrost monitoring at Jago Long Term Ecological Monitoring site:

Between 1996 and 1999, refuge staff established a long-term ecological monitoring site in each of the five major ecological zones in the Refuge. We monitor vegetation and physical parameters such as soils and permafrost. By repeating monitoring every 5 years, we are building a long-term data base to document baseline and change in vegetation and soils of the Refuge. Objectives are to obtain baseline data, document trends, improve understanding of ecological relationships and natural processes, and contribute to regional databases. The Jago site was established in 1996. The site was examined for the fifth time in 2016. The work included surveying vegetation plots to document changes over time for plant species occurrence, abundance (cover) and height, and soil active layer depth and soil temperature in 20 permanent sampling quadrats. Plant species cover is quantified by point sampling using International Tundra Experiment protocols. The work also includes thermokarst monitoring as part of a study initiated in 2010 and expanded in 2011. This work will be repeated every 5 years. A comprehensive set of ecological components have been sampled along 200–500 m transects at 27 study areas across Alaska, representing different landscapes, including topography (surveying), hydrology (water-table

surveys, water-level recorders), soils and ground ice (coring and sampling for ground-ice and soil organic carbon content), paleoecology (peat and stratigraphic interpretation, radiocarbon dating), thaw depths and permafrost table (probing and geophysical surveys), soil and water thermal regimes (dataloggers), and vegetation (point sampling by species). At the most intensive study areas, including Jago site, sampling for the entire suite of components has been stratified into 4–6 thermokarst degradation/stabilization stages with each stage replicated at three plots (5 stages and 15 plots at Jago).

Another aspect of the project is to obtain repeat photographs of various plots that have been photographed in 1988, 1989, and 2000. We found about half of them and retook the plot photographs to document change over time. Changing vegetation was seen mainly in riparian areas.



**Figure 9.** Topographic surveys through thermokarst terrain document changes in landforms due to permafrost thawing and refreezing.

### *Public Use Management*

Staff continues to work together with area residents in a variety of ways to help keep habitat healthy, and to convey important messages about issues affecting communities to the Refuge visitors and businesses who serve them.

#### Commercial Permits:

Arctic Refuge is required to regulate the businesses that bring clients onto the Refuge and that guide clients during their stays. In 2016, the Refuge issued 19 permits for air operator businesses, 23 permits for recreational guide businesses, 19 polar bear viewing guide and/or boat operator businesses, and 11 hunting guide businesses.

Interest in commercial polar bear viewing continues to increase. In response, the Refuge will begin evaluating options for future management. We will be seeking input from local communities and stakeholders later this fall. The Refuge will not be soliciting requests from other businesses not currently under permit with Arctic National Wildlife Refuge for commercial guided polar bear viewing and water taxi activities.

#### Polar Bear Viewing:

The Refuge developed a commercial guided polar bear viewing program within the protections provided by the Marine Mammals Protection Act and the Endangered Species Act to meet public demand by local service providers and by visitors for this activity. About one-third of the guides authorized to conduct polar bear viewing services are local residents. In 2016, we permitted eight boat operating guides, and 11 additional guides who utilize the services of the permitted boat operators.

Because of increases in the number of polar bear viewing visitors on waters surrounding Kaktovik, we are beginning a planning effort focused on the management of polar bear viewing at the Refuge, now and into the next 15 years. In addition to increases in the number of visitors viewing polar bears on Refuge waters, bears and viewers gather around Kaktovik at the same time that critical subsistence activities occur, so the potential for conflict is also increasing. We're dedicated to ensuring that we provide quality polar bear viewing opportunities that minimize threats to public safety, minimize potential disturbance to polar bears, and minimize conflicts with local residents. During 2017, Refuge staff will consider the extensive input we've received from residents over the past years about issues related to polar bear viewing. Since viewing of polar bears on land in Kaktovik is not within our jurisdiction, we will focus our efforts on those issues within our

influence, related to visitor activities on waters surrounding Kaktovik. However, we are especially interested in any ideas from community leaders about how Kaktovik will address land viewing management issues, so our work can complement local goals for managing visitors.

In order to help the Refuge evaluate the Commercial Polar Bear Viewing program, we invited Dr. Robert Dvorak of Central Michigan University to return to Kaktovik, this time with Dr. Jeffrey Hallo of Clemson University, to help us to better manage polar bear viewing visitors to the Refuge. They met and talked with as many Kaktovik community leaders as they could while there in order to fully understand the program. Their team will continue work with us in 2017 and hopes to share presentations about their goals and results when they return to Kaktovik.

A strong commitment by all to work together will be needed to insure the Refuge's polar bear viewing program can complement community planning goals. One way the refuge is complementing community goals is by continuing to support and fund the community-based Kaktovik Youth Ambassadors program.



**Figures 10.** KYAs connect visitors with community concerns and mentor peers about safe practices.

Kaktovik began the program in 2012, with help from the refuge, for local youth to educate ever-increasing numbers of polar bear viewing visitors on safety practices and Inupiat culture. Ambassadors and staff collaborate to update Kaktovik City and Tribal Councils, informing

community leaders who will make decisions on managing the effects of the influx of both polar bears and people that congregate there until the sea ice returns. In 2016, Ambassadors completed edits to a film project they hope will aid community leaders with orienting visitors to the community's concerns about safety and respectful visitor practices. Funds donated by the National Fish and Wildlife Foundation insure that the KYA program can continue into 2017 and expand ways the KYAs can help maintain the values of their local community. We commend these youths for taking a youth leadership role in their community.

Law Enforcement:

Law enforcement patrols were conducted in August and September of 2016 with routine compliance checks at airstrips primarily in major drainages on the south side of the Brooks Range due to weather conditions. Good compliance was observed of both state and federal regulations from the majority of the hunters checked. Special emphasis was placed again on ensuring only federally qualified subsistence users from Arctic Village, Venetie, Fort Yukon and Chalkyitsik were hunting sheep in the Arctic Village Sheep Management Area. Routine compliance checks were made of big game hunting guides to ensure they were operating within the guidelines of their submitted operations plans. Moose hunting patrols were conducted in September on several of the major river drainages to ensure compliance of state and federal regulations. Overall, the majority of the hunters encountered on the ANWR during the 2016 season were in compliance.

This fall Arctic Refuge hired Brett Nigus as our new Law Enforcement Officer/Pilot transferring to us from the Koyukuk-Nowitna-Innoko Refuge complex. Brett comes with good Alaska experience and skills. He plans to travel to communities and villages for meetings with local leaders and community members to become acquainted and to better understand local concerns and issues.

*Education and Outreach:*

Kaktovik Marine Science Camp:



The 2016 Marine Science Oceanography Program connected Kaktovik students to the scientific world through field-based, hands-on activities from August 8-13. The University of Texas Marine Science Institute led the program with support from Arctic Refuge. This year's theme was "Exploring our Oceans" and the goal was to expose students to diverse tools, techniques, and technologies including using a Remotely Operated Vehicle (ROV) that oceanographers commonly use. The Kaktovik Lagoon acted as a natural classroom enabling students to explore their local environments. This week-long program provides students a better understanding of stream inflows, lagoons, and erosion occurring on the Beaufort Sea coast. Students learned how to seine and identify invertebrates and fish, measure groundwater levels, and various career opportunities with the U.S. Fish and Wildlife Service.



**Figure 11.** Kaktovik students complete a GPS-based survey of cliff erosion with Lead Instructor Cliff Strain, Allyssa Morris, USFWS Education Specialist and Christina Bonsell, UTMSI graduate student.

Arctic Youth Ambassadors:

Not to be confused with the community-based Kaktovik Youth Ambassadors program, youth leaders from across the state (including two from Kaktovik) are Arctic Youth Ambassadors. The Arctic Youth Ambassadors Program is supported by Alaska Geographic and the U.S. Fish and Wildlife Service and brings together diverse youth from across Alaska to serve as ambassadors

for their communities and country in building awareness at home and abroad about life in the Arctic. They'll add their voices and solutions to a global conversation about how to sustain communities, cultures and the environment in a changing Arctic. Follow their lives and stories across social media by tracking **#ThisArcticLife #USArccticYouth**

This fall our long-time Community Liaison, Joanne Bryant, departed Arctic Refuge for a new position with the Fish and Wildlife Service's External Affairs branch, where she is now a Tribal Communication and Outreach Specialist for Region 7. Joanne dedicated 17 years of her life to working for Arctic Refuge, leading culture and science camps, Youth Conservation Corps crews, documenting Native place names, translating traditional stories from Gwich'in to English, and much more. Joanne is greatly missed, but Environmental Education Specialist, Allyssa Morris, will see that her culture and science camps, YCC program and other projects continue.



**Figure 12.** Community Liaison, Joanne Bryant



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



FOREST SERVICE

OSM 17003.PK

JAN 24 2017

Lem Butler  
Assistant Director  
Division of Wildlife Conservation  
Alaska Department of Fish and Game  
PO Box 115526  
Juneau, Alaska 99801

Dear Mr. Butler:

This letter responds to your Temporary Special Action Request WSA16-03 requesting the Federal Subsistence Board (Board) open Federal public lands in Unit 23 to the harvest of caribou by non-Federally qualified subsistence users.

The Board has rejected this request. The Board determined that new information provided by the Alaska Department of Fish and Game was not sufficient to rescind the closure to non-Federally qualified subsistence users and open Federal public lands. Additionally, the Board considered public testimony on your request, the recommendations of all four affected Regional Advisory Councils, as well as information provided through Tribal consultation and the Alaska Native Claims Settlement Act (ANSCA) corporation consultation. While the Board did not approve your request to open Federal public lands in Unit 23 to the harvest of caribou by non-Federally qualified subsistence users, it directed Office of Subsistence Management (OSM) staff to initiate interagency discussions about resolving ongoing user conflicts in the area. If you have any questions, please contact Jennifer Hardin, OSM Anthropology Division Chief at (907) 786-3677, or Chris McKee, OSM Wildlife Division Chief at (907) 786-3572.

Sincerely,

Anthony Christianson  
Chair

Mr. Lem Butler

2

Enclosures

cc: Federal Subsistence Board

Eugene R. Peltola, Jr., Assistant Regional Director, Office of Subsistence Management  
Stewart Cogswell, Acting Deputy Assistant Regional Director  
Office of Subsistence Management  
Jennifer Hardin, Anthropology Division Chief, Office of Subsistence Management  
Chris McKee, Wildlife Division Chief, Office of Subsistence Management  
Zachary Stevenson, Subsistence Council Coordinator, Office of Subsistence Management  
Eva Patton, Subsistence Council Coordinator, Office of Subsistence Management  
Karen Deatherage, Subsistence Council Coordinator, Office of Subsistence Management  
Raymond Stoney, Chair, Northwest Arctic Subsistence Regional Advisory Council  
Rosemary Ahtuanguak, Acting Chair, North Slope Subsistence Regional Advisory Council  
Louis H. Green, Jr., Chair, Seward Peninsula Subsistence Regional Advisory Council  
Jack Reakoff, Chair, Western Interior Subsistence Regional Advisory Council  
Bruce Dale, Director of Wildlife Conservation, Alaska Department of Fish and Game  
Jill Klein, Special Assistant to the Commissioner, Alaska Department of Fish and Game  
Interagency Staff Committee  
Administrative Record

**STAFF ANALYSIS  
TEMPORARY SPECIAL ACTION  
WSA16-03**

**ISSUES**

Temporary Wildlife Special Action Request WSA16-03 submitted by the State of Alaska through the Alaska Department of Fish and Game (ADF&G), requests that Federal public lands in Unit 23 be reopened to caribou hunting by non-Federally qualified subsistence users for the 2016/17 regulatory year.

**DISCUSSION**

The proponent requests the Federal Subsistence Board (Board) to open Federal public lands in Unit 23 to the harvest of caribou by all users for the remainder of the July 1, 2016 to June 30, 2017 regulatory year. These lands were closed to the harvest of caribou except by Federally qualified subsistence users for the 2016/2017 regulatory year by Temporary Wildlife Special Action (WSA) 16-01. The proponent states that repealing WSA16-01 is appropriate due to new information concerning the population status of the Western Arctic Caribou Herd (WACH), to provide for subsistence uses by non-Federally qualified subsistence users and former Federally qualified subsistence users, and to remedy the social and economic hardships imposed by the decision on non-Federally qualified subsistence users before the caribou season in Unit 23 opens on July 1, 2016 for residents of Alaska and August 1, 2016 for nonresidents of Alaska. The Board's decision to approve WSA16-01 lacked evidence to support the need for closure to address a conservation concern and was not consistent with harvest management strategies found in the WACH Management Plan, endorsed by the Board during its 2013 meeting. Closing a large portion of Unit 23 will consolidate nonlocal hunters in smaller areas and increase crowding on State lands. The Board did not consider the impact of a closure on people who have already made plans to hunt caribou in Unit 23 in 2016 and have made personal and financial commitments. The proponent stated that the Federal land closure will be detrimental to subsistence use due to increased user conflicts, particularly on the Noatak River, and increased competition for caribou in areas that Federally qualified subsistence hunters can access.

The proponent states that new information indicates improvements in caribou calf production, recruitment, survival, and weight. Adult females exhibited very good body conditions and high pregnancy rates in 2015 and 2016. The newly derived WACH population estimate for fall 2015 is 206,000 caribou, falling within the lower end of the WACH Management Plan's "conservative" harvest management strategy. The proponent states that this new information is sufficient to rescind WSA16-01 and reopen Federal public lands in Unit 23 to the harvest of caribou by all users.

The term Federally qualified subsistence user (FQSU) is used to distinguish rural residents residing in communities with customary and traditional use (C&T) determinations for caribou in Unit 23. This contrasts with non-Federally qualified subsistence users (non-FQSUs) that may be Alaska residents that do not reside in a community with a C&T determination for caribou in Unit 23, or non-residents of Alaska. Other authors that are cited in this analysis frequently use the terms "local" and "nonlocal" without defining the parameters of the terms. Presumably "local" hunters are those that reside within the range of the

Western Arctic Caribou Herd (WACH) and “nonlocal” hunters are those that do not. When definitions were provided they were included in the analysis. Otherwise, the term used is in quotations.

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.*

In addition, ANILCA Title VIII Section 815.3 authorizes restricting nonsubsistence taking of fish and wildlife on Federal public lands only if necessary for the conservation of healthy fish and wildlife populations, to continue subsistence use, or pursuant to other laws.

### **Existing Federal Regulations**

#### **Unit 23—Caribou**

*Unit 23, north of and including the Singoalik River drainage* 5 caribou per day as follows:

*Calves may not be taken*

*Bulls may be harvested*

*July 1–Oct. 14  
Feb. 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 in Unit 23 are closed to caribou hunting except by Federally qualified subsistence users for the 2016/2017 regulatory year.*

*Unit 23 remainder*

*5 caribou per day as follows:*

*Calves may not be taken*

*Bulls may be harvested*

*July 1–Oct. 31  
Feb. 1–June 30*

*Cows may be harvested, however, cows accompanied by calves may not be taken  
July 31–Oct. 14.*

*July 31–March 31*

*Federal public lands in Unit 23 are closed to caribou hunting except by Federally qualified subsistence users for the 2016/2017 regulatory year.*

## **Proposed Federal Regulations**

### **Unit 23—Caribou**

*Unit 23, north of and including the Singoalik River drainage*

*5 caribou per day as follows:*

*Calves may not be taken*

*Bulls may be harvested*

*July 1–Oct. 14  
Feb. 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 in Unit 23 to caribou hunting except by Federally qualified subsistence users for the 2016/2017 regulatory year.*~~

*Unit 23 remainder*

*5 caribou per day as follows:*

*Calves may not be taken*

*Bulls may be harvested*

*July 1–Oct. 31  
Feb. 1–June 30*

*Cows may be harvested, however, cows accompanied by calves may not be taken  
July 31–Oct. 14.*

*July 31–March 31*

~~*Federal public lands in Unit 23 to caribou hunting except by Federally qualified subsistence users for the 2016/2017 regulatory year.*~~

## Existing State Regulations

### Unit 23—Caribou

|   |   |  |
|---|---|--|
| <i>Unit 23, north of and including the Singoalik River drainage</i> | <i>Residents—5 caribou per day; however, calves may not be taken.</i>     |  |
|   | <i>Bulls</i>  | <i>July 1–Oct. 14<br/>Feb. 1–June 30</i> |
|   | <i>Cows</i>   | <i>Jul. 15–Apr. 30</i>                   |
|   | <i>Nonresidents—1 bull; however, calves may not be taken</i>              | <i>Aug. 1–Sept. 30</i>                   |
| <br><i>Unit 23 remainder</i>  | <br><i>Residents—5 caribou per day; however, calves may not be taken.</i> |  |
|   | <i>Bulls</i>  | <i>July 1–Oct. 14<br/>Feb. 1–June 30</i> |
|   | <i>Cows</i>   | <i>Sept. 1–Mar. 31</i>                   |
|   | <i>Nonresidents—1 bull; however, calves may not be taken</i>              | <i>Aug. 1–Sept. 30</i>                   |

## Extent of Federal public lands

Federal public lands comprise approximately 69% of Unit 23 and consist of 42% National Park Service (NPS) managed lands, 18% Bureau of Land Management (BLM) managed lands, and 10% U.S. Fish and Wildlife Service (USFWS) managed lands (see **Map 1**).

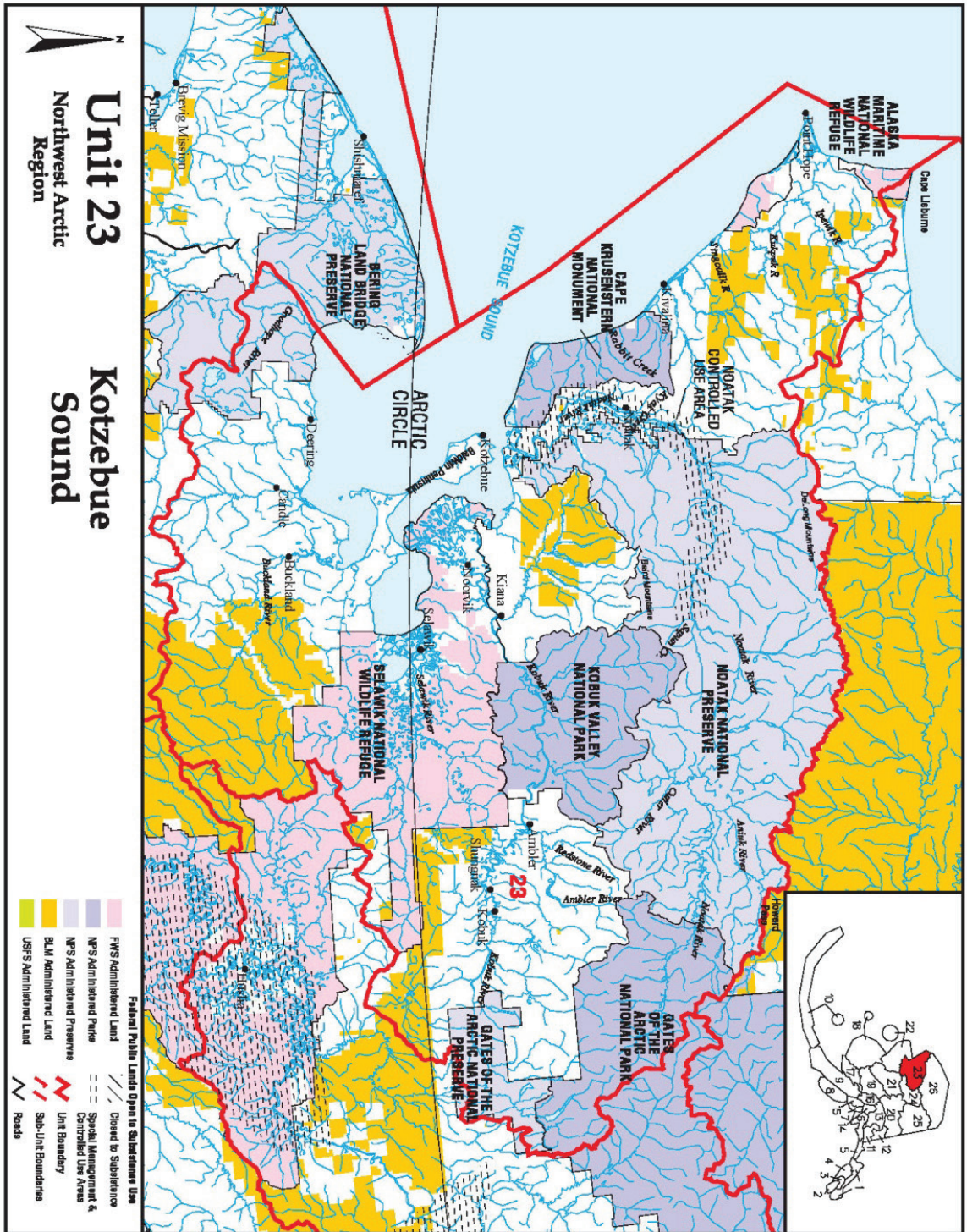
## Customary and Traditional Use Determination

Residents of Unit 21D west of the Koyukuk and Yukon Rivers, Galena, and Units 22, 23, and 24 including residents of Wiseman but not including other residents of the Dalton Highway Corridor Management Area, and Unit 26A have a customary and traditional use determination for caribou in Unit 23 (see **Table 1**).

## Regulatory History

In March of 1988, the Traditional Council of Noatak submitted a proposal to the Alaska Board of Game to establish the Noatak Controlled Use Area. The Board of Game modified the request to include approximately one third of the land area requested by the Traditional Council and unanimously approved





Map 1. The extent and location of Unit 23—Kotzebue Sound.

**Table 1.** Communities in the customary and traditional use determination for caribou in Unit 23.

| CUSTOMARY AND TRADITIONAL USE DETERMINATION–UNIT 23 CARIBOU  |   |
|--|---|
| Unit of Residence  | Community   |
| Unit 21D west of the Koyukon and Yukon Rivers and Galena   | Galena, Kaltag, Koyukuk, and Nulato.  |
| Unit 22  | Brevig Mission, Council, Elim, Gambell, Golovin, Koyuk, Little Diomed Island, Nome, Saint Michael, Savoonga, Shaktoolik, Shishmaref, Stebbins, Teller, Unalakleet, Wales, and White Mountain. |
| Unit 23  | Ambler, Buckland, Deering, Kiana, Kivalina, Kobuk, Kotzebue, Noatak, Noorvik, Point Hope, Selawik, and Shungnak.  |
| Unit 24 including residents of Wiseman but not including other residents of the Dalton Highway Corridor Management Area. | Alatna, Allakaket, Anaktuvuk Pass, Bettles, Evansville, Hughes, Huslia, Wiseman.  |
| Unit 26A   | Atkasuk, Barrow, Nuiqsut, Point Lay, and Wainwright.  |

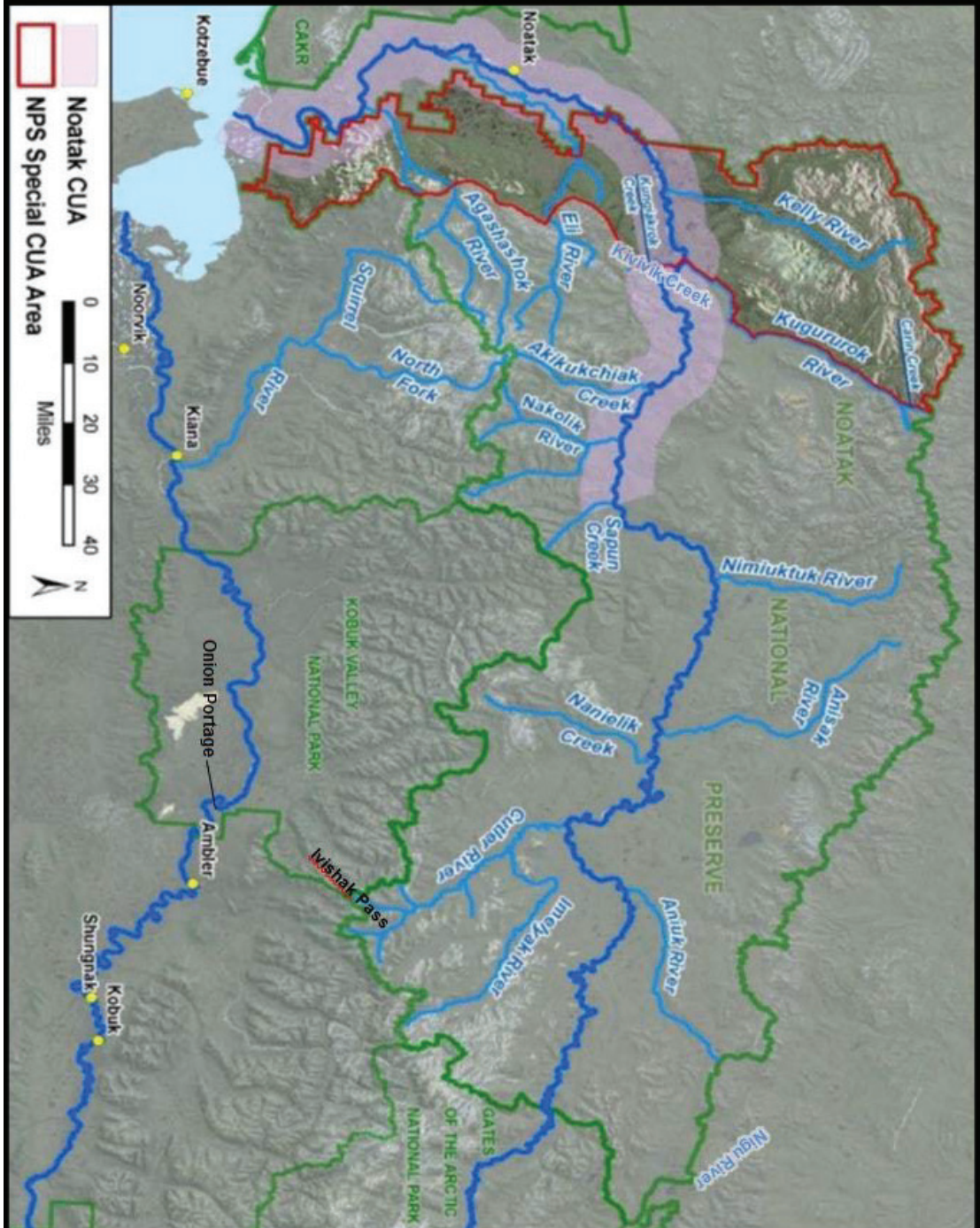
the Noatak Controlled Use Area in 1988 (Fall 1990:87), which was expanded in 1994 (**Map 2**). The Noatak Controlled Use Area consists of a 10-mile wide corridor along the Noatak River from its mouth to Sapun Creek. This area is closed from Aug. 15–Sept. 30 to the use of aircraft in any manner for hunting big game including transportation of big game hunters, their hunting gear, and/or parts of big game. Approximately 80 miles of the Noatak Controlled Use Area are within Noatak National Preserve (Betchkal 2015, Halas 2015). Big game present in Unit 23 are caribou, moose, Dall sheep, muskoxen, black and brown bears, and wolves. These regulations apply on State, private, and Federal public lands.

In 1995, the Federal Subsistence Board adopted Proposal P95-51 to increase the caribou harvest limit from 5 caribou per day to 15 caribou per day so that subsistence hunters could maximize their hunting efforts when caribou were available (FWS 1995a).

In 1997 the WACH Working Group was established and is “a formal cooperative multi-stakeholder body of user groups to review and provide advice on caribou management policy for the herd. The initial [management plan] was written in 2003, and revised in 2011” (Halas 2015:37). There is a 20-seat members board made up of subsistence hunters, conservationists, an aircraft transporter representative, hunting guide’s representatives, and a member of the Reindeer Herders Association. The working group meets annually. A Technical Committee of biologists and managers advise working group members (Halas 2015, WACH Working Group 2011).

In 2001 and 2002 the Alaska Board of Game considered a proposal to establish a controlled use area along a 25-mile corridor of the Kobuk River upstream of Kobuk, Ambler, and Shungnak from the Mauneluk River to the Selby River. The Board of Game did not adopt this proposal (Braem et al. 2015). To address ongoing user conflict concerns in Unit 23, ADF&G facilitated the establishment of the Unit 23 Working Group in 2008 (Braem et al. 2015).

The Unit 23 Working Group was established in 2008 to address fall hunting related issues and to develop solutions to cooperatively solve conflict (ADF&G 2016d). It is made up of 20 members that include representatives of regional and tribal governments and organizations, land and wildlife management agencies, the Big Game Commercial Services Boards, the Alaska Professional Hunters Association



Map 2. The boundaries of the State of Alaska Noatak Controlled Use Area and the National Park Service Special Commercial Use Area in Unit 23 (Halas 2015).

(including representatives from hunting guide and transport industries), Fish and Game Advisory Committees, the Northwest Arctic Subsistence Regional Advisory Council, the Board of Game, and the Federal Subsistence Board (ADF&G 2016d).

In 2011, the Selawik National Wildlife Refuge revised its comprehensive conservation plan (CCP) to include restrictions on commercial uses in the western portion of the refuge (**Map 3**, FWS 2011). The commercial use restrictions for transporters and guides were implemented in the 2011 CCP as a means of proactively addressing user conflicts in the Selawik National Wildlife Refuge. The northwest portion of the refuge receives high subsistence use from nearby communities and is a mix of Federal public lands, Alaska Native Corporation lands, and numerous allotments. For these reasons, the refuge proposed in its CCP that certain refuge lands in this portion of the refuge not be authorized for commercial guiding and transporting. The CCP explains: “During fall hunting season, the situation in this patchwork area requires managers to take a proactive stance when permitting commercial uses to reduce conflicts among hunters and trespass on private lands. . . . Use by commercial guides and transporters for big game hunting is not authorized by permit stipulation on refuge lands in close proximity to private lands in the northwest portion of the refuge where refuge lands are intermingled in private lands.” Most, if not all, of the commercial guiding and transporting on the refuge took place in the eastern half of the refuge where a high quality hunting experience for non-FQSUs was more readily available. For this reason, commercial guides and transporters were not displaced by this action (Georgette 2016, pers. comm.).

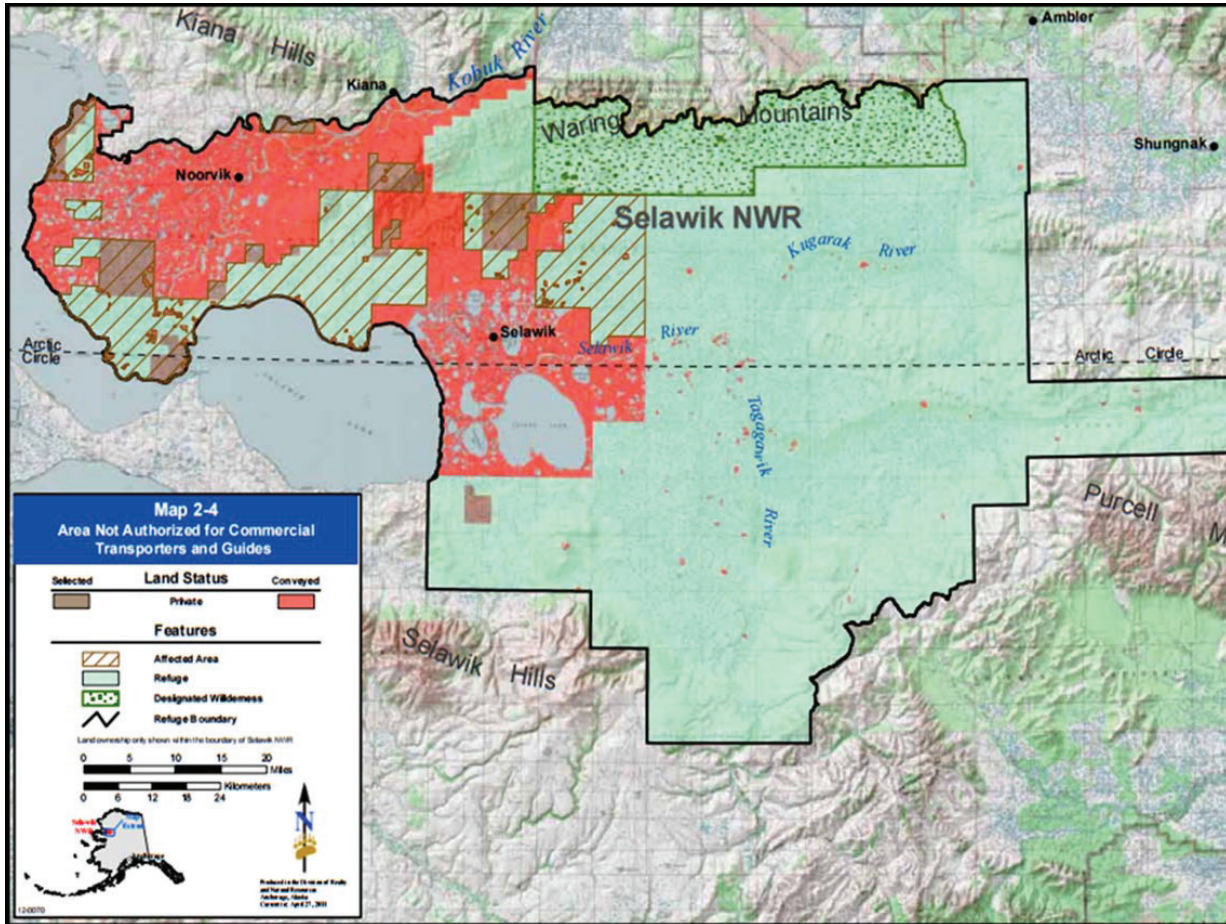
In 2012, NPS established a Special Commercial Use Area that acts as a “delayed entry zone” in the western portion of the Noatak National Preserve (**Map 2**, Fix and Ackerman 2015, Halas 2015). Within the delayed entry zone, commercial transporters can transport caribou hunters only after September 15. The purpose of this zone is to allow a sufficient number of caribou to cross the Noatak River, establish migration routes, and allow “local”<sup>1</sup> hunters the first opportunity to harvest caribou in that area (FWS 2014). Halas (2015:23) stated that “the Superintendent may consult with commercial operators, other agencies, and local villages to offer earlier or delayed caribou hunting access in the area for “nonlocal” hunters, depending on the WAH [Western Arctic Herd] migration in a given year.” To date, the superintendent has not used his/her authority to alter the dates or areas of closures to reflect changes in caribou herd migration and to meet the needs of “local” hunters.

The BLM is in the process of completing the Squirrel River Special Recreation Management Plan, which will address the allocation of Special Recreation Permits (required for guide and transport activities), and will include an analysis under Section 810 of ANILCA (Unit 23 Working Group 2016).

In March 2015, the Alaska Board of Game, in response to declines in the population of the WACH and Teshekpuk Caribou Herds (TCH), adopted Record Copy 76. This included a series of modifications to Proposal 202 that sought to prohibit the harvest of calves in Unit 23 among other changes to State regulations in various wildlife management units. The ADF&G biologist Jim Dau provided the Board of Game with a presentation on the state of the WACH and indicated that action was necessary to curb the ongoing declines (ADF&G 2015a). Among his major points were a continued population decline, a reaching or exceeding of the harvestable surplus, and continued declines in bull:cow ratios. Dau (ADF&G

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<sup>1</sup> Halas (2015) does not define this term. Presumably these hunters reside within the natural range of the WACH.



**Map 3.** The Selawik National Wildlife Refuge showing in brown cross hatch the areas not authorized for transporters and guides (FWS 2011).

2015a) also indicated the herd trajectory was toward the Preservative Management mode and that the population numbers at the time of the meeting could already warrant it. He additionally suggested that the herd could approach the “critical” harvest management level within a few years.

Dau explained the importance of Record Change 76 and the impact on area communities (ADF&G 2015a): “It [proposal 202] wouldn’t have saved many caribou; it wouldn’t have affected many people. The only teeth in this whole thing are in RC 76 and all these teeth come from these advisory committees and different groups . . . . All these villages, all these ACs [Advisory Committees] are willing to restrict themselves. As important as caribou are, they’re willing to take the hit.” Dau did not speculate as to the degree of effect that the proposed regulatory changes would have on the WACH. He did acknowledge the hard work of many groups and people in developing a series of changes that he agrees were necessary given the recent and projected decline.

In the portion of Unit 23 north of and including the Singoalik River drainage, the harvest season for bulls was shortened by Record Copy 76 from year round to Jul. 1–Oct. 14 and Feb. 1–Jun. 30, and the harvest season for cows was shortened from Jul. 1–May 15 to Jul. 15–Apr. 30. In Unit 23 remainder, the harvest season for bulls was shortened from year round to Jul. 1–Oct. 14 and Feb. 1–Jun. 30, and the harvest season

for cows was shortened from Jul. 1–May 15 to Sept. 1–Mar. 31. The harvest limit remained five caribou per day. For nonresidents of Alaska hunting in Unit 23, the harvest limit was reduced from 5 caribou per year to 1 bull per year and the harvest season was shortened from Oct. 1–Apr. 30 to Aug. 1–Sept. 30. These new State regulations were effective July 1, 2015 (ADF&G 2016a).

At its winter 2015 meeting, the North Slope Subsistence Regional Advisory Council (Council) submitted WSA15-03/04/05/06 requesting, among other things, establishment of a new hunt area for caribou in the northwest corner of Unit 23 north of and including the Singoalik River drainage. The requests were in response to the recently enacted Board of Game Record Copy 76 (originally proposed as proposal 202) and meant to enact Federal subsistence caribou conservation measures on Federal public lands across the range of the WACH that would take effect at the same time as the new State regulations. In the new hunt area, the harvest limit would be reduced from 15 caribou per day to 5 caribou per day, the harvest season for bulls would be reduced from year round to Jul. 1–Oct. 14 and Feb. 1–Jun. 30, the harvest season for cows would be reduced from Jul. 1–May 15 to Jul. 15–Apr. 30, and the take of calves would be prohibited (FWS 2016a).

The Board approved WSA15-03/04/05/06 with modification. In all of Unit 23, it reduced the Federal subsistence harvest limit to 5 caribou per day, reduced the harvest season for bulls to Jul. 1–Oct. 14 and Feb. 1–Jun. 30, reduced the harvest season for cows to Jul. 1–Mar. 31, prohibited the harvest of calves, and prohibited the harvest of cows with calves. The additional restrictions were deemed necessary to support recovery of the caribou population and because the Alaska Board of Game had recently adopted caribou hunting restrictions starting in the 2015/2016 regulatory year (described above). The Board felt that general alignment of State and Federal regulations would provide for consistency and reduce the regulatory complexity for FQSUs (FWS 2016a). The temporary modifications to existing regulations were effective July 1, 2015 until June 30, 2016.

Also at its Winter 2015 meeting, the North Slope Council submitted Proposals WP16-61/62/63/64, which closely mirrored the above wildlife special action, so that these caribou conservation measures would be enacted into regulation during the regular regulatory cycle, become effective July 1, 2016, and provide ongoing conservation measures for the WACH and TCH on Federal public lands. The Council cited ongoing concerns for the declining herd and support from communities in the region to reduce subsistence harvest in an effort to help the herd's recovery (NSRAC 2015).

At its winter 2015 meeting, the Northwest Arctic Council submitted Wildlife Proposal WP16-49 concerning Unit 23 requesting that the Board shorten the bull harvest season to Jul. 1–Oct 9 and Feb. 1–June 30, shorten the cow harvest season to Jul. 1–May 31, prohibit the harvest of cows with calves Jul. 1–Oct. 10, and reduce the harvest limit to 5 caribou per day. At its winter 2016 meeting, the Northwest Arctic Council recommended the Board adopt the proposal with modification to extend the bull harvest season end date to Oct. 31, move forward the opening date of the cow harvest season to Jul. 31, prohibit the harvest of cows with calves Jul. 31–Oct. 10, and prohibit the take of calves. The North Slope Council recommended the Board adopt the proposal with the Office of Subsistence Management (OSM) modification that would establish a new hunt area in the northwest portion of Unit 23 and change the harvest limit and seasons in Unit 23 to be consistent with State regulations to avoid confusion. The Western Interior and Seward

Peninsula Subsistence Regional Advisory Councils took no action, although residents in their regions have C&T determinations for caribou in Unit 23.

In April 2016, the Board took no action on WP16-49/52/61/62/63/64 because of action it took on WP16-37, which proposed regulatory changes in units throughout the WACH's range. The Board adopted WP16-37 with modification and, among other changes in other wildlife management units, established a new hunt area in the northwest portion of Unit 23, and adopted almost all of the Northwest Arctic Council's recommendations with minor modifications. The Council had recommended prohibiting the harvest of cows with calves Jul. 31–Oct. 10. The Board prohibited the harvest of cows with calves in the new hunt area in Unit 23 from Jul. 15 to Oct. 14 and in the remainder area of Unit 23 from Jul. 31 to Oct. 14. The new regulations were effective July 1, 2016.

At its fall 2015 meeting, the Northwest Arctic Council submitted WSA16-01 requesting that the Board close Federal public lands in Unit 23 to the harvest of caribou except by FQSUs. While many communities reported a successful caribou harvest for the year, concerns regarding the size of the herd, user conflicts, and declining opportunities to harvest were expressed. Several Council members provided testimony attesting to hardships experienced as a result of these issues, often reiterating that subsistence was about more than putting food on the table; it included deeply rooted cultural components that have been informed by intergenerational experiences tied to local landscapes. The Council approved the submission of WSA16-01 because of the uncertainty of how newly approved regulations would impact the herd, along with that State's inability to produce accurate population estimates for the year due to poor light conditions encountered during aerial surveys, and the degradation of meaningful subsistence activities due to user conflicts. Council members acknowledged that the special action would represent a one year trial, the action's effects would be subsequently evaluated, and that the special action was a tool provided to them by Title VIII ANILCA to protect subsistence uses (NWARAC 2015).

March 2016, the Northwest Arctic Council met, in Anchorage. During its meeting, members reported both positive and negative observations of fall caribou harvest and migration (NWARAC 2016). Caribou were reported to have migrated in proximity to both Noorvik and Kotzebue, enabling harvest by residents of those communities. In contrast, members reported that Kobuk did not harvest enough caribou and that there were no caribou observed in the Upper Kobuk River drainage during the winter. Several members indicated that the animals appeared healthy, but the members were concerned about the impacts of a very mild winter on the health of caribou. Some mentioned that the fall herd movements appeared to be occurring later each year. One member indicated that in his area harvest had increased relative to recent years, but the difficulty and expense of harvest remained high, user conflicts remained unresolved, and herd population numbers were unavailable and questionable.

The Northwest Arctic and North Slope Councils held a joint meeting on March 11, 2016, in Anchorage to make a recommendation on WSA16-01 and to hear agency and public comments on the special action request (NWARAC and NSRAC 2016). Both Councils recommended the Board approve WSA16-01 because caribou population estimates were flawed and recent data was lacking, harvest estimates for non-FQSUs were skewed, that FQSUs have better knowledge of local conditions than agency staff, and the Council submitted WSA16-01 to the Board for valid reasons. The State reported opposition while the

NANA Regional Corporation made a statement of support. Both Councils voted to support WSA16-01. The Seward Peninsula Subsistence Regional Advisory Council opposed the action, citing the effectiveness of the WACH Management Plan, that the special action would shift pressure to State land, and that the effect of new regulations had not yet been evaluated. The Western Interior Subsistence Regional Advisory Council abstained from voting on the matter, deferring to the Council where Unit 23 is located (the Northwest Arctic Council).

At its public meeting in April 2016, the Board approved WSA16-01, closing Federal public lands in Unit 23 to non-FQSUs for the Jul. 1, 2016 to Jun. 30, 2017 regulatory year.

The Board determined that there was sufficient evidence indicating that the closure was necessary to allow for the continuation of subsistence uses and for conservation of a healthy caribou population as mandated under ANILCA Section 815. Evidence included public testimony expressed to the Board by residents of the area, the position of two affected Councils (Northwest Arctic and North Slope), and the current status of the herd. The Board concluded that a closure to all but FQSUs was consistent with providing a subsistence priority for use of the resource and assurance that a rural preference was being provided, and recognized the cultural and social aspects of subsistence activities, which may be hampered by direct interaction between local and non-local users. The temporary change to existing regulations was effective July 1, 2016.

### **Biological Background**

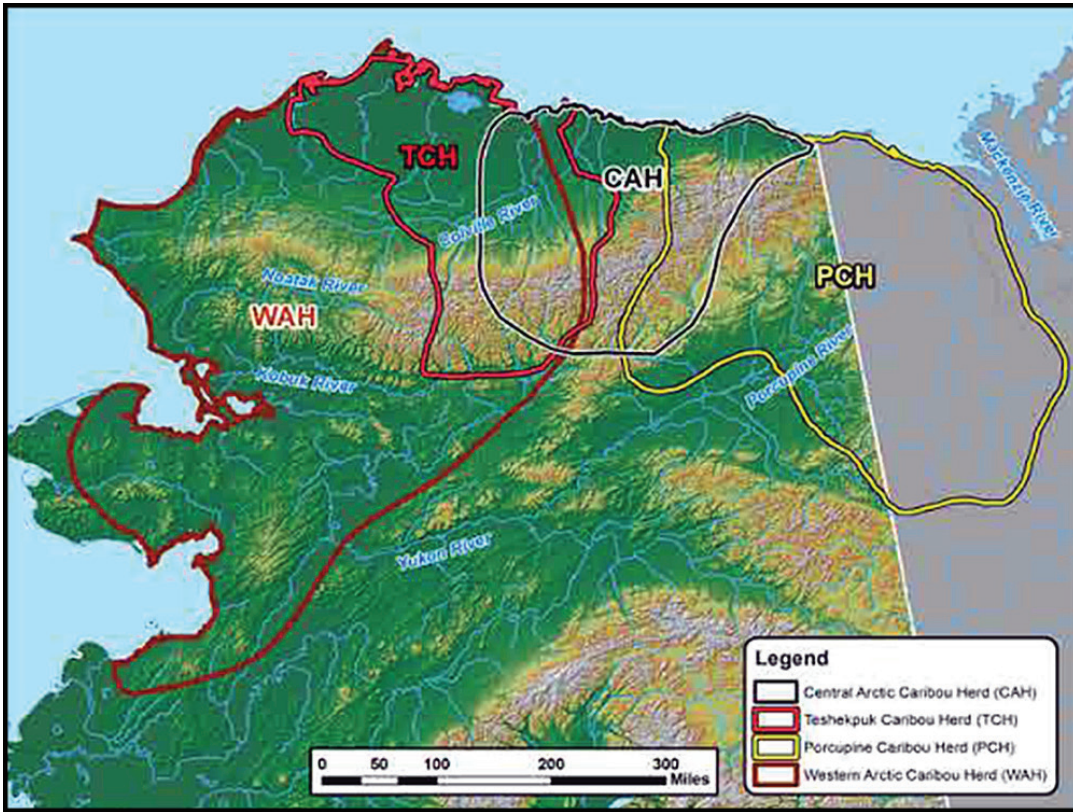
Caribou abundance naturally fluctuates over decades (Gunn 2001, WACH Working Group 2011). Gunn (2001) reports the mean doubling rate for Alaskan caribou as  $10 \pm 2.3$  years. Although the underlying mechanisms causing these fluctuations are uncertain, Gunn (2001) suggests climatic oscillations as the primary factor, exacerbated by predation and density-dependent reduction in forage availability, resulting in poorer body condition.

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).

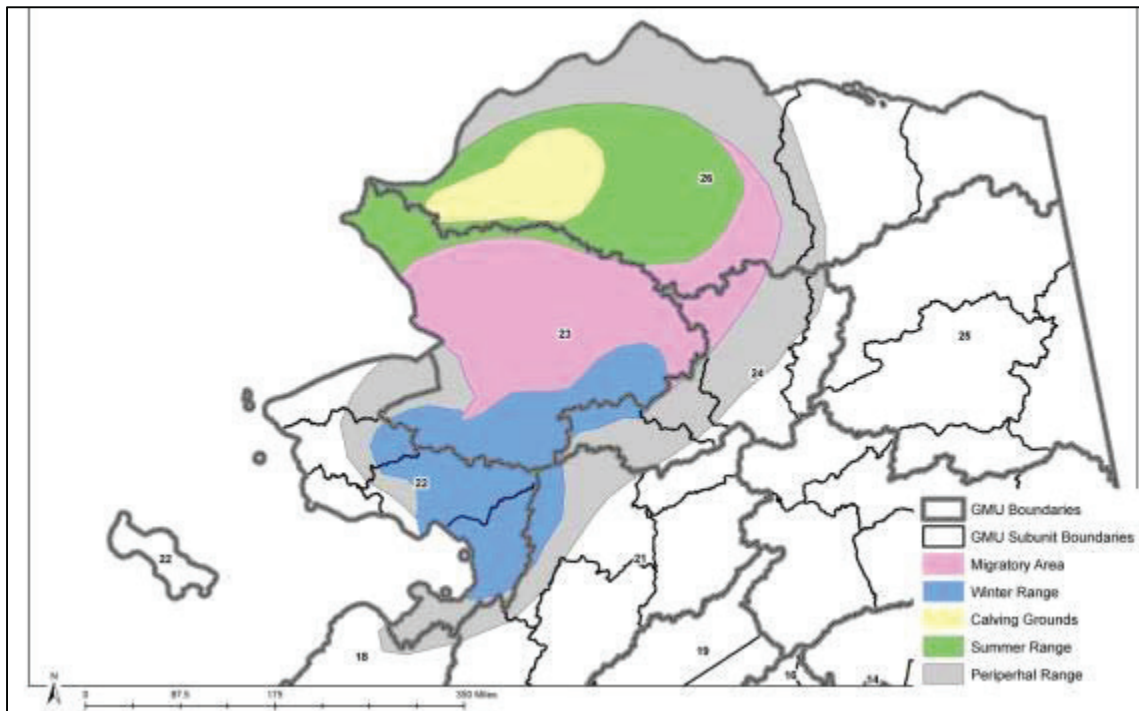
The TCH, WACH, and Central Arctic Caribou Herd have ranges that overlap in Unit 26A (**Map 4**), and there can be considerable mixing of herds during the fall and winter. During the early 2000s, the total number of caribou among the various herds wintering on the North Slope peaked at over 700,000 animals (this includes the Porcupine Caribou Herd in northeast Alaska and Northwest Territories, Canada), which may be the highest number since the 1970s. During the 1970s, there was little overlap between these four herds, but the degree of mixing seems to be increasing (Dau 2011, Lenart 2011, Parrett 2011).

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 5**, Dau 2011, WACH Working Group 2011).





Map 4. Herd overlap and ranges of the WACH, TCH, CACH, and PCH (Parrett et al. 2014).



Map 5. Range of the WACH.

Dau (2013) determined the calving dates for the WACH to be June 9–13. This is based upon long-term movement and distribution data obtained from radio-collared caribou (these are the dates cows ceased movements). After the calving period, cows and calves move west toward the Lisburne Hills where they mix with bulls and non-maternal cows. During the summer the herd moves rapidly to the Brooks Range.

In the fall, the herd moves south toward wintering grounds in the northern portion of the Nulato Hills. The caribou rut occurs during fall migration (Dau 2011, WACH Working Group 2011). Dau (2013) determined the WACH rut dates to be October 22–26. This is based on back-calculations from calving dates using a 230-day gestation period. Since about 2000, the timing of fall migration has been less predictable, often occurring later than in previous decades (Dau 2015a). In recent years (2012–2014), the path of fall migration has shifted east (Dau 2015a).

The WACH Working Group developed a WACH Cooperative Management Plan in 2003 and revised it in 2011 (WACH Working Group 2011). It identifies seven plan elements: cooperation, population management, habitat, regulations, reindeer, knowledge, and education 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). The guide was revised in December 2015 (WACH Working Group 2015, **Table 2**). The State of Alaska manages the WACH to protect the population and its habitat, provide for subsistence and other hunting opportunities on a sustained yield basis, and provide for viewing and other uses of caribou (Dau 2011). State management objectives for the WACH are the same as the goals specified in the WACH Management Plan (Dau 2011, WACH Working Group 2011) and include:

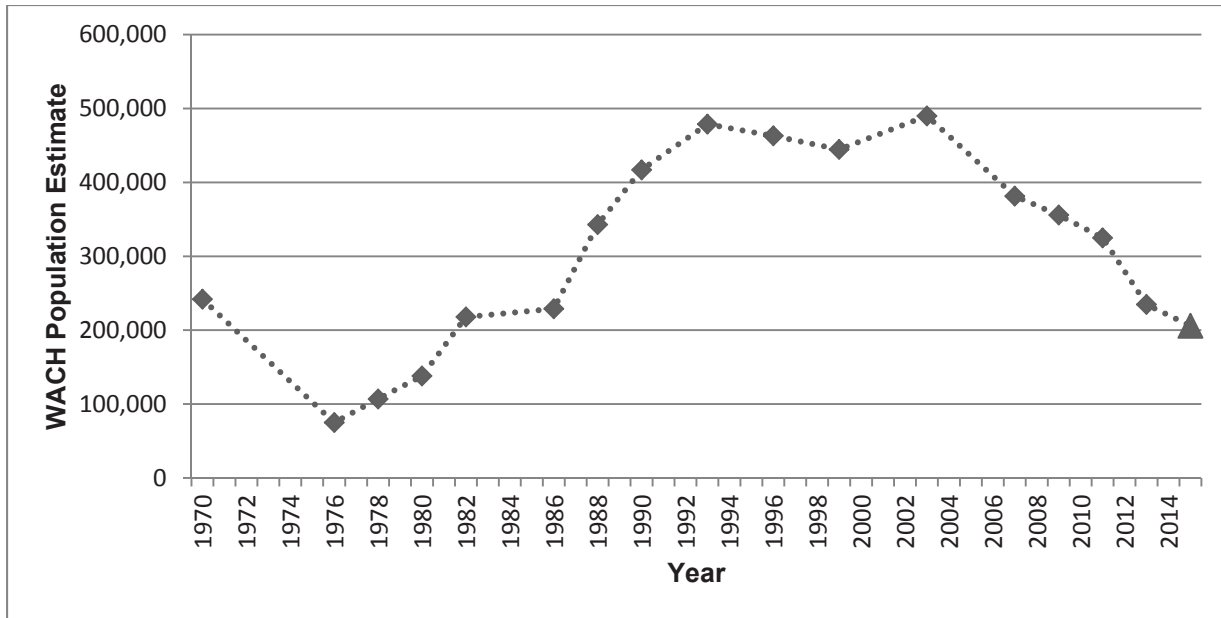
- Encourage cooperative management of the WACH among State, Federal, local entities, and all users of the herd.
- Manage for healthy populations using management strategies adapted to fluctuating population levels and trends.
- Assess and protect important habitats.
- Promote consistent and effective State and Federal regulations for the conservation of the WACH.
- Seek to minimize conflict between reindeer herders and the WACH.
- Integrate scientific information, traditional ecological knowledge of Alaska Native users, and knowledge of all users into management of the herd.
- Increase understanding and appreciation of the WACH through the use of scientific information, traditional ecological knowledge of the Alaska Native users, and knowledge of all other users.

**Table 2.** Western Arctic Caribou Herd management levels using herd size, population trend, and harvest rate adopted by the WACH Working Group in 2011 (WACH Working Group 2011, 2015).

| Management and Harvest Level                           | Population Trend <sup>a</sup> |                        |                        | Harvest Recommendations May Include:   |
|--|-------------------------------|------------------------|------------------------|--|
|  | Declining<br>Low: 6%          | Stable<br>Med: 7%      | Increasing<br>High: 8% |  |
| Liberal  | Pop: 265,000+                 | Pop: 230,000+          | Pop: 200,000+          | <ul style="list-style-type: none"> <li>• Reduce harvest of bulls by nonresidents to maintain at least 40 bulls: 100 cows</li> <li>• No restriction of bull harvest by resident hunters unless bull:cow ratios fall below 40 bulls:100 cows</li> </ul>  |
|  | Harvest: 18,550-24,850        | Harvest: 16,100-21,700 | Harvest: 16,000-21,600 |  |
| Conservative   | Pop: 200,000-265,000          | Pop: 170,000-230,000   | Pop: 150,000-200,000   | <ul style="list-style-type: none"> <li>• No harvest of calves</li> <li>• No cow harvest by nonresidents</li> <li>• Restriction of bull harvest by nonresidents</li> <li>• Limit the subsistence harvest of bulls only when necessary to maintain a minimum 40:100 bull:cow ratio</li> </ul>  |
|  | Harvest: 12,000-18,550        | Harvest: 11,900-16,100 | Harvest: 12,000-16,000 |  |
| Preservative   | Pop: 130,000-200,000          | Pop: 115,000-170,000   | Pop: 100,000-150,000   | <ul style="list-style-type: none"> <li>• No harvest of calves</li> <li>• Limit harvest of cows by resident hunters through permit hunts and/or village quotas</li> <li>• Limit the subsistence harvest of bulls to maintain at least 40 bulls:100 cows</li> <li>• Harvest restricted to residents only, according to state and federal law. Closure of some federal public lands to nonqualified users may be necessary</li> </ul> |
|  | Harvest: 8,000-12,000         | Harvest: 8,000-12,000  | Harvest: 8,000-12,000  |  |
| Critical<br>Keep Bull:Cow ratio<br>≥ 40 Bulls:100 Cows | Pop: < 130,000                | Pop: < 115,000         | Pop: < 100,000         | <ul style="list-style-type: none"> <li>• No harvest of calves</li> <li>• Highly restrict the harvest of cows through permit hunts and/or village quotas</li> <li>• Limit the subsistence harvest of bulls to maintain at least 40 bulls:100 cows</li> <li>• Harvest restricted to residents only, according to state and federal law. Closure of some federal public lands to nonqualified users may be necessary</li> </ul>       |
|  | Harvest: 6,000-8,000          | Harvest: 6,000-8,000   | Harvest: 6,000-8,000   |  |

<sup>a</sup> There are indications in a draft summary of the Working Group's December 2015 meeting that the Working Group's Technical Committee proposed changes to the table (Selawik National Wildlife Refuge 2016).

The WACH population declined rapidly in the early 1970s and bottomed out at about 75,000 animals in 1976. Aerial photo 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 1**). Since 2003, the herd has declined at an average annual rate of 7.1% from approximately 490,000 caribou in 2003 to 234,757 caribou in 2013 and a 15% annual decline between 2011 and 2013 (Caribou Trails 2014; Dau 2011, 2014).

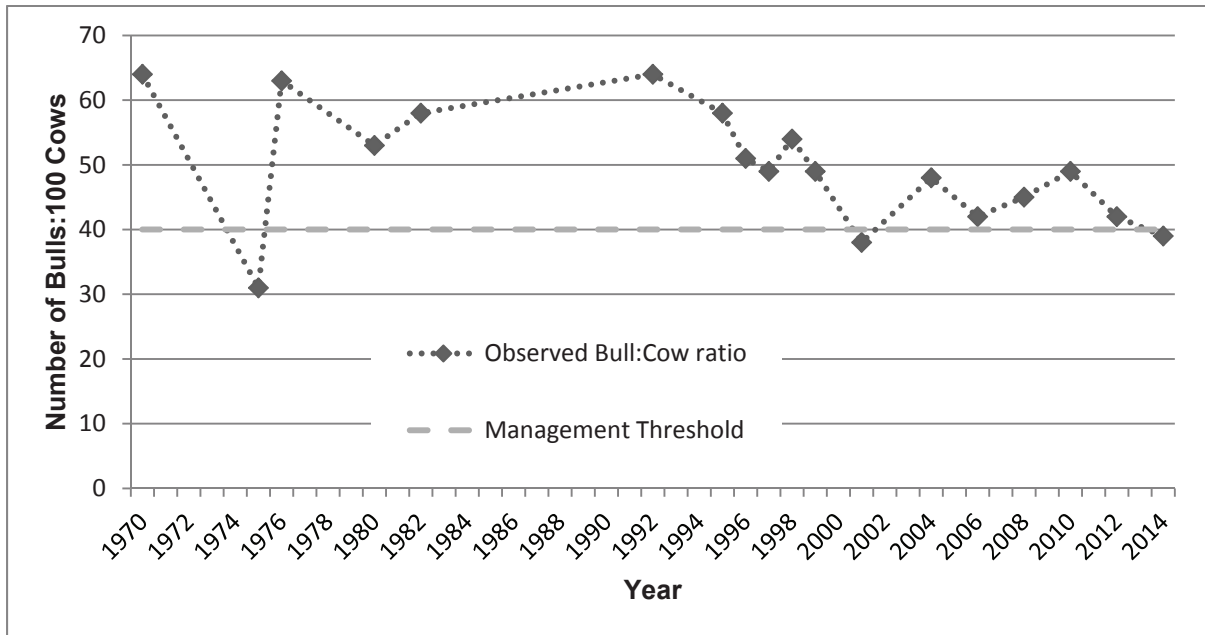


**Figure 1.** The WACH population estimates from 1970 to 2015. Population estimates from 1986 to 2015 are based on aerial photographs of groups of caribou that contained radio-collared animals (Dau 2011, 2013, 2014; Parrett 2016b).

Between 1982 and 2011, the WACH population was within the liberal management level prescribed by the WACH Working Group (**Table 2**). In 2013, the herd population estimate fell below the population threshold for liberal management of a decreasing population (265,000), slipping into the conservative management level. In July 2015, ADF&G attempted an aerial photo census of the herd. However, the photos taken could not be used due to poor light conditions that obscured unknown portions of the herd (Dau 2015b). ADF&G was able to conduct a successful photocensus of the WACH on July 1, 2016. This census resulted in a minimum count of 194,863 caribou with a point estimate of 200,928 (Standard Error = 4,295), suggesting the WACH is still within the conservative management level, although close to the threshold for preservative management (**Figure 1, Table 2**). Results of this census indicate an average annual decline of 5% per year since 2013, representing a much lower rate than the 15% annual decline between 2011 and 2013. It was also noted that the cohorts of 2015 and 2016 are large and make up a large proportion of the herd currently. Over-winter survival rates of these cohorts should assist managers with determining the potential growth rate of the WACH in coming years (Parrett 2016b). The ADF&G recommends another photocensus survey be conducted in 2017 to verify that the population has not fallen below the conservative/preservative management threshold, as outlined in the WACH Working Group Cooperative Management Plan (**Table 2**).

In its special action request, received in June 2016, the State provided a WACH preliminary population estimate of 206,000 caribou from a population model based on newly acquired population metrics, including calf survival and recruitment data (Dau 2016a, 2016b; Parrett 2015c; Parrett 2016a, pers. comm.). While the model suggests a decreased rate of decline, a downward or leveling trend is still implied. This deterministic spreadsheet model was adapted from a model used for the Mulchatna Caribou Herd and does not incorporate error for each of the population metrics (Parrett 2016a, pers. comm.). This preliminary estimate represents a decline of 12.3% since the last population estimate in 2013.

Between 1970 and 2014, the bull:cow ratio exceeded the management threshold of 40 bulls:100 cows in all years except 1975, 2001, and 2014 (**Figure 2**). Reduced sampling intensity in 2001 likely biased the 2001 bull:cow ratio low (Dau 2013). However, the low bull:cow ratio (39 bulls:100 cows) observed in 2014 is expected to continue declining (Parrett 2015b). Since 1992, annual bull:cow ratios have trended downward (Dau 2015a). The average annual number of bulls:100 cows was greater during the period of population growth (54:100 between 1976 and 2001) than during the recent period of decline (45:100

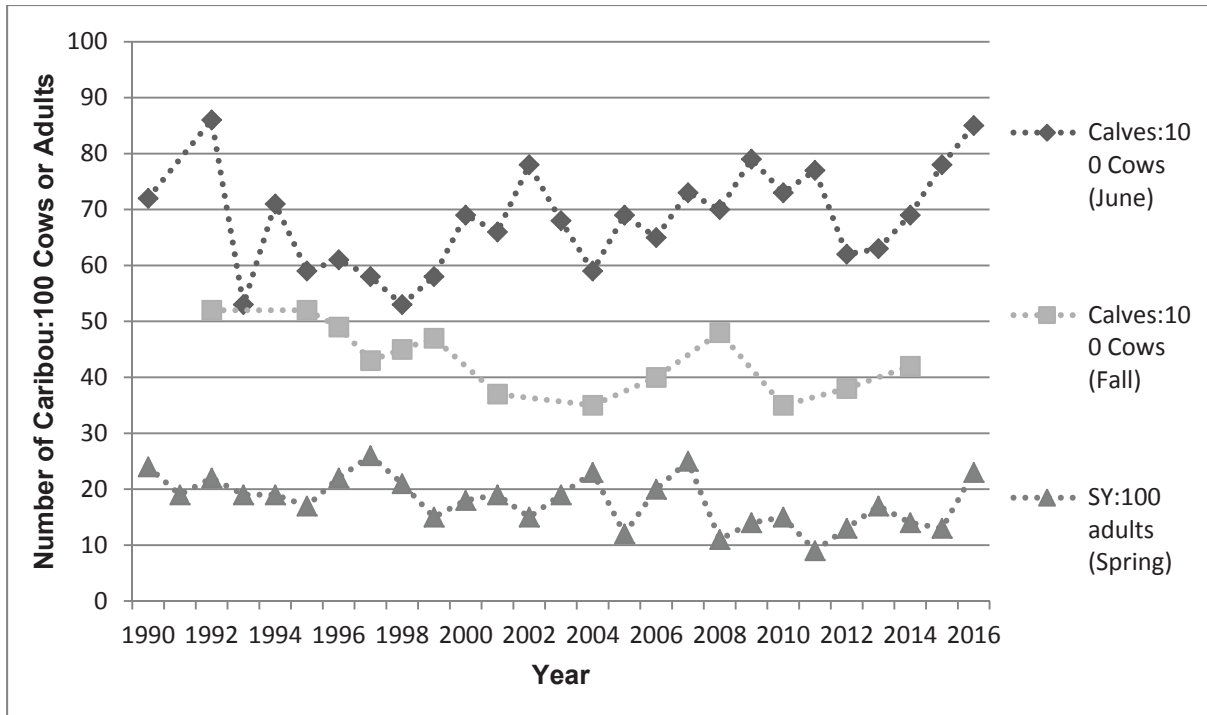


**Figure 2.** Western Arctic Caribou Herd bull:cow ratios 1970–2015 (Dau 2015a).

between 2004 and 2014). Additionally, Dau (2015a) states that while reported trends in bull:cow ratios were 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 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, **Figure 3**). In a population model developed specifically for the WACH, Prichard (2009) found adult survival to have the largest impact on population size.

Calf production has likely had little influence on the population trajectory (Dau 2013, 2015a). Between 1990 and 2003, the June calf:cow ratio averaged 66 calves:100 cows/year. Between 2004 and 2015, the June calf:cow ratio averaged 70 calves:100 cows/year (**Figure 3**). In the State’s special action request, it cited new information that included results of fieldwork conducted in June 2016 when 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).



**Figure 3.** Calf:cow and short yearling (SY):adult ratios for the Western Arctic Caribou Herd (Dau 2013, 2015a, 2016a). Short yearlings are 10–11 month old caribou.

Decreased calf survival through summer and fall and recruitment into the herd are likely contributing to the current population decline (Dau 2013, 2015a). 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 2003, SY:adult ratios averaged 20 SY:100 adults/year. Since the decline began in 2003, SY:adult ratios have averaged 16 SY:100 adults/year (2004–2015, **Figure 3**). However, 23 SY:100 adults were observed during spring 2016 surveys, the highest ratio recorded since 2007 (Dau 2016b). In its special action request, the State stated that overwinter calf survival for the 2015 cohort was currently 82%. While 2016 measures suggest improvements in recruitment, the overall trend since the early 1980s has been downward (Dau 2015a).

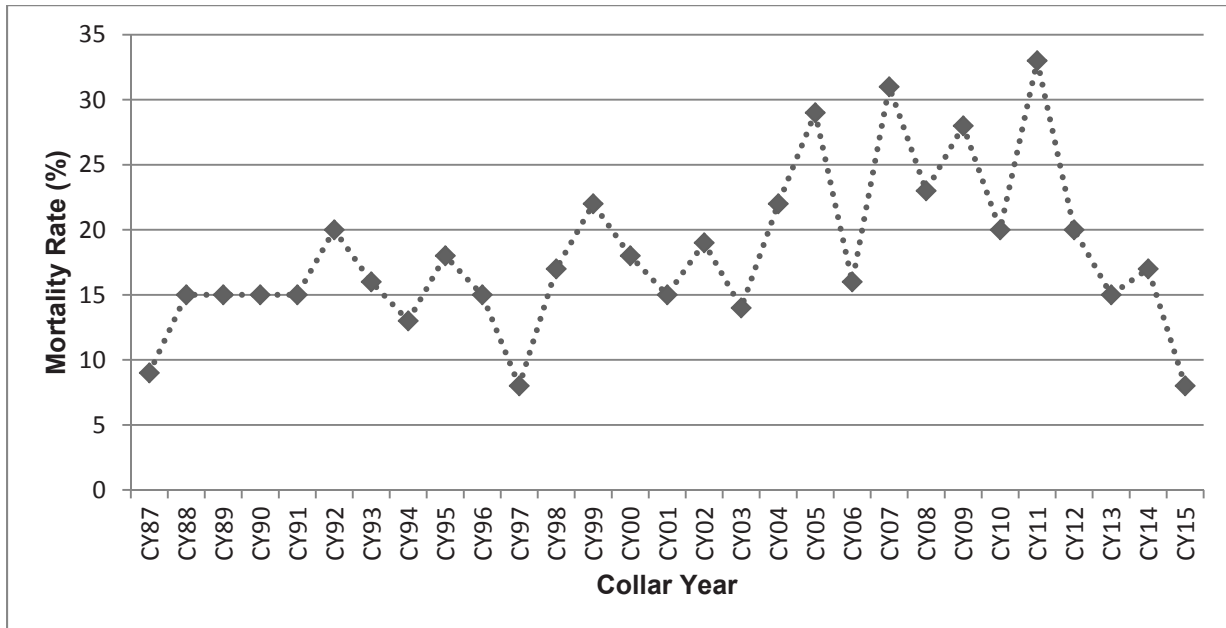
Similarly, fall calf:cow ratios indicate calf survival over summer. Between 1976 and 2014, the fall calf:cow ratio ranged from 35 to 59 calves:100 cows/year, averaging 46 calves:100 cows/year (**Table 3, Figure 3**). Fall calf:cow ratios declined from an average of 46 calves:100 cows/year between 1990 and 2003 to an average of 40 calves:100 cows/year between 2004 and 2015 (Dau 2015a, **Figure 3**). Since 2008, ADF&G has recorded calf weights at Onion Portage as an index of herd nutritional status. In the State’s special action request, it noted new information that in September 2015, calf weights averaged 100 lbs., the highest average ever recorded (Parrett 2015c).

Increased cow mortality is likely affecting the trajectory of the herd (Dau 2011, 2013). The annual mortality rate of radio-collared adult cows increased from an average of 15% between 1987 and 2003, to 23% from 2004 to 2014 (Dau 2011, 2013, 2014, 2015a, **Figure 4**). Estimated mortality includes all causes of death including hunting (Dau 2011). Dau (2015a) states that cow mortality estimates are conservative

**Table 3.** Western Arctic Caribou Herd fall composition, 1976–2014 (Dau 2011, 2013, 2014, 2015b).

| Regulatory Year | Total bulls: 100 cows <sup>a</sup> | Calves: 100 cows | Calves: 100 adults | Bulls | Cows  | Calves | Total  |
|-----------------|------------------------------------|------------------|--------------------|-------|-------|--------|--------|
| 1976/1977       | 63                                 | 52               | 32                 | 273   | 431   | 222    | 926    |
| 1980/1981       | 53                                 | 53               | 34                 | 715   | 1,354 | 711    | 2,780  |
| 1982/1983       | 58                                 | 59               | 37                 | 1,896 | 3,285 | 1,923  | 7,104  |
| 1992/1993       | 64                                 | 52               | 32                 | 1,600 | 2,498 | 1,299  | 5,397  |
| 1995/1996       | 58                                 | 52               | 33                 | 1,176 | 2,029 | 1,057  | 4,262  |
| 1996/1997       | 51                                 | 49               | 33                 | 2,621 | 5,119 | 2,525  | 10,265 |
| 1997/1998       | 49                                 | 43               | 29                 | 2,588 | 5,229 | 2,255  | 10,072 |
| 1998/1999       | 54                                 | 45               | 29                 | 2,298 | 4,231 | 1,909  | 8,438  |
| 1999/2000       | 49                                 | 47               | 31                 | 2,059 | 4,191 | 1,960  | 8,210  |
| 2001/2002       | 38                                 | 37               | 27                 | 1,117 | 2,943 | 1,095  | 5,155  |
| 2004/2005       | 48                                 | 35               | 24                 | 2,916 | 6,087 | 2,154  | 11,157 |
| 2006/2007       | 42                                 | 40               | 28                 | 1,900 | 4,501 | 1,811  | 8,212  |
| 2008/2009       | 45                                 | 48               | 33                 | 2,981 | 6,618 | 3,156  | 12,755 |
| 2010/2011       | 49                                 | 35               | 23                 | 2,419 | 4,973 | 1,735  | 9,127  |
| 2012/2013       | 42                                 | 38               | 27                 | 2,119 | 5,082 | 1,919  | 9,120  |
| 2014/2015       | 39                                 | 42               | 30                 | 2,384 | 6,082 | 2,553  | 11,019 |

<sup>a</sup> 40 bulls:100 cows is the minimum level recommended in the WACH Cooperative Management Plan (WACH Working Group 2011)



**Figure 4.** Mortality rate of radio-collared caribou in the WACH (Dau 2013, 2015a, 2016b). Collar year = Oct. 1–Sept. 30, except 2015 collar year = Oct. 2015–Apr. 2016.

due to exclusion of unhealthy (i.e., diseased) and yearling cows. Dau (2013) attributed the high mortality rate for 2011 (33%, **Figure 4**) to a winter with deep snows, which weakened caribou and enabled wolves to prey on them more easily. Prior to 2004, estimated adult cow mortality only exceeded 20% twice, but has exceeded 20% in 7 out of 9 regulatory years between 2004 and 2012 (**Figure 4**). The State's special action request included new information that the annual mortality rate was 8% as of April 2016 (Dau 2016b). This may fluctuate substantially throughout the year based on changing local conditions and harvest levels. Dau (2015a) indicates that mortality rates may also change in subsequent management reports as the fate of collared animals is determined, and that these inconsistencies are most pronounced for the previous 1–3 years.

Far more caribou died from natural causes than from hunting between 1992 and 2012. Cow mortality remained constant throughout the year. However, natural and harvest mortality for bulls spiked during the fall. Predation, particularly by wolves, accounted for the majority of the natural mortality (Dau 2013). 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 (2015a) 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 (2015a) cites fall and winter icing events as 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 2015a, 2014). Joly et al. (2007) documented a decline in lichen cover in portions of the wintering areas of the WACH. Dau (2011, 2014) reported 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. The body condition of adult females in 2015 were characterized as “fat” (mean=3.9/5) with no caribou being rated as skinny or very skinny (Parrett 2015c). 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.).

### Habitat

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 (Miller 2003).

### **Harvest History**

#### Harvest from the Western Arctic Caribou Herd

Western Arctic Herd caribou harvests by Federally qualified subsistence users (FQSU) have been estimated from community harvest surveys because Alaska residents living and hunting caribou north of the Yukon



River were not required to obtain harvest tickets or report their harvests. However, harvest surveys have not been conducted every year (**Appendix 1**). Consequently, staff at the Division of Wildlife Conservation at ADF&G developed a model that used household harvest surveys, community size, and proximity to the herd to estimate annual harvests of caribou by residents of communities situated within the range of the WACH, defined as local hunters in the following discussion (**Table 4**, Sutherland 2005). In 2014 the model had not been updated with additional community harvest data since its development in 2005, and in 2015 a new model was implemented (see Dau 2015a). Dau (2015a) indicates that the model reflects harvest trends reasonably accurately, but not annual harvest levels or harvest levels by unit. Consequently, community harvest levels and harvest by wildlife management units were not reported in Dau (2015a).

**Table 4.** Communities situated within the range of the WACH and considered local hunters in ADF&G management reports (Dau 2013).

| <b>Local Hunters of Western Arctic Caribou Herd</b>      |  |
|--|--|
| <b>Unit of Residence</b>                                 | <b>Community</b>   |
| Unit 21D west of the Koyukon and Yukon Rivers and Galena | Galena, Kaltag, Koyukuk, and Nulato.   |
| Unit 22  | Brevig Mission, Elim, Golovin, Koyuk, Nome, Saint Michael, Shaktolik, Shishmaref, Stebbins, Teller, Unalakleet, Wales, and White Mountain. |
| Unit 23  | Ambler, Buckland, Deering, Kiana, Kivalina, Kobuk, Kotzebue, Noatak, Noorvik, Point Hope, Selawik, and Shungnak.                           |
| Unit 26A   | Atkasuk, Barrow, Nuiqsut, Point Lay, and Wainwright.   |

Unlike local harvest, harvest by nonlocal hunters, who are other residents of Alaska and nonresidents, are based on harvest reports. Residents of Alaska living south of the Yukon River and all nonresidents are required to report their Unit 23 caribou harvests. Nonlocal residents of Alaska living north of the Yukon River are not required to report their Unit 23 caribou harvests but also have been unlikely to harvest from the WACH.

From 1999 to 2013, the average annual estimated harvest from the WACH was 11,984 caribou, ranging from 10,666 to 13,537 caribou/year (Dau 2015a, **Figure 5**). Harvest data do not reflect wounding loss, which may be hundreds of caribou (Dau 2015a). Available data suggests that harvest levels have been relatively stable between 1990 and 2013.

Additionally, Dau (2013, 2015a) estimates that local hunters have taken roughly 95% of the total harvest from the WACH since the late 1990s while all other hunters (nonlocal residents and nonresidents of Alaska) account for the remainder (**Figure 5**). Based on harvest reports to ADF&G, in 2012 and 2013 regulatory

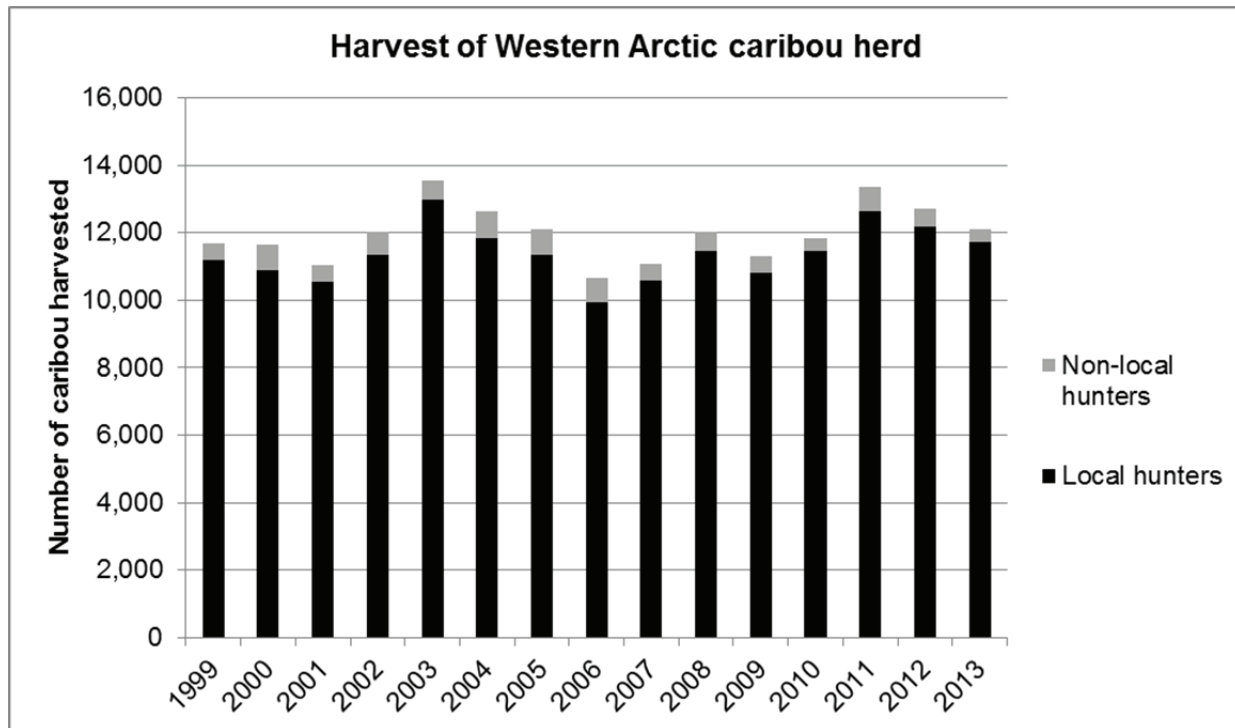


Figure 5. Western Arctic Caribou Herd harvest by residency, 1999–2013 regulatory years (Dau 2015a).

years the reported harvests from the WACH by nonlocal hunters were 520 caribou and 397 caribou, respectively. Dau (2013) described that “85–90% of all [WACH] caribou taken by nonlocal hunters are harvested August 25–October 7. This temporal concentration of nonlocal hunters in Unit 23 combined with intense subsistence hunting during the same period is why conflicts among users have occurred in the unit for many years” (Dau 2013:228).

Dau (2015a) reported that most local hunters living within the range of the WACH access harvest sites using snowmachines during late October–early May and boats or 4-wheelers during the rest of the year, with few using aircraft. In contrast, 76% of nonlocal hunters accessed hunting areas by airplane in each of the 2012 and 2013 regulatory years.

Recent WACH harvest levels are within or below the conservative harvest level (12,900–18,550 caribou) specified in the WACH Management Plan for a herd size of 200,000–265,000 caribou in population decline (see **Table 2**). However, the State manages the WACH on a sustained yield basis. The harvestable surplus of caribou is calculated at 2% of the cows and 15% of the bulls (Parrett 2015b). In recent years, as the herd population has declined, the State-determined total harvestable surplus has also declined (Dau 2015a, Parrett 2015a). In the 2015 regulatory year, the combined TCH and WACH harvestable surplus declined from an estimated 13,250 caribou in 2014 to an estimated 12,400 caribou in 2015. The harvest of caribou from the TCH and WACH combined in 2013 and 2014 was 15,063 caribou and 14,455, respectively (Dau 2015a). While there is substantial uncertainty in the harvestable surplus estimates, the overall trend is decreasing as the population declines (Parrett 2015a). If population projections and harvest estimates are accurate, overharvesting is likely already occurring (Dau 2015a, Parrett 2015b).

The WACH Management Plan recommends harvest strategies at different management and harvest levels. The harvest recommendations under conservative management may include: no harvest of calves, no cow and restricted bull harvest by nonresidents of Alaska, voluntary reduction of cow harvest by residents, and potentially limiting the subsistence bull harvest to maintain a 40:100 bull:cow ratio (WACH Working Group 2011). The recently adopted State regulations for caribou in Unit 23 that went into effect July 1, 2015 addressed the management plan's recommendations for conservative management by prohibiting the take of calves, restricting bull and cow seasons for residents and nonresidents of Alaska, and reducing the nonresident harvest limit from two caribou per year to one bull per year. New Federal regulations that went into effect July 1, 2016 mirror newly adopted State regulations. Should the WACH population decline to the extent that it falls within the preservative management level, one additional recommendation offered in the WACH Management Plan is “2) Harvest restricted to residents only, according to state and federal law. Closure of some federal lands to nonqualified users may be necessary” (WACH Working Group 2011:46-47).

#### Caribou Harvests in Unit 23 by Non-Federally Qualified Subsistence Users

Dau (2013) reported that the majority of the WACH harvest was taken from Unit 23 (66–88%, 1999–2011 regulatory years). Of the WACH harvest, residents within the range of the WACH account for 95% of the harvest on average, while all nonlocal hunters only account for 5% of the Unit 23 caribou harvest on average (**Figure 5**). In recent years (2012–2014), numbers of nonlocal hunters are slightly lower, partially because transporters have had to travel further to find caribou and thus, could not book as many clients (Dau 2015a). Examination of Appendix 1 shows that caribou harvest by community does not necessarily parallel WACH population trends (i.e. Ambler only harvested 325 caribou when the WACH population peaked in 2003, but harvested 685 caribou in 2012 when the WACH was declining). Of note is Noatak's harvest of 66 caribou in 2010, which declined substantially from a harvest of 442 caribou in 2007.

Since 1998 when data was consistently collected, the number of non-FQSU hunting caribou in Unit 23 has ranged between 248 and 663 hunters (**Table 5** and **Figure 6**). Between the 2004 and 2013 regulatory years, an annual average of 446 non-FQSUs reported hunting for caribou in Unit 23. In 2014, 408 non-FQSUs reported hunting for caribou in Unit 23. The number of hunters was somewhat steady between 1998 and 2004, peaked in 2006, and has since declined (ADF&G 2016c, FWS 2015c).

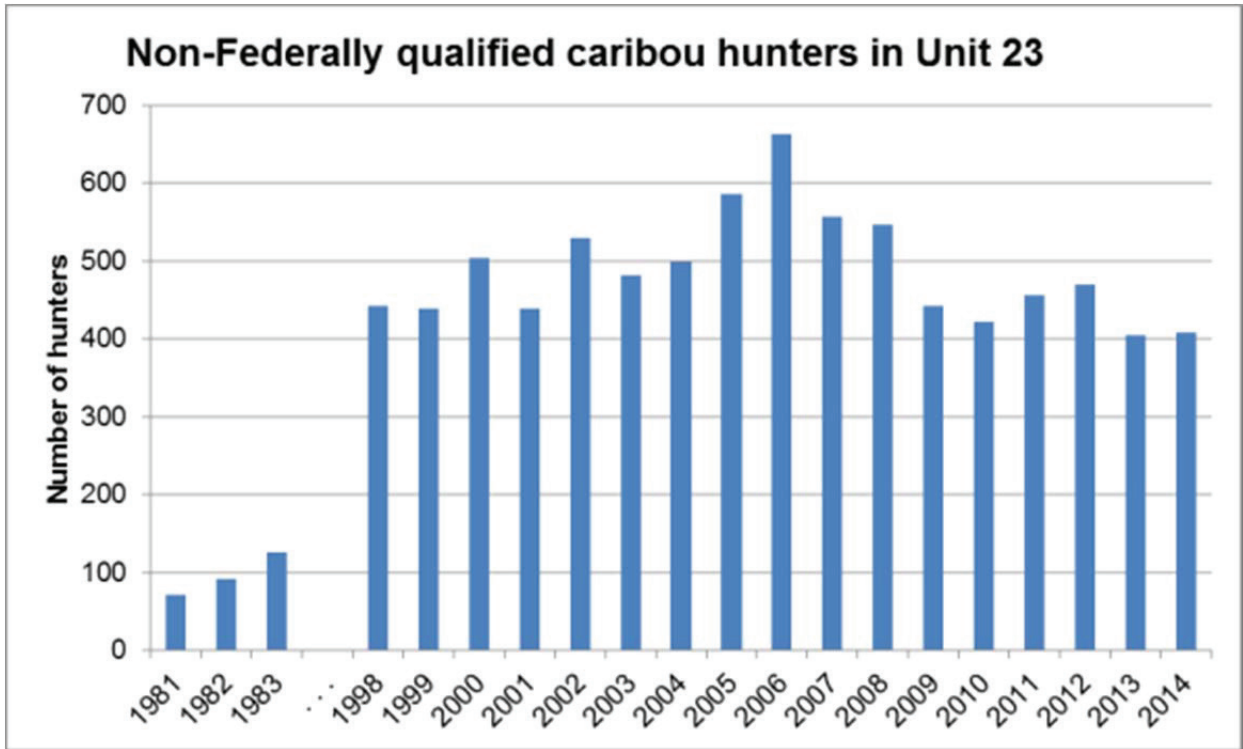
Commercially licensed guides and commercially licensed transporters assist many non-FQSUs by guiding them in the hunt or transporting them to areas to hunt for big game in Unit 23. The Selawik National Wildlife Refuge and the Noatak National Preserve are areas where Federal in-season managers have limited the participation of commercial guides and transporters (see Regulation History section, above). In Unit 23, an estimated 60% of nonlocal hunters (residing outside the range of WACH) used a transporter, 10% used a guide and about 30% used no commercial service (Unit 23 Working Group 2016). Fix and Ackerman (215:2) in a study from 2010 to 2013 found that “nonlocal” transporter clients entering the Noatak National Preserve consisted primarily of nonresidents of Alaska and residents of central and southern Alaska communities, such as Fairbanks, Anchorage, and those on the Kenai Peninsula (Fix and Ackerman 215:2). This is consistent with ADF&G caribou harvest hunting and harvest reports (ADF&G 2016c and FWS 2016c).

**Table 5.** The number of non-Federally qualified subsistence users that reported hunting for caribou in Unit 23, 1981-83 and 1998-2014, based on the ADF&G harvest reporting system. No data is available between 1983 and 1998.

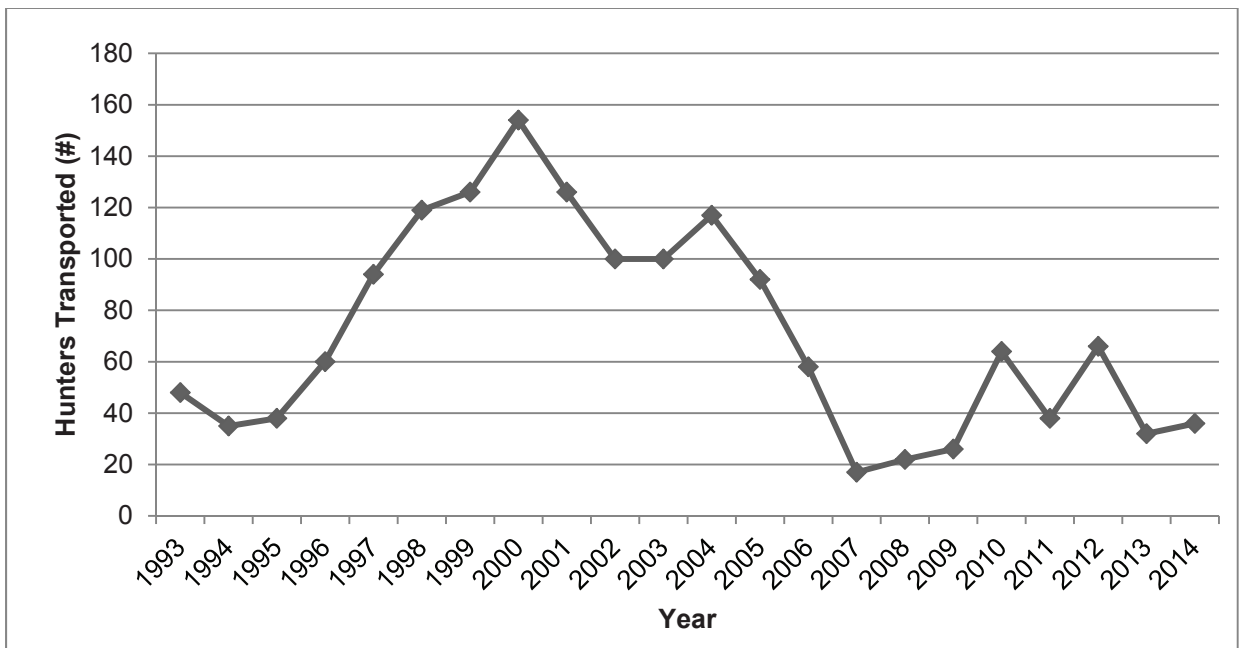
| Unit 23   |                             |   |                              |                             |
|---|-----------------------------|---|------------------------------|-----------------------------|
| Harvest of caribou by non-Federally qualified subsistence users |                             |   |                              |                             |
| Regulatory year   | Nonresidents of Alaska      | Non Federally qualified residents of Alaska | Total                        |                             |
|   | Number of caribou harvested | Number of caribou harvested                 | Number of people that hunted | Number of caribou harvested |
| 1981  | 14                          | 57  | 72                           | 71                          |
| 1982  | 7                           | 157   | 92                           | 164                         |
| 1983  | 26                          | 173   | 126                          | 199                         |
| ...   |                             |   |                              |                             |
| 1998  | 226                         | 321   | 443                          | 547                         |
| 1999  | 194                         | 201   | 438                          | 395                         |
| 2000  | 271                         | 354   | 503                          | 625                         |
| 2001  | 213                         | 186   | 438                          | 399                         |
| 2002  | 225                         | 292   | 530                          | 517                         |
| 2003  | 237                         | 291   | 482                          | 528                         |
| 2004  | 305                         | 304   | 498                          | 609                         |
| 2005  | 380                         | 283   | 585                          | 663                         |
| 2006  | 401                         | 232   | 662                          | 633                         |
| 2007  | 220                         | 240   | 557                          | 460                         |
| 2008  | 215                         | 320   | 546                          | 535                         |
| 2009  | 124                         | 266   | 443                          | 390                         |
| 2010  | 117                         | 131   | 421                          | 248                         |
| 2011  | 275                         | 394   | 456                          | 669                         |
| 2012  | 286                         | 327   | 469                          | 613                         |
| 2013  | 252                         | 234   | 404                          | 486                         |
| 2014  | 240                         | 140   | 408                          | 380                         |
| 2004-2013 average   | 258                         | 273   | 446                          | 531                         |

Source: ADF&G 2016c and FWS 2016c.

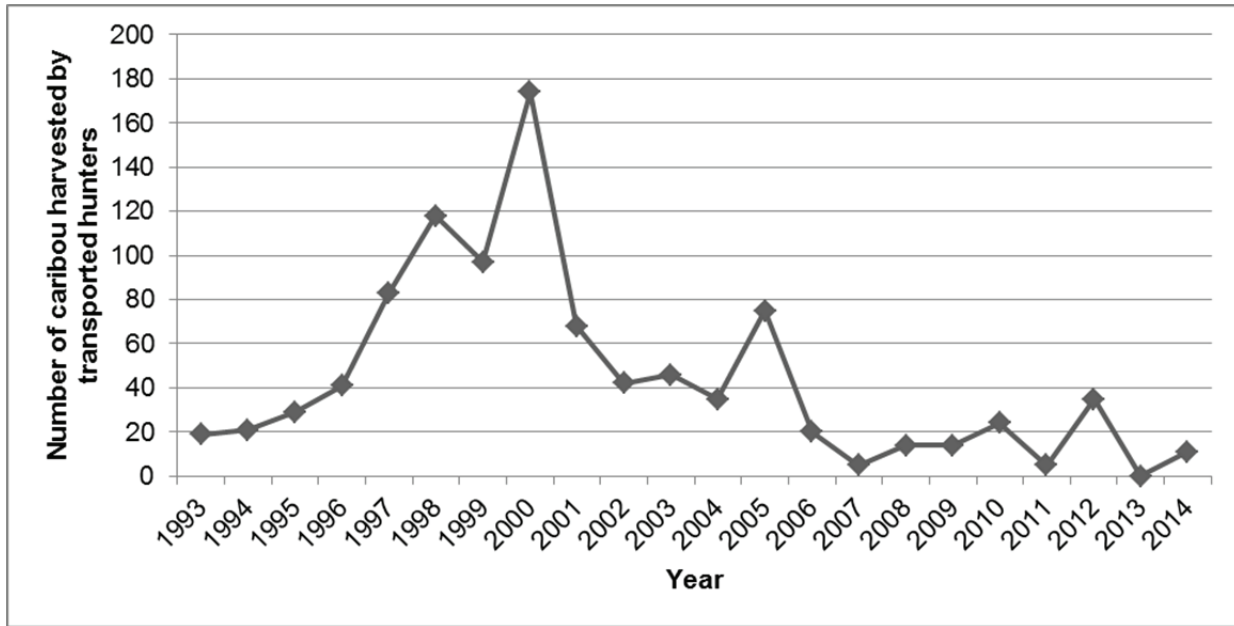
The number of commercial guides and transporters varies within different areas of Unit 23. The number of transported hunters within Selawik National Wildlife Refuge has decreased since 2000 (**Figure 7**, FWS 2016b). Between 1993 and 2014, caribou comprised, on average, 62% of big game harvested annually by transported hunters on Selawik National Wildlife Refuge lands. However, since 2000, the number of caribou harvested by this user group has decreased substantially (**Figure 8**, FWS 2016b). According to the refuge manager (Georgette 2016, pers. comm.), the harvest decline for caribou is “mainly the result of caribou no longer being reliably available on the refuge in September due to delayed migration.”



**Figure 6.** The number of non-Federally qualified subsistence users that reported hunting caribou in Unit 23 based on the ADF&G harvest reporting system. No data is available between 1983 and 1998 (ADF&G 2016c and FWS 2016c).



**Figure 7.** Number of hunters transported by aircraft transporters or using commercial guide services on Selawik National Wildlife Refuge (FWS 2016b).



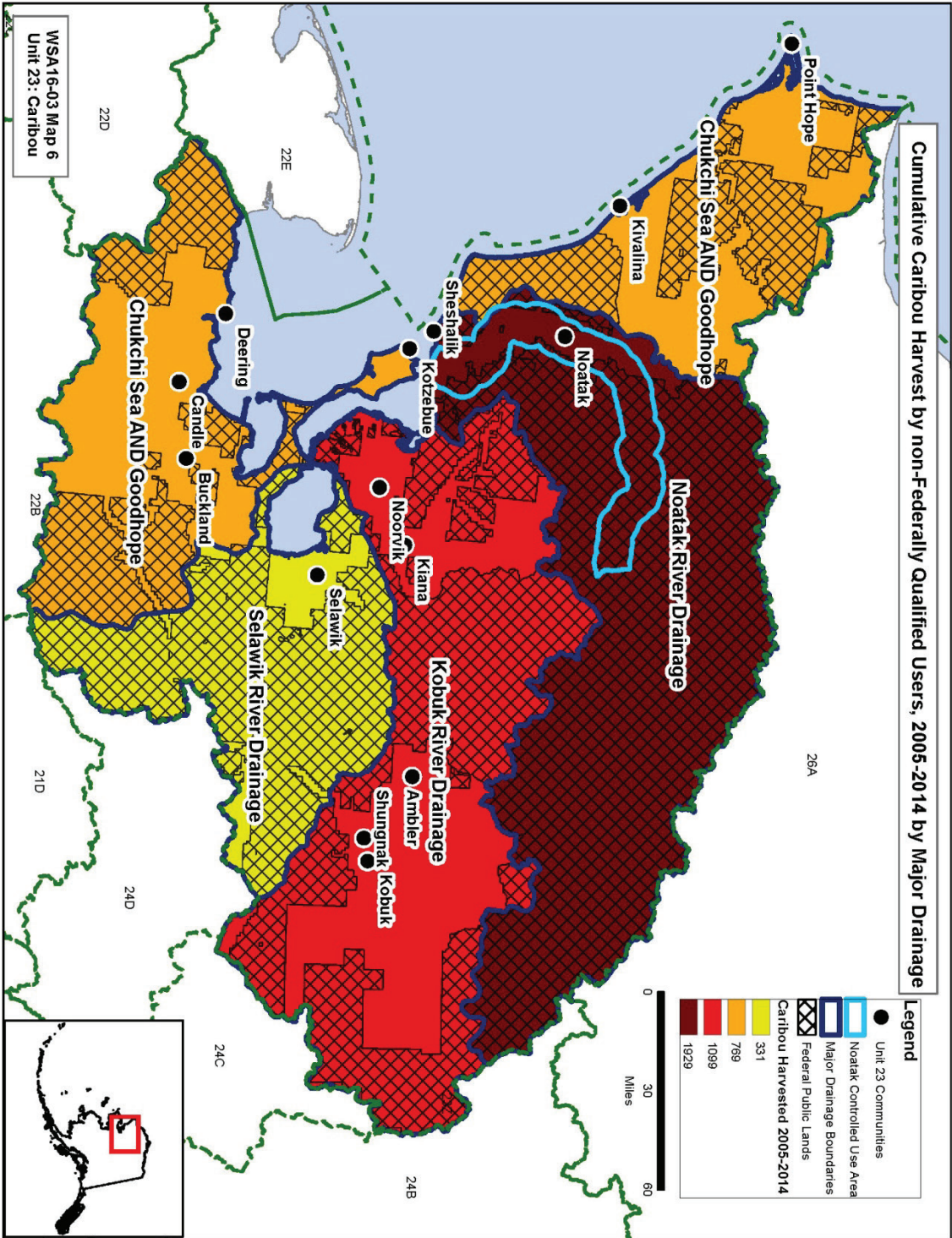
**Figure 8.** Number of caribou harvested by hunters transported by aircraft transporters or using commercial guide services on the Selawik National Wildlife Refuge (FWS 2016b).

Conversely, the number of transported hunters in the Noatak National Preserve increased from about 300 in 2010 to over 400 in 2014 (Fix and Ackerman 2015). In 2015, approximately 350 hunters (300 “nonlocal” and 50 “local” hunters) were transported into Noatak National Preserve (NPS 2016). In a survey of 372 transported hunters in the Noatak National Preserve between 2010 and 2013, 62% of groups harvested caribou with the average harvest being 1.8 caribou per group member (Fix and Ackerman 2015).

Local hunters have identified aircraft noise as an issue affecting hunting success (Betchkal 2015). During the fall 2014 hunting season, average aircraft noise events within Noatak National Preserve ranged from 3.7 events per day at Kugururok River to 7.8 events per day at Sapun Creek. It is unknown whether the difference in aircraft noise events was due to management areas (i.e., the National Park Service Special Commercial Use Area delayed entry zone or the ADF&G Noatak Controlled Use Area (see **Map 2**), or the recent easterly trend of primary caribou migration routes (Betchkal 2015). However, the recent aircraft noise levels appear comparable to aircraft noise levels documented in the Noatak National Preserve in 1987 by Georgette and Loon (1988) and 1995–1996 by Fix and Ackerman (2015). Nonetheless, comparisons should be interpreted with caution due to different methodologies (i.e., human observations v. continuous acoustic recordings and the establishment of the Noatak National Preserve’s Special Commercial Use Area and delayed entry zone in 2012 (Fix and Ackerman 2015). The ADF&G GMU 23 aircraft use education course, which is mandatory for all pilots transporting big game in Unit 23, suggests that pilots maintain a minimum altitude of 2000 feet in the vicinity of camps (Betchkal 2015).

#### Intensity of Use of Unit 23 by Non-Federally Qualified Subsistence Users

Intensity of caribou harvest and hunting activity across Unit 23 by non-FQSUs can be spatially represented given data available in harvest reports. The following map (**Map 6**) depicts the intensity of caribou harvest



Map 6. Caribou harvest by non-Federally qualified subsistence users by Major Drainage Unit, 2005-2014 cumulative.

in Unit 23 by non-FQSUs 2005–2014 cumulative, by major river drainages. The data were derived from the ADF&G harvest reporting system and may be best interpreted alongside of local knowledge held by land managers and others to increase precision in spatial interpretation of hunting and harvest intensity over time.

The data was sorted to remove FQSUs.<sup>2</sup> This resulted in 6,297 caribou harvest records of which 4,415 (70%) reported an actual harvest of a caribou. Among these records, 2,195 animals were harvested by nonresidents of Alaska and 2,220 animals were harvested by Alaska residents. The records were further parsed to include only those records for which the hunting area was identified at the major drainage scale, representing 4,128 records used to create this map. The remaining 287 harvest records (7%) occurred in unidentified locations of Unit 23.

**Map 6** provides a broad spatial view of caribou harvest by non-FQSUs in Unit 23 over a 10-year period. Intensity categories were established based on natural breaks in the harvest data. The major drainage with the greatest intensity of harvest at this level of analysis was the Noatak River drainage (1,929 caribou harvested) followed by the Kobuk River drainage (including the Squirrel River drainage) (1,099 caribou), the Chukchi Sea and Good Hope drainages (769 caribou), and the Selawik River Drainage (331 caribou). By percentage of 2005–2014 cumulative harvest, the Noatak River drainage exhibited the highest harvest in Unit 23 (47%), followed by the Kobuk River drainage (27%), Chukchi Sea and Goodhope (19%) and the Selawik River drainage (8%).

While **Map 6** depicts 10-year cumulative harvest broadly, **Map 7** depicts the harvest by minor drainage. Instead of spreading out the harvest across the larger area, this map identifies harvest intensity at smaller scales. Still, this scale may not provide the Board with the geographic precision necessary for more finely tuned management decisions on small tracks of land<sup>3</sup>; local land managers could help refine the data by doing outreach in local communities and collecting information concerning user conflicts for a more targeted closure. Of the 4,415 harvest records, 3,185 (72%) were identified to the minor drainage level. The 1,230 harvest records (28%) not identified to the minor drainage level were not included in the map. Intensity was categorized in this map by similar ranges of cumulative caribou harvest distinguished by natural breaks in the dataset.

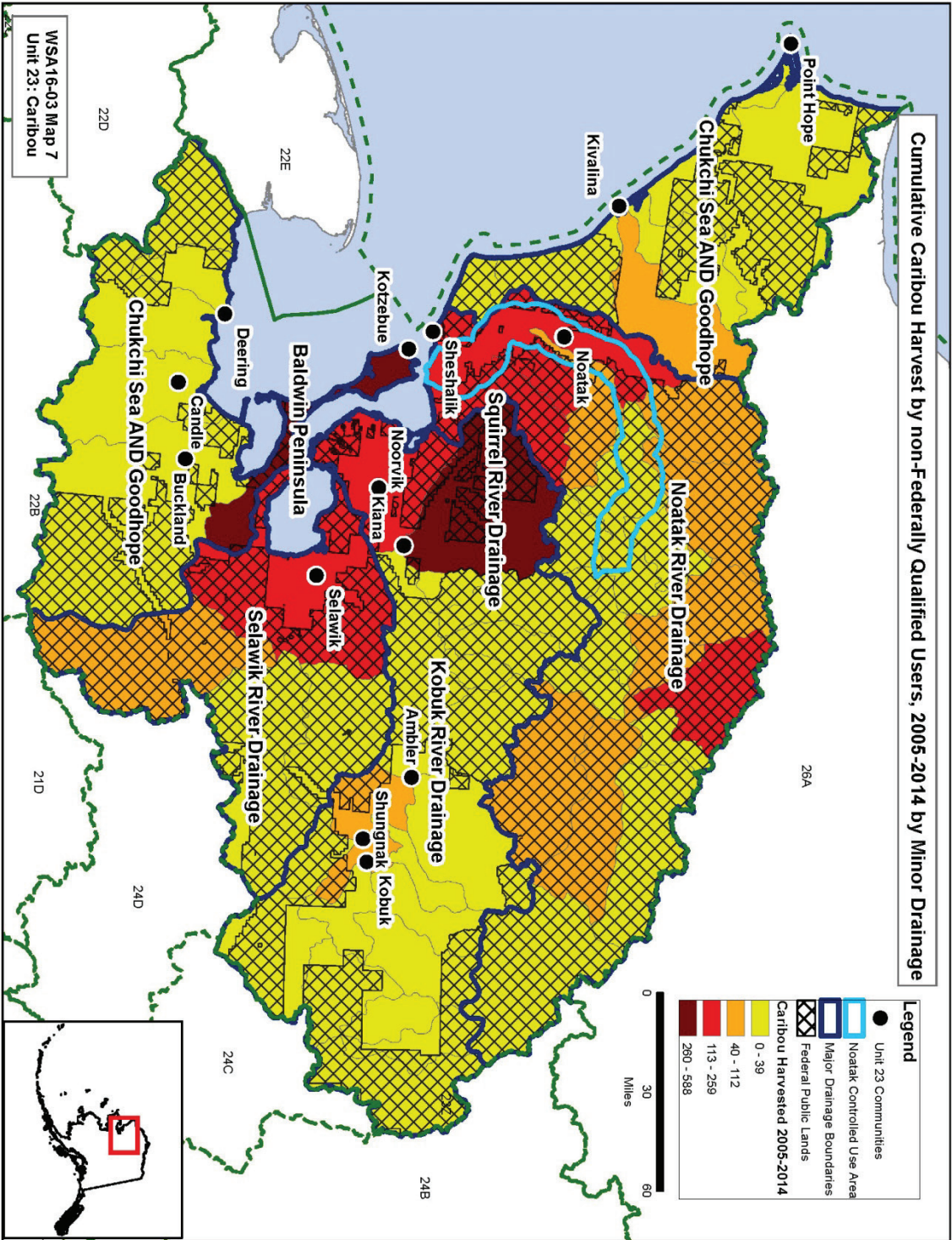
**Map 6** and **Map 7** are also overlaid with boundaries of Federal public lands. The Noatak River drainage is characterized predominantly by Federal public lands and this is also the drainage that exhibits the highest intensity of harvest at the major drainage level during the 10-year period (**Map 6**). At smaller spatial scales (minor drainages) however, the Squirrel River drainage and the Baldwin Peninsula represent the greatest harvest intensity (between 260 and 588 caribou, **Map 6**). Both of these areas are comprised of Federal public lands and State lands.

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<sup>2</sup> Seventy-five caribou harvest records were removed because residency was listed as “unknown” and were therefore not included in the map as they may have included Federally qualified subsistence users.

<sup>3</sup> Some data representing harvest and hunting activity to the Uniform Coding Unit (UCU) spatial scale is available through harvest reports but was not utilized due to confidentiality concerns and limitations associated with precision.





Several other minor drainages received moderately intensive harvest (between 113 and 259 caribou) during the 10-year period as depicted on **Map 7**. Three of the four minor drainages with moderate harvest intensity occur within the larger Noatak River drainage and include the Anisak River area, the Agashashok River area, and the Noatak River from Chukchi Sea to Kelly River area. A fourth moderate intensity harvest area is represented in the Kobuk River delta within the Kobuk River drainage.

**Map 8** represents non-FQSU hunting activity 2005–2014 cumulative by minor river drainage. The purpose of this map is to show intensity of hunting activities by minor drainage and the data include all records for which caribou were sought and not harvested as well as records from successful hunters. A total of 3,554 records are included in the map excluding 1,418 records for which hunting activity was not reported to the minor drainage level.

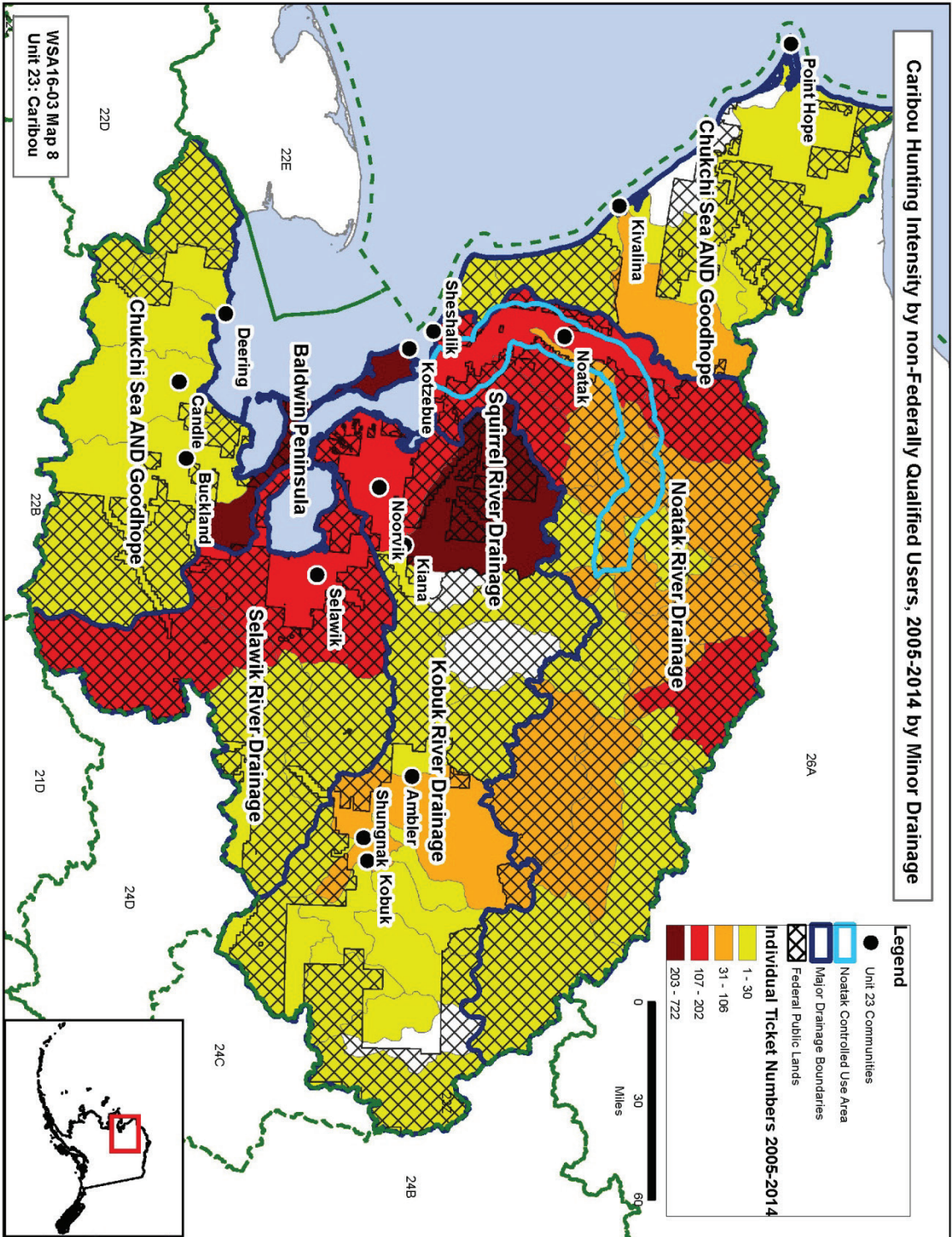
The hunting activity intensity represented in **Map 8** is similar to the caribou harvest intensity by minor drainage represented on **Map 7** with several exceptions. The minor drainages exhibiting the highest hunting activity were the Squirrel River and Baldwin Peninsula, the same drainages with the highest cumulative harvest. Moderate hunting activity was similar to harvest intensity in that it includes the Anisak River, Agashashok River, Kobuk River delta, and the Noatak River (Chukchi Sea to Kelly River), but also includes the Tagagawik River and Noatak River (Kelly River to Nimiuktuk River) drainages.<sup>4</sup>

For hunters living north of the Yukon River and hunting in Unit 23, caribou harvest tickets and reporting are not required and thus the ability to map harvest and hunt intensity by FQSUs based on the ADF&G harvest reporting system is not possible. In 2016, Satterthwaite-Phillips et al. (2016) published a report documenting subsistence harvest areas in the region. This study documented local harvest areas among 160 hunters residing in the communities of Buckland, Deering, Kivalina, Kotzebue, Noatak, Noorvik, and Selawik (referred to as local harvesters, below). The residents of these communities are FQSUs. The resultant maps were then reviewed by a local advisory group and updated accordingly to their recommendations. **Figure 9** is borrowed from this report and depicts the documented search and harvest areas for caribou by these local harvesters by season.

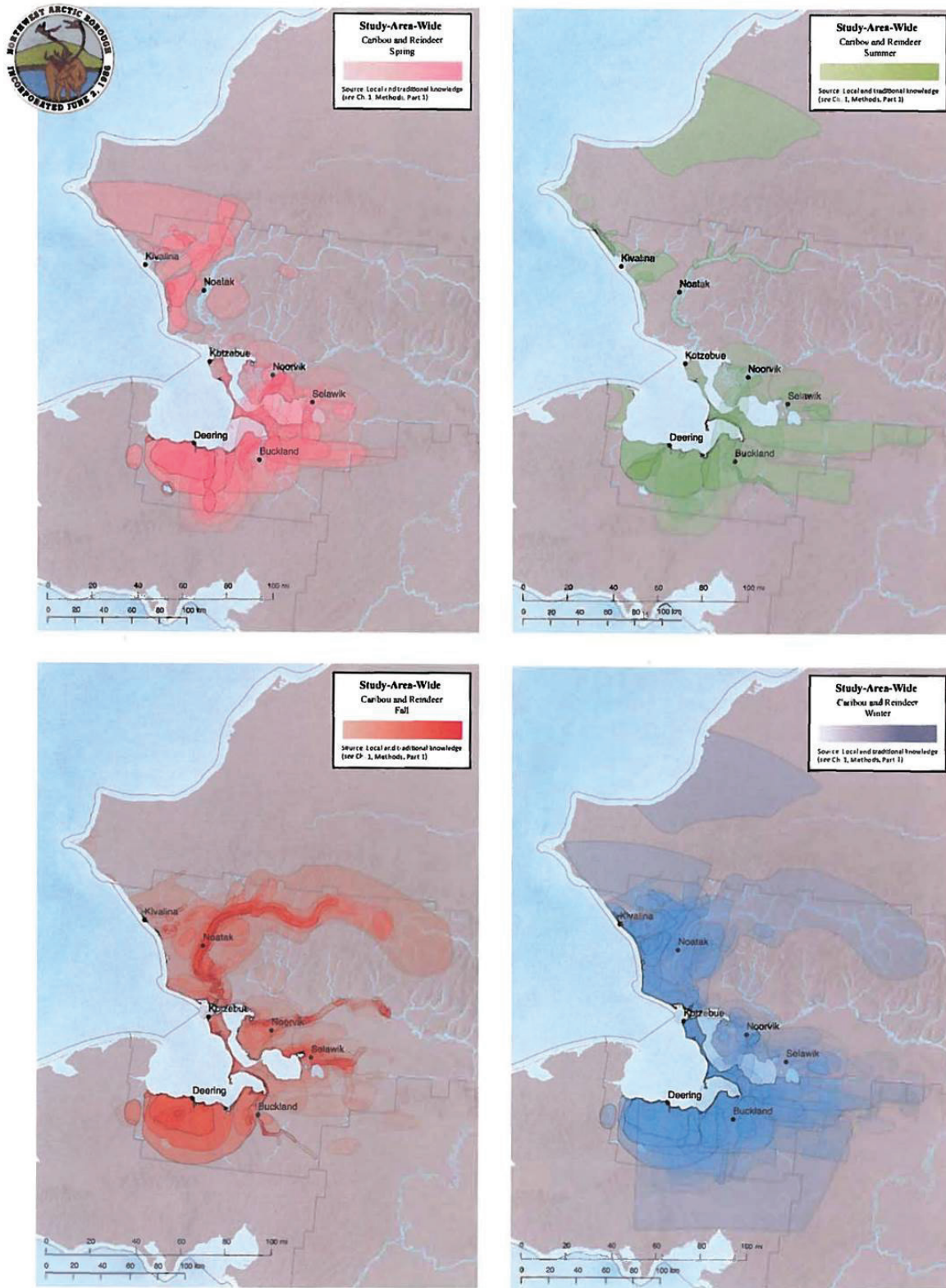
**Figure 9** can be reviewed alongside of **Maps 6, 7, and 8** to compare the spatial extent and intensity of local harvesters (residents of Buckland, Deering, Kivalina, Kotzebue, Noatak, Noorvik, and Selawik) and non-FQSUs in Unit 23. The extent and intensity of local harvester activity roughly aligns in all seasons with that of the greatest intensity of non-FQSU activity and harvest of caribou from 2005 to 2014 cumulative, especially in the vicinity of Noorvik, Selawik, Kotzebue and Noatak. Importantly, Satterthwaite-Phillips et al. (2016) did not conduct interviews with residents of Kiana, Ambler, Shungnak or Kobuk and thus the associated maps do not provide hunt and harvest area insights for those communities. For this reason, **Figure 9** may not show harvest area mapping in the vicinity of those communities even though harvest may be occurring in those areas. For example, Kiana is located at the mouth of the Squirrel River, a drainage that

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<sup>4</sup> According to the Selawik National Wildlife Refuge Manager (Georgette 2016, pers. comm), the majority of hunting activity represented along the Anisak, Tagagawik, and Kelly Rivers was likely by NFQSUs lacking familial ties to the region while those represented along the Baldwin Peninsula and Kobuk Delta were likely composed largely of Non-FQSUs that were former residents of the area or family members of local residents.



Map 8. Caribou hunting intensity by non-Federally qualified subsistence users by Minor Drainage Unit, 2005-2014 cumulative



**Figure 9.** Caribou harvest areas by season as reported by 160 hunters residing in the communities of Buckland, Deering, Kivalina, Kotzebue, Noatak, Noorvik, and Selawik (Satterthwaite-Phillips et al. 2016).

has limited harvest mapping polygons in **Figure 9**, possibly because residents of the nearest community to this drainage, Kiana, were not interviewed.

A one-year spatial snapshot of caribou search and harvest areas for residents of Ambler, Shungnak, and Kobuk is available for 2012 (Braem et al. 2015; included here in **Appendix 2**). It is important to note that this one-year harvest data is not necessarily representative of long-term harvest patterns or the spatial extent of use areas since these tend to fluctuate annually based on local environmental conditions and caribou movements. Still, the data may be helpful in understanding recent areas used by local hunters. While comprehensive subsistence harvest surveys were conducted in Kiana in 2006 (Magdanz et al. 2011), no spatial data was reported. For these reasons, data gaps continue to exist for caribou harvest patterns of Kiana residents; Kiana being the sole community within the Squirrel River watershed.

User conflicts may also arise in areas where “use” does not necessarily overlap. For example, some local hunters (“local” resident subsistence hunters) have reported concerns that sport hunters (“nonlocal” hunters dropped off by transporters) affect caribou migration patterns by deflecting herds with aircraft, hunting camps, and hunting activities (Fix and Ackerman 2015, Halas 2015). Three areas of particular concern were noted at the Northwest Arctic Council meeting in October 2015: the Squirrel River drainage, the Noatak River drainage, and the vicinity of the Baldwin Peninsula (NWARAC 2015). For 2015, the average annual density of “nonlocal” harvesters was highest in the Squirrel River area (2.92 hunters per 100 mi<sup>2</sup>), the Selawik National Wildlife Refuge (1.93 hunters per 100 mi<sup>2</sup>), and the Noatak River area (0.95 hunters per 100 mi<sup>2</sup>; Unit 23 Working Group 2016).

## **Cultural Knowledge and Traditional Practices**

### Customary and Traditional Uses

Caribou have been a primary resource for the Inupiat of the Northwest Arctic Region for thousands of years. Caribou bones dating from 8,000 to 10,000 years ago have been excavated from sites on the Kobuk River (ADF&G 1992). Foote (1959, 1961) wrote about caribou hunting in the Noatak region forty years ago, noting that life would not be possible in Noatak without this source of meat. Caribou are a major source of both food and clothing and continues today to be the most important land animal in this region (Burch 1984, 1994, 1995, ADF&G 1992). Uhl and Uhl (1979) indicated that caribou continues to be the main source of red meat for Noatak residents as well as other communities in the region. Betcher (2016) also documents the critical contemporary importance of caribou to people residing throughout the Northwest Arctic.

Traditionally, caribou were harvested any month of the year they were available in the Northwest Arctic Region. 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 Inupiat. The fall hunt was to acquire large quantities of meat to freeze for winter (Burch 1994). The timing and routing of migration determined caribou hunting. Hunting seasons change from year to year according to the availability of caribou (ADF&G 1991). The numbers of animals and the duration of their stays varies from one year to the next (Burch 1985) and harvest varies from community to community depending on the availability of caribou. Generally, communities in the southern portion of Unit 23 (Buckland, Deering) take caribou in the winter

and spring, while the other communities in Unit 23 take caribou in the fall, winter, and spring. Kivalina and Point Hope also take caribou in the summer in July (ADF&G 1992) and Selawik residents regularly hunt in the fall (Georgette 2016, pers. comm.).

Currently, caribou hunting by FQSUs in the Northwest Arctic Region is most intensive from September through November. Caribou can be harvested in large numbers, when available, and can be transported back to villages by boat before freeze-up. Hunters search for caribou and attempt to intercept them at known river crossings. Ideally, caribou harvesting occurs when the weather is cool enough to prevent spoilage of meat. If not, meat is frozen for later use. Prior to freeze-up, bulls are preferred because they are fatter than cows (Braem et al. 2015, Georgette and Loon 1993).

Small groups of caribou that have over-wintered may be taken by hunters in areas that are accessible by snowmachine. “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” (Braem et al. 2015:141). 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).

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). Burch (2012:40) notes, “The landscape of Northwest Arctic, especially in hills and mountains, is littered with the remains of drive fences that were in every stage of construction when they were abandoned.”

Beginning in the late 1800s in the Northwest Arctic, the WACH population declined rapidly. 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).

Today, the human population in Unit 23 is comprised primarily of 11 regional Inupiaq groups (Burch 1998). Kotzebue is the regional hub of transportation and commerce and is the home to the majority of non-Natives in the region. The population of Unit 23 was approximately 7,500 in 2010, according to the U.S. Census (ADOLWD 2016). Caribou dominate the subsistence harvest. In household harvest surveys conducted between 1964 and 2012, caribou were often the most harvested species, more than any other wild resource, in lbs. of edible weight. Based on these surveys, in a typical study year, the harvest of caribou was between 100 and 200 lbs. per person in northwest Alaska communities (**Appendix 1**, ADF&G 2016b).

### User Conflicts in Unit 23

User conflicts between “local” and “nonlocal” hunters have been well documented in Unit 23, specifically in the Noatak National Preserve, the Squirrel River area, and along the upper Kobuk River (Georgette and Loon 1988, Jacobson 2009, Harrington and Fix 2009 *in* Fix and Ackerman 2015, Halas 2015, NWARAC 2015, Braem et al. 2015). 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).

In March of 1988 the Traditional Council of Noatak submitted a proposal to the Board of Game to create the Noatak Controlled Use Area in an effort to restrict aircraft along a portion of the Noatak River from August 15 to September 20 (Fall 1990:86). The area was to include five miles on either side of the Noatak River, beginning on the south at the mouth of the Eli River, and extending northerly along the Noatak River to the mouth of the Nimiuktuk River, including the north side of Kivivik Creek (see **Map 2**, ADF&G 1988:47). Included within their proposal was the following justification (Fall 1990:86, ADF&G 1988:47):

In the Noatak valley, aircraft supported hunters are directly competing with, and displacing subsistence hunters from traditional hunting sites along the Noatak River. The village most affected is Noatak, although families from Kotzebue are also affected. These families are having a great deal of difficulty obtaining their fall meat supply due to heavy aircraft traffic, rude aircraft operators, and displacement from traditional camping and hunting sites.

Aircraft operators have the opportunity to use many other areas than the main Noatak valley, in the vicinity of traditional hunting areas. Good management practices indicate that the two groups of users should be separated.

Experienced hunters from the village of Noatak point out that heavy aircraft traffic in the Noatak valley causes disruption of the fall caribou migration. The caribou are particularly sensitive near river crossings, which is stressful for the animals. Experience and good judgment is required to avoid disruption of the caribou migration. The village hunters’ experience with aircraft supported hunters has been poor. The aircraft supported hunter; lack of experience and commercial interests has led to abuse of the resource. Noatak hunters point out that the normal migration routes of caribou through the Noatak valley in the fall have changed over the last several years of heavy aircraft use. Village hunters have noticed increased levels of waste of caribou and moose by aircraft supported hunters.

In response to the proposal, the Division of Subsistence conducted a study in which they interviewed hunters from 21 caribou hunting households in Noatak, 22 private pilots from Kotzebue, 10 Kotzebue-based air taxi services, two hunting guides, and the Federal Aviation Administration in Kotzebue (Fall 1990:86). This study found that fall caribou hunting in the proposed area was a traditional and meaningful activity for Noatak, that the major source of air traffic in 1987 was from commercial air taxi operators, and that respondents tended to agree that air traffic significantly increased in the 1980s (Fall 1990, Georgette and Loon 1988).

When the Board of Game deliberated on the proposal, members indicated that they were not convinced that aircraft were disrupting subsistence caribou hunting but acknowledged an increase in outfitter operations along the Noatak River (Fall 1990:87). Fall (1990:87) suggests that because the Board of Game failed to support two similar proposals from Noatak previously, and because the current proposal had the support of both the Kotzebue Fish and Game Advisory Council and the Arctic Fish and Game Regional Council, there was pressure on the Board of Game to be responsive to the issue. The Board of Game amended the proposal to include approximately one third of the proposed land area representing locations where most subsistence hunting took place and where caribou were most vulnerable to aircraft; they then accepted the proposal unanimously (Fall 1990:87). In 1994 another amended proposal was passed by the Board of Game which roughly doubled the size of the Controlled Use Area.

The Board of Game actions in 1988 and 1994 did not fully alleviate user conflicts along the Noatak River as local users continued to report similar observations in subsequent decades. As recently as 2014 Noatak residents have been voicing their concerns on this issue. In a 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 transporters (Halas 2015). Negative encounters between “local” and “nonlocal” hunters identified by respondents primarily focused on river crossings of migrating caribou (see **Map 9**, Halas 2015).

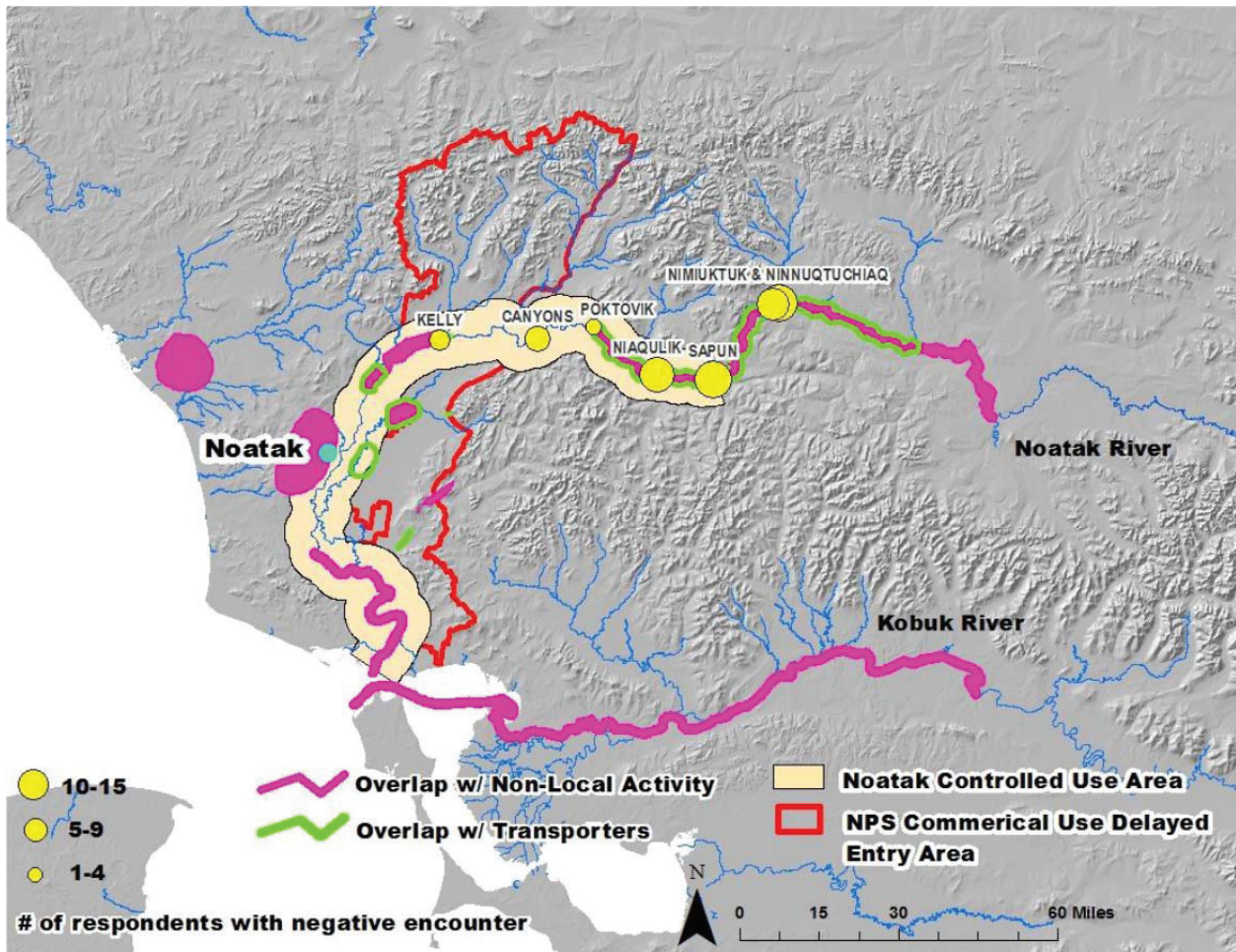
A survey of 384 hunters identified as transporter clients in Noatak National Preserve hunting between 2010 and 2013 indicated perceptions of conflict among this group differed from those expressed by “local” hunters (Fix and Ackerman 2015). Less than half of the transporter clients interviewed reported receiving information about issues of concern to “local” hunters. They did indicate that wilderness characteristics were important to them and that the quality of their experience was sensitive to encounters with others. Among encounter types in which the frequency exceeded hunter expectations were propeller planes (30% of respondents), other nonlocal hunters (27%), and hunting camps visible while hunting (25%, Fix and Ackerman 2015). About half of respondents reported observations of low flying aircraft near caribou; among only those that encountered caribou. Sixty percent of respondents who reported encountering caribou also reported observing low flying aircraft near the animals.

Concerns regarding the apparent lack of recent caribou population data, ongoing user conflicts and potential herd deflection by aircraft were discussed at length during the Northwest Arctic Council meeting in October 2015. While some Council members reported caribou harvest success for the year, many also reported ongoing concerns for herd deflection near the Squirrel and Agashashok Rivers in Unit 23, as well as concern for residents of Anaktuvuk Pass in Unit 24 who have been reporting an absence of animals from both the WACH and the TCH.

Halas (2015; **Map 9**), in her case study of Noatak caribou hunters and their interactions with transported hunters, examined the links between caribou behavior and migration, user group interactions, and changes to subsistence caribou hunting. In describing observations by Noatak hunters in 2012 and 2014 she explained that,



Observations of caribou behavior (“spooked” caribou, deflected caribou groups from river crossings) due to aircraft are likely witnessed as a dramatic event not easily forgotten by a waiting Noatak hunter. Whether the aircraft intentionally or unintentionally may be “influencing” caribou movement, observing “scared” caribou can be a powerful experience for hunters (Halas 2015:81).



**Map 9.** Areas of overlap use between 19 Noatak interview respondents and “nonlocal users.” Green lines and polygons delineate overlap areas with observed transporters. Notes: Pink lines and polygons are nonlocal users observed in the area that overlapped with local hunters. Yellow circles represent the number of respondents who had a negative encounter with “nonlocals” in specified locations. Respondents could identify more than one location (Halas 2015).

“Local” hunters’ observations of airplanes affecting individual or group caribou behavior have been documented, and cumulative observations of this over time could naturally lead an observer to conclusions about herd deflection (Halas 2015). Several studies have also documented negative caribou responses and avoidance behavior toward aircraft, motorized equipment, and development (e.g., Valkenburg and Davis 1983, Wolfe et al. 2000, Vistnes and Nelleman 2007, Calef et al. 1976, Maier et al. 1998). Valkenburg and

Davis (1983) specifically studied the reaction of the WACH to aircraft and compared this with their observations of the Delta Caribou Herd (DCH). They found that aircraft overflights cause WACH caribou to flee more often and to continue running more than DCH animals. Calef et al. (1976) observed panic reactions and strong escape responses in a high percentage caribou, particularly when aircraft flew at altitudes of less than 60 meters. These authors also found that caribou response to small fixed-wing and helicopter overflights was strongest during early calving (late May to early June), post-calving (early June to late June), and winter (Calef et al. 1976).

Valkenburg and Davis (1983) speculated that the higher intensity of WACH response to aircraft was due to insufficient exposure to non-detrimental aircraft activity (those not resulting in immediate hunting activities), the perception of aircraft as a threat, and the association of snowmachine noise with pursuit and a lack of differentiation with the noise of aircraft (Valkenburg and Davis 1983). They observed that WACH caribou ran from 82% of aircraft passes (compared to 35% of passes for DCH animals), and that escaping WACH caribou were more likely to continue running after the aircraft had passed as compared to DCH animals. These authors hypothesized that a greater number of benign or nonthreatening overflights may be necessary to habituate WACH animals and that same-day hunting upon landing had exacerbated the situation (Valkenburg and Davis 1983). In comparison, DCH caribou occurred in areas where much of the aircraft and ground vehicle activity was nonthreatening (Valkenburg and Davis 1983).

Avoidance behavior of caribou to human activity and development has also been documented to have other behavioral and physiological impacts. Some studies have shown that energy costs associated with repeated disturbance (including overflights) may decrease caribou reproduction rates (Luick et al. 1996, Bradshaw et al. 1998, Maier et al. 1998) and calf survival rates (Huntington and Veitch 1992). Studies have also reported reduction in the use of areas within 5 km from infrastructure and human activity (including aircraft) by 50–95% for weeks, months, or years (Vistnes and Nelleman 2007, Flydal et al. 2002).

Dau (2015a) reports that since the early 1980s, perceptions surrounding guides and transporters placing large numbers of nonlocal hunters (living outside of the range of the WACH) in fall caribou migration corridors and deflecting the herds from traditional hunting areas has been an issue of concern for local hunters (living within the range of the WACH) (see Braem 2015 et al. 2015, Dau 2015a:34, Unit 23 Working Group 2016). In addition, 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 2015a:31). While hunt timing often aligns among these user groups, methods of access do not. Most local hunters harvest 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 2015a: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.

In recognition of these use conflicts in the area of the lower Noatak River, the Alaska Board of Game expanded the extent and duration of the Noatak Controlled Use Area in 1994 and has since created a mandatory Unit 23 pilot orientation, developed and distributed outreach materials, and established conflict planning processes (see **Map 2**, Dau 2015a). Recently, the Noatak/Kivalina and Kotzebue Sound Fish and Game Advisory Committees submitted two proposals to the Alaska Board of Game to consider at its

meeting in January 2017 (Unit 23 Working Group 2016). These proposals would extend the boundaries of the Noatak Controlled Use Area to the Cutler River, close the Controlled Use Area from August 15 to September 30 to the use of aircraft in any manner for big game hunting (except between publicly owned airports), and require that big game hunting camps be spaced at least three miles apart in the Controlled Use Area and along the Agashashok (Aggie), Eli, and Squirrel Rivers (Unit 23 Working Group 2016).

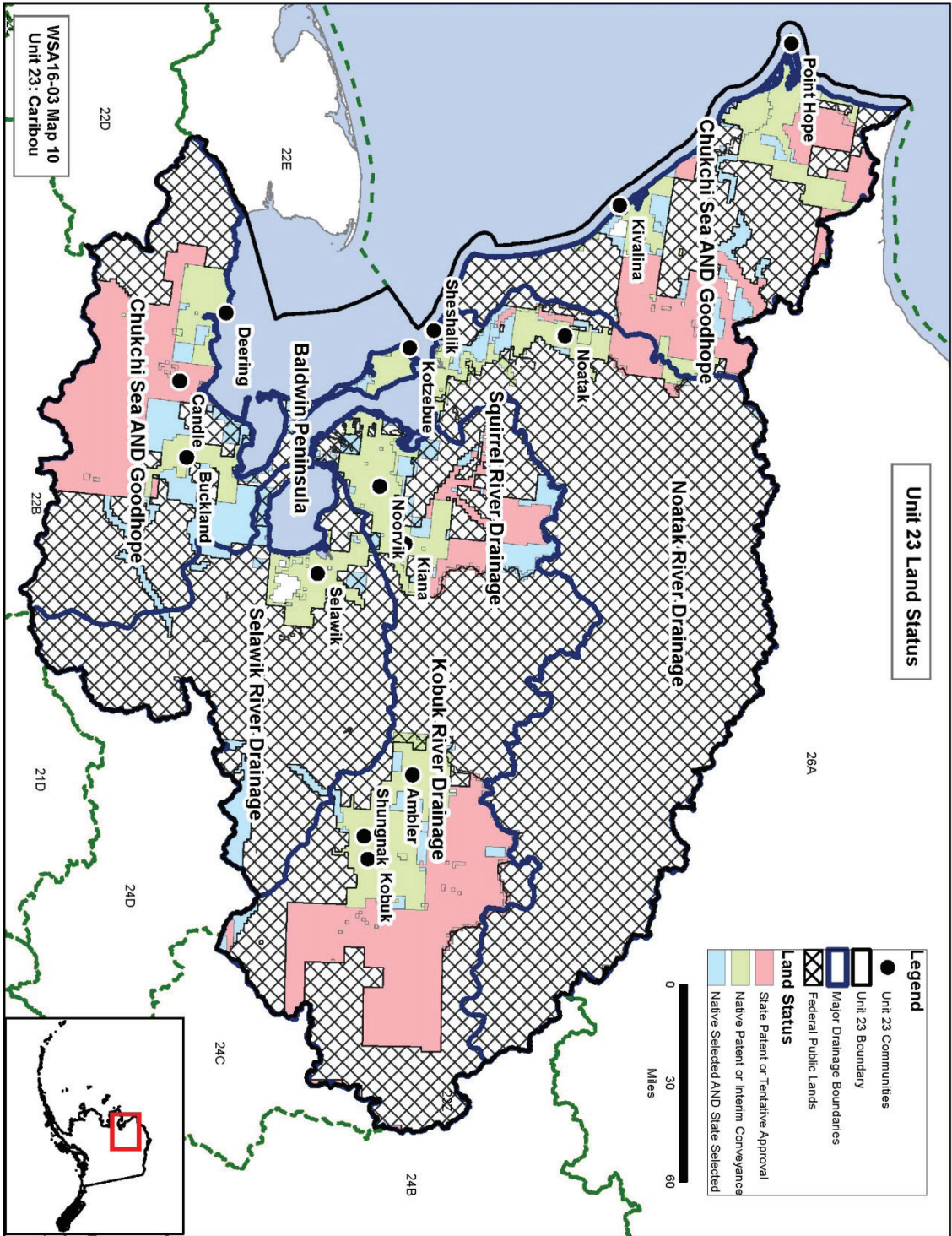
In 2012, the National Park Service began prohibiting transporters from dropping caribou hunters in the Kelly, Kugutuk and lower Agashashok river drainages before September 15 of each year (see **Map 2**). This Special Commercial Use Area may have limited effect on the numbers and distribution of “nonlocal” caribou hunters that are transporter clients due to the fact that fewer caribou have been migrating through the affected area since 2011 and transporters generally dropped their clients east of the closed area (Dau 2015a). In addition, the rule applies only to transporters with caribou hunting clients and not to those transporting hunters of other species, fishers, and recreational users. Furthermore, the rule does not apply to personal aircraft that are commonly used for transportation by non-FQSUs to and from the region. Information is not readily available on difference in the degree of impact to caribou by aircraft transporting caribou hunters compared to those flying for other purposes.

Another area of intense user conflict was identified in the eastern portion of Unit 23 along a 25-mile Kobuk River corridor located upstream of Kobuk, Ambler, and Shungnak, from the Mauneluk River to the Selby River (Braem et al. 2015). Much of this area is managed by the State and is among the most accessible areas in the entire drainage for “nonlocal” hunters (see **Map 10**; Braem et al. 2015). In 2001 and 2002, proposals were submitted to the Board of Game to create a controlled use corridor in this area but they were not adopted (Braem et al. 2015). This area may be of particular importance in considering potential shifts in land use due to the closure of Federal public lands to non-FQSUs of caribou in 2016.

Regarding caribou deflection and diversion, the State has suggested that incomplete camp location information has prevented a quantitative assessment of caribou deflection or displacement associated with commercial operators and their hunting clients in the unit (Dau 2015a). The State contends that commercial operations in other areas have not led to herd deflection and displacement (Dau 2015a:14-20): “Despite virtually complete saturation of access points in the Anisak drainage by transporters each year during 2009–2015, caribou from the WACH migrated through this area during each successive year, and in no year did caribou divert away from the Anisak drainage despite persistent hunting and transporter activities.”

Regardless of the causes, the fall migration of WACH failed to follow historic spatial and temporal trends in 2012, 2013, and 2014 (Dau 2015a). In these years, relatively few WACH caribou migrated through the western portion of Unit 23 and instead heavily utilized a narrow east-west corridor through Ivishak Pass to the Purcell Mountains and Nulato Hills (Dau 2015a). This created difficulty for hunters from Noatak, Kivalina, and Kotzebue. As a unit, local WACH harvest has been relatively stable 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 2015a:14-30). This is due in part to having to travel farther, more frequently, and for longer durations to find caribou (Halas 2015). In addition, many have had to switch from taking bulls to cows because of temporal shifts in access. According to Dau (2015a), some communities such as Unalakleet and Noatak have “not met their subsistence needs in many recent years” (Dau

Map 10. Land status within Unit 23 as per data obtained from the Bureau of Land Management on July 27, 2016.



2015a:14-30). This was also expressed by the Northwest Arctic Council members during their meetings in October 2015 and March 2016 (NWARAC 2015, NWARAC and NSRAC 2016).

Northwest Arctic Council members reported ongoing concerns about extensive user conflicts in Unit 23 (NWARAC 2015). Council members have testified that these conflicts were confounding their ability to successfully harvest caribou for subsistence purposes in some areas, and also that these conflicts were causing degradation to their subsistence lifestyle through landscape modifications (e.g., discarded or abandoned structures and trash; landing strips; ATV trails), herd diversion and positioning (e.g., pushing or scaring with low-flying aircraft for hunting, sightseeing, photography and other purposes; creating camp structures ahead of migratory paths), and hunting of lead caribou that are establishing the migratory route of the herd (including the killing of and diversion of these animals). Aircraft activity was of particular concern and includes operations by transporters, guides, “nonlocal” hunters utilizing personal aircraft, and recreational users. Specifically, aircraft in the vicinity of the Squirrel River was cited as particularly problematic (see **Map 8**; NWARAC 2015).

Concerning “nonlocal” hunting and herd diversion near the Squirrel River, one Northwest Arctic Council member described the situation as follows (NWARAC 2015:217):

We're getting more and more sport hunters. There's 80 percent of sport hunters—pretty much close to 80 percent of all sport hunters goes into Noatak and Squirrel Rivers. That Squirrel River is like a corridor connected to Aggie [Agashashok River] and there's Kiana and the caribou come right through there. Come through the flats, then through the Noatak River. That's when we get in close to the village. We don't have to buy two, three drums of gas, which is worth 10 gallons, 15 gallons gas. That really helps us.

That's what we've been doing for decades, years, centuries. This problem is not natural. Natural probably we can do nothing about, like the weather, climate change, but this problem is manmade. It's on our land. We're hurting. Our subsistence is in jeopardy. Well, I want to depend on these caribou very much. Very much. Too high a density of non-local hunters. That's the problem. That's not natural problem. That's manmade that can be fixed and that's what we're trying to fix. It seems to go right through from ear to ear. What I say here is going to go right out the door again? No. We want something done. We ask that down from the Aggie River and the Eli River to protect our subsistence, to protect our traditional culture.

Another Council member indicated that the Squirrel River area is an area with high user conflict and requested that the Bureau of Land Management (BLM) take additional action to address the issue. According to Bruce Seppi, a wildlife biologist for the BLM, eight guides and outfitters and four transporters received permits to operate on BLM lands in Unit 23 in 2015, primarily in the Squirrel River area, the area between Kotzebue and Kivalina, and south of Kivalina. In 2014, guides and outfitters brought in 22 clients and none harvested caribou (NWARAC 2015:207). Transporters brought in five clients who harvested 13 caribou (NWARAC 2015:207). In 2015, a total of six guides and outfitters were permitted, and a total of five transporters were permitted in the area. Only five post-use reports were received and harvest totals included a single caribou (Seppi 2016, pers. comm.).

While these aircraft may contribute to the perceived modifications in herd movement, private planes of “nonlocal” resident hunters are also thought to exacerbate the problem. According to Chairman Shiedt of the Northwest Arctic Council (NWARAC 2015:210):

I think the majority of the problem now is happening these smaller planes, private-owned planes, are coming to Buckland and Noatak and Kiana and we're all blaming the transporters and outfitters. I'm not favoring them, but the other year too when I was at Kelly they were there from Interior. There were four planes when I was there. So maybe that's the problem we're having here.

Concerns were expressed by residents of Ambler, Shungnak, and Kobuk as well as members of the Northwest Arctic Council that many “nonlocal” hunters did not act in accordance with local hunting traditions such as shooting caribou for trophies or sport instead of food and wasting meat by letting it spoil in the field (Braem et al. 2015, NWARAC 2015). Halas’ survey respondents in Noatak expressed similar concerns (Halas 2015). Additional conflicts between user groups include competition for or overcrowding of campsites, litter, human waste left behind by hunter groups, lack of law enforcement, degradation of the landscape from four-wheelers, and displacement from traditional hunting sites (Braem et al. 2015, Fix and Ackerman 2015, NWARAC 2015).

Concerns by residents of communities within Unit 23 were also recorded in the recently released documentary “Counting on Caribou: Inupiaq Way of Life in Northwest Alaska” (Betcher 2016). Respondents from several communities expressed concern regarding food security as it pertains to caribou herd diversion and changes in migration routes. Several of these indicated that both small and large scale changes to migration routes are linked to “nonlocal” hunting activities, particularly low-flying aircraft. According to Lucy Nordlum of Kotzebue (Betcher 2016):

We have many influences that play into us not getting certain subsistence foods. Hunters from outside to get their trophy caribou or whatever, that has impacted our area of hunting a lot. I would say in the past ten years we don’t have the big migrations that we used to have. They are chased further back into the backcountry. That makes it hard for those of us that don’t have airplanes or can’t afford the gas. The costs are a lot for fuel now and that influences a lot of people getting out there and doing their hunting. A lot of the people go up to Onion Portage from Kotzebue to get their caribou. That’s 500 miles or so away. It is hard with the caribou because that is about the only staple I really have besides fish.

Many of these concerns were substantiated by a mailed survey of “nonlocal” hunters that were transporter clients on the Noatak National Preserve (Fix and Ackerman 2015). Of the 1,127 individuals in this study’s sample, 372 returned surveys resulting in an overall response rate of 34% (Fix and Ackerman 2015). Eighteen percent of hunters reported shooting at the first caribou they saw and less than half of the transporter clients reported receiving information regarding “traditional local subsistence use,” “subsistence areas to avoid,” and “local traditional hunting.” Nonresidents of Alaska also reported that hunting for trophies was more important than hunting for meat while residents of Alaska reported hunting for meat was more important than hunting for trophies. Additionally, 58% of nonlocal caribou hunter

transporter clients reported they were not sure if they salvaged all edible meat. Similar to local hunters, nonlocal hunters reported encounters with other nonlocal hunters and airplanes as the two biggest factors detracting from their trip (Fix and Ackerman 2015).

Some agency actions that have been implemented to mitigate user conflict in Unit 23 include the formation of the Game Management Unit (GMU) 23 Working Group in 2008 (Braem et al. 2015), the delayed entry zone in Noatak National Preserve, the State's Noatak Controlled Use Area along the Noatak River, closure of some areas to commercial use by transporters and guides within Selawik National Wildlife Refuge, and the development of a Squirrel River Management Plan, which will address permitted guide and transporter activities such as camp size, placement, and travel (NWARAC 2015). While the public comment period for the Squirrel River Management Plan ended in December of 2010, a formal plan has still not been established as of July 2016.

The Squirrel River Management Plan Scoping Report issued in September of 2011 includes public commentary specifically in reference to "the impacts of transporters, transported hunters, and commercially-guided hunters on subsistence and general hunting." Meetings held in urban areas (Anchorage and Fairbanks) elicited mixed responses to this question while meetings held in rural areas elicited primarily negative views of "nonlocal" hunter influence on caribou. Commentary between subsistence users and commercial operators were largely conflicting, whereby the former group tended to prefer greater regulatory restrictions on the latter group (BLM 2011).

In discussions about ongoing concerns related to user conflict and possible caribou herd deflection near the Squirrel and Agashashok Rivers in Unit 23, members of the Northwest Arctic Council recommended during their fall 2015 meeting that the BLM take prompt action to address user conflict in the Squirrel River area, as well as a number of specific agency actions aimed at addressing conflict linked to commercial transporter operations (NWARAC 2015).

Knowledgeable hunter interviews in Noatak conducted by Halas (2015) also resulted in suggestions for boundaries and limits to "nonlocal" activity including allowing 1,000 caribou to pass before shooting, closing the Agashashok River corridor, and appropriately spacing "nonlocal" camps. Many of these suggestions cannot be enacted through the Board given the limits of its authority but may be considered by the State and the WACH Working Group.

In addition, the Northwest Arctic Council submitted WSA16-01 to the Board requesting that caribou hunting in Unit 23 be closed to all except FQSUs, noting that such a closure could be a first step in protecting the herd at Squirrel River, Noatak River, Cape Krusenstern National Monument,<sup>5</sup> and other Federal public lands in the area. The Council indicated that they would revisit the success of the closure after one year and, if new population numbers continue to indicate declines a request for closures on State lands would be a potential next step.

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<sup>5</sup> However, National Parks and National Monuments are already closed to non-Federally qualified subsistence users.

## **Current Events**

The Office of Subsistence Management held public meetings in Barrow, Kotzebue, and Nome in July 2016 and accepted comments to the Board concerning WSA16-03.

### Public Meeting in Kotzebue

On July 19, 2016, 49 people testified at the Kotzebue meeting in person or on teleconference, including local residents, nonlocal residents of Alaska, nonresidents of Alaska, guides, transporters, ADF&G, representatives of the Alaska Outdoor Council, and representatives of the organization Resident Hunters of Alaska.

Local residents provided the majority of public comments. Most opposed WSA16-03. These testifiers described the importance of and heavy reliance on caribou by local residents, and described that their cost of living is very high (up to \$22.00 per pound for store-bought meat in Noatak) compared to “non-local” Alaskans. The high cost of living is an added hardship as residents note change in caribou migration patterns. Local comments related to these issues included the following testimony:

- Some “local” residents spoke of the cultural significance of caribou for the people of the northwest arctic. They said traditional ecological knowledge teaches the importance of sharing and how conflict over a resource is disrespectful, often leading to decline. Caribou, they said, is the lifeblood of local villages, more nutritious than store-bought meat, and children’s health depends on it. Someone noted that caribou in northwest Alaska is like whale on the North Slope. Villages strive to keep their traditions alive. The closure protects a way of life and is crucial to local hunters.
- Many local residents testified that they must travel farther and incur more cost before reaching the herd. Participants noted that Noatak hunters now must travel up to 100 miles to harvest caribou that were once available locally. Residents of Shungnak and Point Hope testified that they also must travel farther to reach caribou that once were harvested locally.
- The no-landing zones in the lower Noatak drainage moves transporters to the upper Noatak drainage which is mostly Federal public lands. The closure is necessary to help local residents harvest caribou on traditional hunting grounds upriver. If current conflicts continue, hunting may be shut down for a long time.
- Many “local” residents testified that the timing and migration patterns of the caribou herd had changed. Buckland hunters noted that the herd arrives late and worry caribou will not be available to them or will arrive in rut. A testifier from Deering noted caribou are arriving later. Some local hunters from the most congested areas must purchase more food and gas to access hunting areas in the Upper Kobuk drainage.
- Several individuals testified that the issue is not about population levels but local conflict with non-FQSUs and transporters. They said that non-FQSUs often access hunting areas by aircraft, place hunting camps in front of herd migration, and harvest lead caribou thereby diverting the herd from its natural migration path. These hunters concentrate their efforts where caribou are present in larger numbers, often in the vicinity of villages that are purposefully situated along migration routes.



Residents said the noise made by low flying aircraft stress caribou and affect their behavior and overall health.

- Non-FQSUs practicing wanton waste are also a problem and are observed in winter as well as fall seasons. Some testified that while transporters do distribute caribou meat, some is aging or “rutty” and most goes to Kotzebue and not smaller villages like Kiana and Noorvik. Local residents opposing WSA16-03 also say the WACH population estimate is insufficient to accurately determine how quickly or how much the herd is shrinking. One Kotzebue resident pointed out that recent research of 31 collared caribou from Onion Portage by ADF&G is inadequate to judge overall calf survival rates from a herd of 200,000. Another resident said that recent observations of ADF&G staff of healthy caribou means only that caribou have more browse available to them and does not describe a long term population trend.
- Many local residents shared concerns about State management of WACH, and noted that the State considers economic effects of the closure to transporters, guides, and non-FQSUs and not the impacts of these activities on local hunters. They said the State fails to recognize the higher dependence of local hunters on wild resources and caribou specifically. Local residents share the burden of conservation and comply with lower harvest limits and shorter seasons.
- Participants stated that people with ties to the region living in urban Alaska can hunt for caribou on NANA Corporation, State, and village corporation lands. Concentrating non-FQSUs hunting caribou in Unit 23 on State lands allows better enforcement of State regulations.
- The WACH Management Plan is important and the herd may be at or approaching the 200,000 animal threshold for Preservative Management Level described in the plan. The State should err on the side of caution and implement Preservative Management Level recommendations.
- Some residents stressed that the closure is for one year only and should remain in place.
- An Alaska resident who is a non-FQSUs who cannot hunt caribou in Unit 23 under Federal subsistence regulations opposes the special action request because human settlement in the region is the result of caribou, and any short-term recovery of WACH does not resolve the recurrent problem of the caribou herd being diverted by transporters. This Alaskan resident said that the Board has responsibility to protect subsistence users and recognize rural Alaskans have priority for harvesting fish and wildlife on Federal public lands.

A number of participants who testified at the public meeting either in person or by phone were in support of WSA16-03. Reasons given in support of the special action include:

- The existing closure is an over reach and the Federal government should not be involved.
- Nonlocal Alaskan resident hunters said they support the special action request because they are responsible hunters, respect local residents and their traditions, and provide substantial amounts of meat to villages. Cultural values and experiences of non-FQSUs are equally important to local values and experiences. The burden of conservation of the WACH should be shared by all State residents.

- Nonresidents of Alaska testified in support of WSA16-03 and said the user conflict is the result management decisions, nonlocal hunters are responsible for harvesting 600 caribou, a small percentage of the overall harvest, and nonlocal hunters routinely share caribou meat with local communities.
- Guides and transporters said they are being negatively impacted economically. Federal public lands should be open to all Americans. They said that if the Board does not approve the special action request, it is acting prematurely, targeting a group that accounts for only 5% of WACH harvest, contributing to misunderstandings between users, and impacting human relations in the region. Not supporting the special action concentrates non-FQSUs in Unit 26A that is critical habitat for caribou. Many guides as well as outside hunters stressed respect for the local people and pointed out that nonlocal hunters donate up to two thirds of their caribou meat to village residents.
- A representative of the Alaska Outdoor Council stated that they support the special action request because it supports subsistence uses by all Alaskans. Additionally, when biological staff indicate that there is not a conservation concern, the closure does not meet the criteria of Title VIII of ANILCA.
- Resident Hunters of Alaska said the State nonresident season should close before non-FQSUs who are residents of Alaska are prohibited from harvesting caribou in Unit 23. If the Board does not support the special action request, it is overlooking the recommendation of biologists. The Board should review its protocols for closures.

ADF&G expressed support for its WSA16-03 because the WACH Working Group brings all parties to the table to negotiate caribou management plans for the region. Representatives stated that the WACH Management Plan was endorsed by the Board, and if the Board does not approve the special action request, it is acting independently of the WACH Working Group and jumping ahead of the process outlined in the WACH Management Plan. An ADF&G representative noted that a photo census from early July 2016 is complete, and a revised WACH population estimate is expected in October 2016. Additionally, newly reported research demonstrates that in 2015, calf survival increased by 10%, adult body weight condition is “high,” and the cow pregnancy rate is 85%, the second highest on record, indicating the population seems to be stabilizing. The Board and the Alaska Board of Game have different mandates but they should not deviate from the WACH Management Plan which was agreed on by both.

### Public Meeting in Nome

On July 20, 2016, 16 local residents, other residents of Alaska, nonresidents of Alaska; transporters, the group Resident Hunters of Alaska; ADF&G; and Kawarak, Inc., Stebbins Tribe, and Saint Michael Tribe testified in Nome. Local residents were mixed on whether they supported or opposed WSA16-03. The majority of the testimony was in support of WSA16-03. Supportive testimony included:

- The Board’s original decision to support WSA16-01 was premature, contrary to the WACH Management Plan which is a bridge between Federal and State management, and will allocate caribou to one user group at the expense of another which is inappropriate. This fall, non-FQSUs will concentrate their hunting efforts at caribou river crossings, for example, and existing user conflicts will not be mitigated.

- Two transporters testified in support of WSA16-03 because the Board based its decision to close on outdated information; the 400–500 caribou harvested annually in Unit 23 by non-FQSUs will have little effect on the caribou population; and transporters provide many pounds of caribou meat to local residents.
- Nonresidents of Alaska supported WSA16-03 because the Board based its decision to close on anecdotal information rather than scientific data. They said the Board is supposed to follow biological guidelines and the closure to non-FQSUs was not necessary for conservation of the caribou population in Unit 23.
- The group Resident Hunters of Alaska supports WSA16-03 because the WACH population is above the threshold for the Preservative Management Level as described in the WACH Management Plan. In addition they said that all Alaska residents should have a subsistence priority including people with close ties to the region that live elsewhere in Alaska, and nonresidents of Alaska should be excluded first.
- ADF&G submitted and supports WSA16-03 because the recent closure will not affect the caribou population in Unit 23; individual caribou appear healthy; user conflict will likely escalate because hunters' distribution will be restricted to State lands only; the WACH Working Group co-management planning process that the Board endorsed in 2001 is undermined; the Western Arctic Herd population is declining due to its natural cycle, it is likely the herd is reaching a low point, and harvest is not driving the decline; and the effects of new State and Federal regulations will be evaluated before further restrictions are likely to be proposed by ADF&G.

Local residents opposing WSA16-03 gave testimony in opposition to guided hunting. One suggested that instead of a full closure, the caribou harvest limit in Unit 23 should be reduced from five caribou per day to two caribou per day for non-FQSUs who are residents of Alaska. Local hunters observed the Seward Peninsula's Kougarok Road turned the WACH from its natural migration in the late 1990s, and hunting pressure is similarly interfering with the natural migration of the herd in Unit 23. Stebbins and Saint Michael tribes also oppose the special action request.

#### Public Meeting in Barrow

On July 25, 2016, 9 people testified in Barrow including local residents, nonresidents of Alaska, and ADF&G. Local residents in attendance were generally opposed to WSA16-03 with testimony as follows:

- ADF&G is acting too quickly on biological information recently collected. The WACH and TCH have declined 50%, negatively impacting local subsistence users.
- Concerns for the impact of sport hunting on local subsistence hunters have increased over the last 10 years.
- The combined amounts reasonably necessary for subsistence (ANS) for these two herds is misleading because if the ANS for each herd is separated out, there isn't enough caribou in either herd to support harvest by non-FQSUs.

- Hunts for nonresidents of Alaska are not supportable. Many communities in Unit 23 are highly dependent on caribou for subsistence, and if people don't harvest caribou many people go hungry. Also, the opportunity for meaningful cultural and traditional experiences through quality subsistence activities is very important in passing knowledge from one generation to the next, and supporting and teaching traditional sharing. The State should consider local ordinances and zoning restrictions, described in the North Slope Borough Comprehensive Management Plan, and designate "areas of influence" that local users rely on for obtaining subsistence resources for themselves, family, and community, and manage these areas for subsistence uses primarily.
- Local testifiers that oppose the special action also said that when the herd does not migrate through areas villagers can reach, there is great hardship, and any action that helps local subsistence communities until the herd rebounds is important.
- Caribou are perhaps the most important subsistence food upon which the local communities depend, both nutritionally and culturally. Many communities are experiencing nutritional hardship.
- Those who testified said that local subsistence users take regulations seriously and are concerned about conservation of the herds. They take a grassroots approach to changing regulations to help conserve caribou by reducing subsistence harvest and balancing the need to provide for communities. Local residents want to see if there are benefits for FQSUs from the closure before reconsidering it.
- Residents from Anaktuvuk Pass discussed the importance of teaching young people how to live a traditional life. They said local hunting practices let the lead animals pass by, allowing the remainder of the herd to follow and be available for harvest. People in the Northwest arctic are relatives, and when caribou come through, they work as a community to harvest and share. At Anaktuvuk Pass, people have not had access to caribou for five or six years. There are no spring or fall migrations, and many families go hungry. They said other communities send food but it is still not enough. One resident said, "We have had to rely on food from other villages for our elders. I don't approve of opening the area to non-Federally qualified hunters. This is a short notice request and action. Listen to the local people who have been suffering for so many years. Consider the hardship our people are faced with, and consider the local people that are affected by WP16-03."
- Other opposing testifiers worry that residents of Noatak will not get enough caribou if migration patterns keep changing combined with the decline in population. The 700–900 animals taken by nonresident hunters, mostly adult bulls, which have harems of up to 75 cows, can have a population-level effect. New recent biological numbers do not create a trend, which requires multiple years of data. Participants expressed that the State is overly influenced by economic needs of the big game lobby, and it is irresponsible to make management decisions driven by economics. They said food security is the primary concern.
- Some residents said Anaktuvuk Pass, Shungnak, Selawik, and Ambler have difficulty finding caribou and travel much further to get caribou than in the past. This is a great hardship with the cost of gas at \$10.00 per gallon and freight at \$2.00 per pound. They said there is no economic hardship for sport hunters to fly in, but local residents depend on caribou all year round. The migration through Anaktuvuk Pass used to be four days long and the community hunted and shared caribou, and traded food with coastal families. They asked the Board to consider the hardship of the people.

- Local residents said the North Slope Borough is able to help out their communities more than some of the communities in Unit 23. There are few jobs in many communities in Unit 23 and the primary resources are subsistence resources. In many communities 80–90% of their food is subsistence resources. Conflicts between subsistence users and sport hunters occur in those areas important to subsistence users. They said that they worked hard to conserve the herd and that other caribou herds can support non-Federally qualified hunters.

A few local residents that testified in support of the special action request. They said that if the Board does not approve the request, it will be out of line with the WACH Management Plan. The WACH Working Group represents diverse groups working hard to guide management and has been instrumental in the adoption of recent State regulations. They said State lands are important to subsistence hunters, and the closure may increase crowding and conflict on these lands. Additionally, only 5% of the harvest is by nonlocal hunters and opposing the special action request will not affect the herd population. They spoke of recent evidence suggesting that the WACH population is declining at a slower rate or stabilizing. Calves are in good condition with more surviving. They heard that this summer ADF&G got a good and accurate count. This information supports leaving caribou hunting in Unit 23 open to all users in order to reduce conflicts between sport hunters, nonlocal subsistence hunters, and local subsistence hunters in the Squirrel and the Noatak drainages.

Nonresidents of Alaska testified in support of WSA16-03 because the impact to the caribou population by non-FQSUs is negligible. They said that nonresidents of Alaska suffer negative economic impacts and that if there is a real problem with the herd, restrictions should first target resident hunting, which comprises most of the harvest.

ADF&G supported WSA16-03 and testified that State biologists' estimate the population of WACH is currently around 205,000, which places the herd in the Conservative Management Level, as described in the WACH Management Plan. A new population estimate will likely be available in October. ADF&G does not consider the WACH a conservation or biological concern. ADF&G contended that if this request is not approved by the Board, the Board's decision will be inconsistent with the WACH Management Plan. ADF&G said that this will be detrimental to subsistence users and in conflict with the Board's closure policy. They also said that recent biological information from surveys in 2015 and 2016, though not available at the April 2016 Board meeting, indicate calf survival and recruitment are improving as well as adult female survival compared to previous years. They cautioned that if the Board does not approve the request, instead of reducing the diversion of the herd and conflict between users, as the Board's actions intended, it will actually create more conflict as all non-Federally qualified hunters will be concentrated on State lands (approximately 20% of Unit 23). ADF&G stressed that rejecting Special Action Request WP16-03 fails to consider the economic consequences for the region, outfitters, guides, transporters and others.

#### Consultation with Tribes

Consultation between tribes and the Board was held on Thursday August 4, 2016 for WSA16-03 at the USFWS Regional Office in Anchorage in person and by teleconference. Designees of Board members

representing the Bureau of Indian Affairs and National Park Service attended. The Inupiat Community of the Arctic Slope, Maniilaq Corporation, the Native Village of Noatak, the Native Village of Kotzebue, and the Native Village of Kiana attended. Tribal comments were largely in opposition to WSA16-03. Several reasons given for the opposition include:

- The WACH Cooperative Management Plan suggests the Preservative Management Mode when the herd reaches 200,000 animals. Given a lack of definitive population data, preference should be given for a more conservative approach.
- The closure provides an opportunity for the WACH to migrate without interruption, potentially allowing them to migrate closer to unit 23 communities and in turn increasing the opportunity for subsistence harvest by FQSUs.
- Caribou is more than a traditional resource; it is also a spiritual resource. The Board listened to the people and their needs when implementing the closure on Federal public lands.
- Caribou has been very difficult to harvest in last several years. Hunters must travel farther and spend more, with fuel costing approximately \$9.99 a gallon. Alternative commercial goods are too expensive to substitute; reindeer costs around \$19 per pound.
- For several years hunters have had to pool resources to afford hunting trips. In some cases we are purchasing fuel and sending hunters out but they are returning unsuccessful. They are reporting lots of tents and aircraft where caribou should be migrating through.

A tribal representative indicated concern that hunters that are no longer FQSUs would not be permitted to hunt caribou in Unit 23 on Federal public lands.

#### Comments from ANCSA Corporations

An opportunity for ANCSA corporations to give comments to the Board was also held on Thursday August 4, 2016 for WSA16-03 at the USFWS Regional Office in Anchorage in person and by teleconference. Designees of the Bureau of Indian Affairs and National Park Service Board members attended. Representatives of Kukulget Inc. (in Savoonga) and Sivuqaq Inc. (in Gamble) attended. These representatives indicated that while their communities may have customary and traditional use determinations for caribou in Unit 23, their shareholders do not regularly travel to Unit 23 to harvest the resource because of the expense of doing so. They declined to comment further on WSA16-03.

#### Federal Subsistence Regional Advisory Council Actions

##### *Western Interior Alaska Subsistence Regional Advisory Council*

The Council opposed WSA16-03. The WACH has lost several cohorts of calf recruitment, and the Council emphasized concerns about the effect this might be having on the herd's bull:cow ratio. The Council was especially concerned about removing large bulls from the herd and the effect on reproduction. The Council said caribou breed in a short period of time, younger bulls cannot always keep up with the breeding stress, and young bulls have higher winter mortality than older bulls. The Council cited the Mulchatna caribou

herd as an example, where reducing bull:cow ratios undermined the reproductive capacity of the herd. New bull:cow ratio information for the WACH was not available. The Council was concerned about the declining WACH and preserving the herd for future years, that that caribou have been observed migrating around the Kobuk and Ambler areas and staying more in the mountains possibly because of predation and over-harvesting (WIASRAC: 256–370).

*Seward Peninsula Subsistence Regional Advisory Council*

The Council opposed WSA16-03. Council members expressed concern over the lack of data regarding the impact of the nonlocal hunt prohibition, as well as the success rate for nonlocal hunters displaced onto State lands. The Council heard from communities that, due to fewer airplanes, there were more caribou sightings by locals. Overall, the Council did not feel comfortable with reopening the hunt until additional information on the impacts of WSA16-01 was provided.

*Northwest Arctic Subsistence Regional Advisory Council*

The Council opposed WSA16-03. Council members said that WSA16-03 would undermine the special action submitted by the Northwest Arctic Council (WSA16-01). The Council had received reports from communities and letters from tribes in the region that the current closure has helped communities get the caribou they need. Council members heard from Noatak, Kivalina, and Kotzebue residents; they were comforted this fall and felt at peace that they were finally able to fill their freezers with caribou for the year.

The Council had been working to find a workable solution to satisfy the needs of people and wanted to see how the current closure was working. Local people rely heavily on caribou and are concerned about the declines. Council members said that “we are a caribou people” in both culture and diet and want the herd to prosper and stay in balance for the future. The Council and communities in Unit 23 took action to conserve the herd and agreed to reduce their own caribou harvest. It was a tough situation, and the Council worked hard to make a wise decision for the people. The Council felt the situation warranted taking further action to reduce harvest by nonresidents of the area. The intensity of fly-in hunting in these areas had diverted the caribou migration. These areas are also traditional hunting grounds for local communities that rely on caribou for food. The cost of gas is very high for travel to hunt caribou, store bought food is limited and too expensive to replace caribou, and communities pool resources to be able to harvest enough caribou to feed their families. Nonresident hunters have the opportunity to fly somewhere else to hunt.

The Council said that there needs to be more information on the health of the caribou population, and the recent updated count presented by ADF&G is not sufficient to lift the closure or ease any conservation measures for the WACH.

*North Slope Subsistence Regional Advisory Council*

The Council opposed WSA16-03. The Council responded to new data presented by the proponent and said the Board should err on the side of caution and retain the closure. Another year of data would be needed to identify a trend that the annual decline of the WACH population is becoming less each year. Additionally, the new point estimate for the WACH population was only about 900 caribou over the threshold for “preservative” management identified in the WACH Management Plan (see **Table 2**). The Council said

there is no guarantee or monitoring program to assess if harvest would be within the harvestable surplus if the season was opened. Residents of Alaska hunting the WACH for food should have priority over people hunting for racks. Food security concerns exist in the area. The State has not responded to the needs of local communities; it has been reluctant to use its own process, such as implementing Tier I or II hunts, as the herd declines. The State uses Amounts Necessary for Subsistence (ANS) to manage harvest, and ANS for the TCH and WACH were combined, appearing to support continuation of sport hunting. The Council said hunting in much of the WACH's range should be in Tier I or Tier II. The Federal program is intended to manage harvest for sustained yield and not for ANS. Additionally, the Council said villagers hunt in traditional areas. Others should hunt outside village areas, and all Federal public lands should be closed to nonlocals until there is a willingness to recognize village areas of influence and to provide for a reasonable traditional hunting experience for all communities in Unit 23. The Council has heard reports from Unit 23 residents that more caribou were observed and harvested this fall than in the recent past, and caribou migrated nearby Anaktuvuk Pass for the first time in six or seven years.

The Council said transporting caribou hunters by air has been a growing issue in North Slope as well as Northwest Arctic communities. Enforcement of regulations is minimal to none and some sport hunters are likely hunting in areas where they should not. Sport hunters look for the biggest bulls most of the time; when a dominant bull is killed, calf recruitment from up to 50 cows can be lost. Transporters are pushing sport hunters in front of migrating herds and not follow traditional hunting practices. When large bulls leading the herd are killed, cows and younger bulls become lost. Villagers have knowledge of where their best harvesting opportunities will be. Once guides and transporters figure out where these areas are, they are inundated with nonlocal hunters. Migration routes might have been altered because of nonlocal hunters inundating and interrupting caribou migration (NSSRAC 2016:84–109).

#### State of Alaska Board of Game Proposals

Currently pending are two proposals submitted to the Alaska Board of Game by the Noatak/Kivalina and Kotzebue Sound Fish and Game Advisory Committees. The proposals to be considered in January of 2017 seek an extension to the boundaries of the Noatak Controlled Use Area to the Cutler River, and a spacing requirement of at least three miles for big game hunting camps located in the Noatak Controlled Use Area, along the Agashashok, Eli, and Squirrel Rivers (Unit 23 Working Group 2016).

#### **Effects of the Proposal**

If the Board approves WSA16-03, Federal public lands in Unit 23 will reopen to caribou hunting by non-FQSUs. In its request to the Board in June 2016, the State said that new information indicated improvements in caribou calf production, recruitment, survival, and weight; adult females exhibited very good body conditions and high pregnancy rates in 2015 and 2016; and the newly derived WACH population estimate for fall 2015 was 206,000 caribou, falling within the WACH Management Plan's "conservative" harvest management strategy.

In addressing this new information, first, calf production has likely had little influence on the WACH population decline (Dau 2013, 2015a), and improvement demonstrated in recent research (**Figure 3**, Dau



2016a) is not as relevant as calf survival and recruitment. Second, decreased calf survival through summer and fall and recruitment into the herd are likely contributing to the population decline (Dau 2013, 2015a). Recent research demonstrates that 2015 and 2016 cohorts make up a large proportion of the herd (**Table 3** and **Figure 3**, Dau 2016b). Because of their young age, they remain somewhat vulnerable to difficult winter conditions. Evaluating the over-winter survival rates of the large cohort of 2016 will help to put the demographic potential of this cohort into context (Parrett 2015c, 2016b). Third, increased cow mortality is likely affecting the trajectory of the herd (Dau 2011, 2013), and new data demonstrate decreasing annual cow mortality rates in three of the past four years (**Figure 4**, Dau 2016a). Fourth, the results of a July 1, 2016 photocensus survey resulted in a minimum count of 194,863 caribou with a point estimate of 200, 928 (Standard Error=4,295, Parrett 2016b). Results of this census indicate an average annual decline of 5% per year between 2013 and 2015, representing a lower rate than the 15% annual decline between 2011 and 2013 (**Figure 1**). While there is substantial uncertainty in the harvestable surplus estimates, the overall trend is decreasing as the population declines (Parrett 2015a). If population projections and harvest estimates are accurate, overharvesting is likely already occurring (Dau 2015a, Parrett 2015b).

Before going further, it is important to know that Board actions are guided by the objectives of Title VIII of ANILCA that mandate that if a conservation concern or increasing competition among authorized users and uses requires a reduction in harvest, subsistence uses will be prioritized over other consumptive uses on Federal public lands. Federal regulations give the Board the authority to restrict harvest only to subsistence uses on Federal public lands. This is the first step in the Federal subsistence prioritization process. In the event that nonsubsistence uses have been eliminated on Federal public lands or waters but it remains necessary to restrict the taking of fish or wildlife on public lands by rural residents with a C&T determination in order to protect the continued viability of the fish stock or wildlife population or to continue subsistence uses, the Board must take the next step and establish a priority among subsistence users.

In WSA16-01, the Board was asked to take the first step in the ANILCA Title VIII-mandated prioritization process, described above, in order to protect the continued viability of the WACH and to protect the continuation of subsistence uses. Evidence the Board cited included public testimony expressed to the Board by residents of the area, the position of two affected Councils (Northwest Arctic and North Slope), and the status of the herd. The Board concluded that a closure to all but FQSUs was consistent with providing a subsistence priority for use of the resource and assurance that a rural preference was being provided, and recognized the cultural and social aspects of subsistence activities, which may be hampered by direct interaction between local and nonlocal users.

If, in the future, the Board is asked to further reduce subsistence harvest seasons or limits, it may oppose further limitations on subsistence uses until Federal public lands are closed to the taking of caribou by non-FQSUs.

If the Board approves WSA16-03, will user conflict be reduced in the Noatak National Preserve, the Squirrel River area, or along the upper Kobuk River, areas demonstrated to be the focus of user conflict since the 1980s (Georgette and Loon 1988, Jacobson 2009, Harrington and Fix 2009 *in* Fix and Ackerman 2015, Halas 2015, NWARAC 2015, Braem et al. 2015)? It can be assumed that the closure has reduced the

number of non-FQSUs hunting caribou in Unit 23; however, the degree to which this has occurred, or how many more hunters will be present if the closure is rescinded, is not known at this time.

Will user conflict mitigation efforts instituted by the NPS, FWS, and ADF&G effectively reduce user conflict? It is likely that NPS and ADF&G efforts in the lower Noatak drainage may be exacerbating user conflict in the middle and upper Noatak River by pushing non-FQSUs into the path of the main caribou migration in recent years (**Map 2**, Dau 2015a). In light of this, the NPS and FWS may decide to pursue further limitations in order to protect the continuation of subsistence uses.

Some non-FQSUs, guides, and transporters may have already decided to pursue caribou later in the season when hunters can enter the Noatak Controlled Use Area and Noatak National Preserve Special Commercial Use Area (**Map 2**) using aircraft; however, State lands are limited in these areas (**Map 10**). It is likely that the closure moved some hunters to State lands in the Buckland area and upper Kobuk River area, and rescinding the closure may reduce hunting pressure and airplane use in these areas.

If the Board rejects WSA16-03, Federal public lands in Unit 23 will remain closed until June 30, 2017 to the harvest of caribou by non-FQSUs. In the future, the Board may find it necessary to adopt the closure into Federal regulations, further reduce subsistence seasons or harvest limits, and conduct an ANILCA Section 804 subsistence user prioritization to reduce the pool of eligible subsistence users in order to reduce the subsistence harvest. The Board may be compelled to take these actions if the WACH's declining population trajectory and declining harvestable surplus continue (Dau 2015a).

Caribou hunting by non-FQSUs and the presence of aircraft in Unit 23 has likely been reduced since the closure began on July 1, 2016, and will continue at some lower level than in previous years (**Figure 6**), but the degree of change is unknown at this time. It is likely that local hunters will observe fewer aircraft, ORVs, hunting camps, and hunters except near State lands when caribou are present. Local hunters' observations of airplanes and hunters affecting individual or group caribou behavior have been documented (Halas 2015), and several studies have also documented negative caribou responses and avoidance behavior toward aircraft, motorized equipment, and development (Valkenburg and Davis 1983, Wolfe et al. 2000, Vistnes and Nelleman 2007, Calef et al. 1976, Maier et al. 1998), but there have been no studies that document whole herd avoidance. The degree to which caribou have been deflected or the WACH migration path altered due to aircraft and hunter disturbances and how much this may be alleviated by the closure is not clear. However, in recent years the migration path has clearly moved eastward to areas with less documented hunting pressure by non-FQSUs and accompanying aircraft use (**Map 8**, Dau 2015a).

Visitors to the area will continue to use aircraft to access Federal public lands for sightseeing, photography, and other purposes and to hunt moose. It is unknown to what extent other aircraft activities affect caribou; however, an increased ratio of aircraft activity that does not result in mortality may help to habituate the herd to engine noise as was suggested by Valkenburg and Davis (1985).

## **OSM CONCLUSION**

**Neutral** on Temporary Special Action Request WSA16-03.

Caribou is vital resource for the people of the Northwest Arctic Region and has long been a part of the cultural identity of this area (Burch 1984, 1998, 2012; Foote 1959; Georgette and Loon 1988, 1993; Loon 2007; Magdanz 2011; NWARAC 2015, 2016; NWARAC and NSRAC 2016). While caribou populations naturally fluctuate over decades (Gunn 2001, WACH Working Group 2011), the WACH population has been declining since 2003 (**Figure 1**, Parrett 2016b). Additionally, the continuation of subsistence uses has been jeopardized by effects of longterm nonlocal caribou hunting activity. The State of Alaska submitted to the Board WSA16-03 to open Federal public lands in Unit 23 to non-FQSUs. This action would rescind the closure that resulted from approval of WSA16-01.

This analysis has demonstrated many valid arguments for both supporting and rejecting WSA16-03. However, data gaps also exist that hinder a complete understanding of the complex biological and anthropological components surrounding this issue. Ultimately, the Board's decision will be guided by the objectives of Title VIII of ANILCA to provide a subsistence priority on Federal public lands while protecting the continued viability of fish and wildlife populations and the continuation of subsistence use of these resources. ANILCA Title VIII Section 815.3 as well as the Board's 2007 closure policy authorize restricting nonsubsistence taking of fish and wildlife on Federal public lands if necessary for the conservation of healthy fish and wildlife populations, to continue subsistence uses, or pursuant to other applicable law.

**Table 6** and **Table 7** summarize the textual and numerical data offered in support of approval or rejection of WSA16-03 that address the conservation of healthy populations of fish and wildlife. **Table 8** and **Table 9** summarize the textual and numerical data offered in support of approval or rejection of WSA16-03 that address the continuation of subsistence uses. All of the textual and numerical data summarized in the four tables are addressed at length within the body of the analysis and represent summations of data and public testimony.

When considering the data and public testimony presented in this analysis, the Board may also wish to address the need for data that can assess the qualitative or quantitative effects of the current closure, determine the effects caused by other recent regulatory changes, and determine longer-term impacts of the closure for both FQSUs and caribou.

There are three main actions the Board may wish to consider in response to WSA 16-03:

- **Reject** WSA16-03 resulting in the continued closure of Federal public lands in Unit 23 to the harvest of caribou by non-Federally qualified users for the 2016 regulatory year.
- **Approve** WSA16-03 resulting in the opening of Federal public lands in Unit 23 to the harvest of caribou by non-Federally qualified users for the remainder of the 2016 regulatory year.
- **Approve** WSA16-03 **with modification** to maintain the Unit 23 closure to the harvest of caribou by non-Federally qualified users on some Federal public lands while reopening areas to all user groups. The Board may wish to consider options such as those developed in the following section or alternative options not presented in this analysis.

Data and arguments addressing the conservation of healthy populations of fish and wildlife in relation to WSA16-03 have been compiled for Board consideration. These data are summarized in **Table 6** and **Table 7**.

**Table 6.** Points to consider, affecting the conservation of healthy populations of caribou on Federal public lands in Unit 23, that support opening Federal public lands to the harvest of caribou by all users.

| <b>APPROVE WSA16-03</b>  |
|--|
| <b>POINTS TO CONSIDER—CONSERVATION OF HEALTHY POPULATIONS</b>  |
| <p>The amount of harvest by non-Federally qualified users (non-FQSU) does not have a meaningful biological impact on the herd.</p> <p><i>(see Regulatory History, Harvest History, Biological Background)</i></p>  |
| <p>The WACH Cooperative Management Plan should be followed because it includes many stakeholder groups and already agreed upon management modes. Management recommendations have been followed for the appropriate herd population estimate. Bull:cow ratios naturally fluctuate and actual values should be interpreted with caution.</p> <p><i>(see Discussion, Biological Background, Current Events)</i></p> |
| <p>When conservation concerns warrant, nonresidents of Alaska should be restricted from harvest before non-FQSU residents of Alaska. This provides for non-FQSUs that are residents of Alaska to participate in the harvest.</p> <p><i>(see Current Events)</i></p>  |
| <p>Recent observations of improved cow body condition, high calf weights, improved calf recruitment and production, and reduced cow mortality indicate improved herd performance and population models indicate a decreased rate of population decline.</p> <p><i>(see Discussion, Biological Background)</i></p>  |
| <p>Recent observations of improved calf survival are encouraging. The spring 2016 calf (SY):adult ratio was the highest recorded since 2007 and the second highest since 1997. Data from Onion Portage is for calf weight and cow body condition. No mortality data is collected.</p> <p><i>(see Discussion, Biological Background)</i></p>  |
| <p>Recent observations of productivity in 2016 are encouraging. The estimated initial production was 85 calves: 100 cows—among the highest parturition levels recorded for this herd.</p> <p><i>(See Discussion, Biological Background)</i></p>  |
| <p>Observations of calf weights and cow body condition in 2015 are encouraging. The average body condition of adult females was characterized as fat. Average weight of all calves in 2015 was 100 lbs.—the highest average recorded at Onion Portage.</p> <p><i>(see Discussion, Biological Background)</i></p>   |

**Table 6.** Points to consider, affecting the conservation of healthy populations of caribou on Federal public lands in Unit 23, that support opening Federal public lands to the harvest of caribou by all users.

| <b>APPROVE WSA16-03</b>  |
|--|
| <b>POINTS TO CONSIDER—CONSERVATION OF HEALTHY POPULATIONS</b>  |
| <p>A deterministic model that uses vital herd characteristics suggests a population estimate of approximately 206,000 animals; this places the herd within the Conservative Management level.</p> <p><i>(see Biological Background, Current Events)</i></p>  |
| <p>An aerial photocensus in 2016 suggests a population estimate of 200,928 (SE 4,295); this places the herd within the Conservative Management level.</p> <p><i>(see Biological Background, Current Events)</i></p>  |
| <p>There is little empirical evidence to suggest that changes to herd migration routes have been caused by hunting activities associated with non-FQSUs.</p> <p><i>(see Biological Background, Current Events)</i></p>   |
| <p>The vast majority of harvest in Unit 23 is by Federally qualified users (FQSUs) and thus restrictions on these users results in greater biological impact.</p> <p><i>(see Regulatory History, Harvest History - Harvest from WACH &amp; Harvest from Unit 23)</i></p>   |
| <p>Harvest restrictions implemented by the Board of Game in 2015 have not been given sufficient time to yield intended results. Restrictions on harvest, sex of harvested animals, and timing of harvest were implemented in response to the declining herd and should be given a change to work before additional restrictions are put in place.</p> <p><i>(see Harvest History - Harvest from WACH &amp; Harvest from Unit 23, Current Events)</i></p> |
| <p>Closures on Federal public lands will only serve to concentrate non-FQSUs on State lands. This may still affect herd migration patterns.</p> <p><i>(see Discussion, Regulatory History, Current Events)</i></p>   |

**Table 7.** Points to consider, affecting the conservation of healthy populations of caribou on Federal public lands in Unit 23, that reject opening Federal public lands to the harvest of caribou by all users.

| <b>REJECT WSA16-03</b>   |
|--|
| <b>POINTS TO CONSIDER—CONSERVATION OF HEALTHY POPULATIONS</b>  |
| <p>Additional restrictions on non-FQSU are warranted given the continuing decline in the WACH.</p> <p><i>(see Regulatory History, Biological Background, Harvest History, Cultural Knowledge and Traditional Practices)</i></p>  |
| <p>Available biological data is insufficient to clearly define the appropriate WACH Cooperative Management Plan action. The 2016 population point estimate of 200,928 (SE 4,295) suggests a straddling of the 200,000 threshold between Conservative and Preservative Management levels. Additionally, cow:bull ratios are lower than the recommended 40:100 ratio identified in WACH Management Plan.</p> <p><i>(see Biological Background, Cultural Knowledge and Traditional Practices, Current Events)</i></p> |
| <p>Unlike the Alaska Board of Game, the Federal Subsistence Board does not have the legal authority to restrict only nonresidents of Alaska. Closure to non-FQSUs is authorized to ensure the Federal subsistence priority on Federal public land.</p> <p><i>(see Current Events)</i></p>  |
| <p>Newly acquired herd performance characteristics are insufficient to characterize the current rate of decline. While a slowed rate of decline in 2016 has been reported, the decline continues. The new, lower rate of decline is not indicative of a long-term trend and thus should not be relied upon exclusively.</p> <p><i>(see Biological Background, Current Events)</i></p>  |
| <p>Too few calves are observed to provide meaningful insight. Calf observations at Onion Portage fail to recognize calf mortality along migration route, prior to reaching this location.</p> <p><i>(see Current Events)</i></p>   |
| <p>Single year productivity does not represent long-term trends for the herd population.</p> <p><i>(see Current Events)</i></p>  |
| <p>Improved body condition may indicate improved quality of forage and access to it, but does not necessarily suggest long-term population trends.</p> <p><i>(see Current Events)</i></p>  |
| <p>The deterministic model is not considered as accurate as a photocensus in estimating population and it does not consider error in each of the vital herd statistics of which it is comprised. Coupled with the 2016 herd population estimate of 200,928 (SE 4,295), the herd may be below the 200,000 animal threshold between Conservative and Preservative management levels.</p> <p><i>(see Biological Background, Current Events)</i></p>   |

**Table 7.** Points to consider, affecting the conservation of healthy populations of caribou on Federal public lands in Unit 23, that reject opening Federal public lands to the harvest of caribou by all users.

| <b>REJECT WSA16-03</b>   |
|--|
| <b>POINTS TO CONSIDER—CONSERVATION OF HEALTHY POPULATIONS</b>  |
| <p>The standard error associated with the 2016 aerial photocensus spans the 200,000 animal threshold for the Conservative / Preservative Management levels. As such, it is possible the herd may be below 200,000, which would place it in the Preservative level set forth in the Management Plan.</p> <p>(see Biological Background, Current Events)</p>   |
| <p>Aircraft activity, concentration of hunting camps, and hunter positioning may be diverting caribou from critical corridors that in turn diverts them away from local communities. Concerns about herd deflection warrant additional investigation but, if occurring, such deflections could have long term detrimental impacts on subsistence opportunity for people that have economic, social and cultural dependence on caribou. Existing literature reports behaviorally and physiologically negative impacts on caribou by aircraft activity.</p> <p>(see <i>Cultural Knowledge and Traditional Practices - User Conflicts in Unit 23, Current Events</i>)</p> |
| <p>FQSUs are already subject to substantial harvest restrictions, with reductions of authorized harvest by two-thirds recently in Federal regulations. The percentage of harvest by these users exemplifies the importance of caribou as a subsistence resource.</p> <p>(see <i>Regulatory History, Harvest History - Harvest from Unit 23, Cultural Knowledge and Traditional Practices - User Conflicts in Unit 23</i>)</p>  |
| <p>Harvest restrictions do not go far enough in addressing the need for subsistence opportunity in the face of long-term WACH population decline. Prompt application of all available tools may be necessary to avoid a more precipitous decline that would restrict all subsistence harvest.</p> <p>(see <i>Regulatory History, Current Events</i>)</p>   |
| <p>Concentration of users on State lands may allow the herd to migrate relatively unimpeded along their major migration routes through Federal public lands.</p> <p>(see <i>Current Events</i>)</p>  |

Data and arguments addressing the continuation of subsistence uses in relation to WSA16-03 have been compiled for Board consideration. These data are summarized in **Table 8** and **Table 9**.



**Table 8.** Points to consider, affecting the continuation of subsistence uses of caribou on Federal public lands in Unit 23, that support opening Federal public lands to the harvest of caribou by all users.

| <b>APPROVE WSA16-03</b>  |
|--|
| <b>POINTS TO CONSIDER—CONTINUATION OF SUBSISTENCE USES</b>   |
| <p>The harvest levels of FQSUs has remained relatively constant in recent years. This suggests that they are meeting their subsistence needs and successfully harvesting caribou.</p> <p><i>(see Harvest History - Harvest from WACH &amp; Harvest from Unit 23)</i></p>   |
| <p>There is a significant economic hardship on non-FQSUs as a result of the closure. Hunting plans and time commitments must be modified or cancelled in response. This in turn affects transporters and guides that also provide logistical support for these hunters.</p> <p><i>(see Discussion, Current Events)</i></p>   |
| <p>Regardless of the duration of the closure, there are no mechanisms in place to evaluate the effectiveness of the closure in meeting its intended objectives. This closure does not provide temporary relief to FQSUs because it will concentrate non-FQSUs on State managed lands, increase tensions between users groups, and negatively affect former FQSUs that have since moved from the area but wish to continue hunting in Unit 23.</p> <p><i>(see Discussion, Current Events)</i></p> |
| <p>A large quantity of meat harvested by non-FQSUs in Unit 23 is distributed within local communities. Non-FQSUs are helping local people meet their caribou subsistence needs.</p> <p><i>(see Current Events)</i></p>   |
| <p>Non-FQSUs contribute to the economy of the region. They spend money in transportation, supplies and logistics supporting transporters, guides and others.</p> <p><i>(see Current Events)</i></p>  |
| <p>Non-FQSUs take relatively few animals from the region as compared to FQSUs, leaving the vast majority of the harvest for local subsistence uses.</p> <p><i>(see Harvest History - Harvest from WACH &amp; Harvest from Unit 23)</i></p>   |
| <p>Closures on Federal public lands will prevent non-FQSUs who previously lived in the area from accessing caribou in Unit 23.</p> <p><i>(see Discussion, Current Events)</i></p>  |
| <p>Trash, camp equipment, and ATV use is restricted to prevent habitat degradation. The extent of habitat degradation caused by FQSUs and non-FQSUs is unknown.</p> <p><i>(see Cultural Knowledge and Traditional Practices, Current Events)</i></p>   |

**Table 8.** Points to consider, affecting the continuation of subsistence uses of caribou on Federal public lands in Unit 23, that support opening Federal public lands to the harvest of caribou by all users.

| <b>APPROVE WSA16-03</b><br><b>POINTS TO CONSIDER—CONTINUATION OF SUBSISTENCE USES</b>   |
|---|
| User conflicts have been addressed through working groups, outreach campaigns, land management policies, and training requirements. State and Federal agencies are continuing to develop methods that reduce user conflicts in Unit 23.<br><i>(see Cultural Knowledge and Traditional Practices -User Conflicts in Unit 23, Current Events)</i>   |
| Transporters and guides work closely with local communities to address concerns regarding aircraft activity and its perceived effects on caribou harvest and migration.<br><i>(see Regulatory History, Current Events)</i>  |
| Aircraft activity will not cease under a closure. Other user groups will still be flying in the area including those hunting other species and accessing lands for recreational purposes, among other uses.<br><i>(see Cultural Knowledge and Traditional Practices - User Conflicts in Unit 23, Current Events)</i>  |
| The wildlife resources of Alaska are important to all of its residents, not just those in proximity to a given resource. Many non-FQSUs depend on and value access to caribou. There is also an aspect of cultural identity held by non-FQSUs who have hunted caribou in Unit 23 for years and/or through generations.<br><i>(see Discussion, Harvest History - Harvest from WACH &amp; Harvest from Unit 23, Current Events)</i> |
| Federal public lands are owned by all residents of the nation and equal access should be granted. No user group should be given preference.<br><i>(see Current Events)</i>  |

**Table 9.** Points to consider, affecting the continuation of subsistence uses of caribou on Federal public lands in Unit 23, that reject opening Federal public lands to the harvest of caribou by all users.

| <b>REJECT WSA16-03</b>  |
|---|
| <b>POINTS TO CONSIDER—CONTINUATION OF SUBSISTENCE USES</b>  |
| <p>FQSUs have to make more frequent hunting trips of longer duration and greater distance to achieve harvest levels similar to past harvest levels. Harvest success is variable among communities. Some communities report that user conflicts have negatively affected subsistence opportunity.</p> <p><i>(see Cultural Knowledge and Traditional Practices - User Conflicts in Unit 23, Current Events)</i></p>   |
| <p>ANILCA Title VIII provides a subsistence priority use on Federal public lands. There is a significant economic hardship experienced by FQSUs who must expend greater time, energy, and money to harvest caribou. Purchase of commercial food products is very expensive in rural Alaska. The temporary closure implemented by WSA16-01 is only for one regulatory year.</p> <p><i>(see Cultural Knowledge and Traditional Practices - User Conflicts in Unit 23, Current Events)</i></p>   |
| <p>In combination with the State’s regulatory changes, the effects of these restrictions can be evaluated following the relatively short duration of closure and alongside of new population data from a successful photo-census. In addition, this may alleviate some user conflict. The temporary closure implemented by WSA16-01 is effective for one regulatory year. Rescinding the closure prior to its full implementation would remove opportunities for determining the effects of a closure.</p> <p><i>(see Cultural Knowledge and Traditional Practices - User Conflicts in Unit 23, Current Events)</i></p> |
| <p>Donated meat is primarily distributed in Kotzebue and not in other Unit 23 communities. It sometimes arrives spoiled or is taken during the rut. Subsistence includes more than caloric intake. It is way of life. The receipt of meat does not provide for a meaningful subsistence experience or address the social and cultural aspects of the subsistence way of life.</p> <p><i>(see Cultural Knowledge and Traditional Practices - User Conflicts in Unit 23, Current Events)</i></p>  |
| <p>ANILCA Title VIII provides protection for the subsistence way of life and subsistence economies in rural Alaska. Furthermore, FQSUs report that non-FQSUs do not contribute substantially to the mixed cash-subsistence economy of the region as relatively few hunters purchase fuel and supplies from local communities.</p> <p><i>(see Current Events)</i></p>  |
| <p>The percentage of caribou taken by FQSUs suggests the significance of caribou as a locally available subsistence resource. This importance and the resultant impacts on human health that lack of access to caribou would cause are alarming in light of a declining herd. Additionally, the high intensity of activity related to harvest by non-FQSUs causes disruption of subsistence.</p> <p><i>(see Harvest History -Intensity of Use of Unit 23, Harvest History - Harvest from WACH &amp; Harvest from Unit 23, Current Events)</i></p>   |

**Table 9.** Points to consider, affecting the continuation of subsistence uses of caribou on Federal public lands in Unit 23, that reject opening Federal public lands to the harvest of caribou by all users.

| <b>REJECT WSA16-03</b>   |
|--|
| <b>POINTS TO CONSIDER—CONTINUATION OF SUBSISTENCE USES</b>   |
| <p>Non-FQSUs who previously lived in the area may still hunt on State land and, possibly, Native corporation land.</p> <p>(see <i>Current Events</i>)</p>  |
| <p>Public testimony and recent research (Halas 2015, Fix and Ackerman 2015) suggest that trash, camp equipment, and ATV use by non-FQSUs are contributing to habitat degradation and changes to caribou migration patterns.</p> <p>(see <i>Cultural Knowledge and Traditional Practices - User Conflicts in Unit 23, Current Events</i>)</p>   |
| <p>User conflicts between FQSUs and non-FQSUs have been ongoing for several decades without significant relief. Agency actions to date have not resolved user conflict. Ongoing conflicts appear to threaten subsistence opportunity for FQSUs. Harvest areas also continue to overlap, increasing user conflict.</p> <p>(see <i>Harvest History - Intensity of Use of Unit 23, Cultural Knowledge and Traditional Practices - User Conflicts in Unit 23, Current Events</i>)</p>  |
| <p>Local residents have reported that transporters and guides frequently fly at low altitudes around caribou herds and land in front of the migrating animals, causing herd diversion and deflection in critical corridors.</p> <p>(see <i>Cultural Knowledge and Traditional Practices - User Conflicts in Unit 23, Current Events</i>)</p>   |
| <p>The effects of various aircraft activities are unknown at this time. Other users may not be flying to the same areas, the same habitat types, or at the same altitudes. The existing one regulatory year closure may yield information that speaks to this issue.</p> <p>(see <i>Harvest History - Intensity of Use of Unit 23, Cultural Knowledge and Traditional Practices - User Conflicts in Unit 23, Current Events</i>)</p>   |
| <p>Changes in access to caribou may not be uniform in the region. In some areas where caribou harvest is low and other resources are not widely available, people may be going hungry. Non-FQSUs may be better financially situated to expend resources to hunt the animals in other areas. The Federal program under ANILCA Title VIII provides priority for subsistence use by residents residing in rural Alaska communities and possessing customary and traditional use findings for the resource.</p> <p>(see <i>Cultural Knowledge and Traditional Practices - User Conflicts in Unit 23, Current Events</i>)</p> |

**Table 9.** Points to consider, affecting the continuation of subsistence uses of caribou on Federal public lands in Unit 23, that reject opening Federal public lands to the harvest of caribou by all users.

| <b>REJECT WSA16-03</b>   |
|--|
| <b>POINTS TO CONSIDER—CONTINUATION OF SUBSISTENCE USES</b>   |
| Title VIII of ANILCA provides for a subsistence priority on Federal public lands in Alaska for FQSUs. It also grants authority to the Board to restrict the taking of fish and wildlife for nonsubsistence uses when certain criteria are met. This includes in situations where closures are necessary for the conservation of healthy populations of fish and wildlife and/or when necessary for the continuation of subsistence uses.<br><br>(see <i>Current Events</i> ) |

### **Additional Options for Board Consideration: Targeted Closures in Unit 23**

As described previously, the Board’s closure of Federal public lands to non-FQSUs was based on concerns pertaining to the continued decline of the WACH and to ensure the continuation of subsistence uses, especially in light of ongoing user conflicts and possible herd migration deflection by nonlocal hunters and their associated activities. Even with aerial survey data, population estimates associated with the WACH contain some uncertainty about the most appropriate management actions to follow from the WACH Management Plan. The population estimates derived from the 2016 aerial survey (200,928 animals), ADF&G’s population models, and improved herd characteristics indicate that the population decline may be slowing. However, the herd remains close to the management plan’s threshold for preservative management (see **Table 2**).

Questions remain as to whether restricting non-FQSU annual caribou harvest in Unit 23 will result in measurable advantages for the herd. Discussions about the current closure of caribou hunting in Unit 23 to all but FQSUs should also take into consideration ongoing conflict between user groups in the area and how this may affect the continuation of subsistence uses of caribou in the region, most notably through herd diversion and deflection by nonlocal hunter activities along migration routes, the concentration of nonlocal hunter camps along these routes, and nonlocal hunter positioning in front of migrating caribou.

As is evidenced by **Map 7**, **Map 8**, and **Figure 9**, and through extensive public testimony, the intensity of harvest activity for both FQSUs and non-FQSUs in Unit 23 occurs in the same general area. This area primarily consists of a coastal corridor in the westernmost section of Unit 23, extending along the mainstem of the Noatak River and south to the vicinity of Buckland. Communities located within this area of hunting intensity include Noatak, Sheshalik, Kiana, Noorvik, and Selawik. Other communities in the management unit may be affected by changes to herd migration but are not within this corridor.

The Squirrel River drainage has received considerable attention related to this issue. This drainage was discussed by members of the Northwest Arctic Council as being particularly problematic because of the intensity of use by “nonlocal” hunters and herd diversion at key locations in the upper part of the drainage, including the area between the Squirrel River and the Agashashok River. Members also mentioned

concerns regarding the intensity of hunting along the Baldwin Peninsula. The most intense hunting activities and harvest by “nonlocals” between 2005 and 2014 are within the Squirrel River drainage and the Baldwin Peninsula as is evidenced on **Map 7** and **Map 8**.

Opponents to the closure, including the proponent of WSA 16-03, have cited the large proportion of Unit 23 that includes Federal public lands (69%), the probable concentration of hunters on State land in the unit, and the relatively small percentage of the harvest that is taken annually by non-Federally qualified hunters as reasons for their opposition. Some non-Federally qualified hunters have also testified that the closure may negatively affect the herd by concentrating nonlocal hunters along other migration corridors or critical habitat areas. They have also testified that the closure presents substantial economic hardships for non-FQSUs that are forced to cancel or modify their hunting plans for the 2016 regulatory year. Additionally, some have testified that the closure will intensify user conflicts moving forward.

**Map 10** depicts the spatial extent of Federal public lands, State lands, Native Patent or Interim Conveyance Lands, and selected lands within Unit 23. Non-FQSUs are currently allowed to hunt caribou on State patent, tentative approval, and State selected lands which compose approximately 8,888 mi<sup>2</sup> within the unit.

Native patent/interim/selected conveyance lands (composing approximately 5,095 mi<sup>2</sup>) and Native allotments (approximately 263 mi<sup>2</sup>) include more variation on management and access authorities. These lands are primarily considered private lands and require landowner permission for hunting access. Importantly, some private land owners will allow hunting upon payment of a trespass fee and some corporations owning land will allow hunting by their shareholders and other designees. In short, without additional permissions, non-FQSUs may currently hunt on State patent or tentative approval land only.

In order to address subsistence user concerns about conservation and the continuation of subsistence uses in Unit 23 while also potentially mitigating the effects of the closure on non-FQSUs, the Board may wish to consider alternatives to the closure of all of Unit 23. Such alternatives could maintain the closure of Federal public lands in proximity to the high harvest intensity corridor mentioned previously and depicted on **Map 7**, **Map 8**, and **Figure 9**. This approach could potentially open a portion of Federal public lands in Unit 23 to non-Federally qualified hunters while reducing harvest intensity, herd diversion, and conflicts within the high harvest corridor. Local land managers, in collaboration with FQSUs, may be able to provide the Board with additional insight and precision for targeted closures if these are to be considered.

The Office of Subsistence Management has developed three examples that reflect corridors of high harvest activity (**Map 7**, **Map 8**, and **Figure 9**) and public testimony regarding areas of high user conflict. The examples provided below are offered to stimulate discussions about alternative options and represent a limited number of possible partial closure options that may be available. Local and traditional knowledge held by local residents and land managers may provide the additional insight necessary for targeted closures within Unit 23. For example, the Selawik National Wildlife Refuge Manager (Georgette 2016, pers. comm) raised questions about examples two and three because 1) they include areas largely utilized by former FQSUs and those with familial ties to the region and 2) closures in the southern portion of the Unit during the fall hunting season fail to reflect that most caribou are absent from the area at this time of year. It may also be worth noting that any partial re-opening of Unit 23 to non-FQSUs would eliminate the possibility of

evaluating the full impact of the closure on the conservation of the herd and the continuation of subsistence uses.

These examples are depicted in **Maps 11, 12, and 13**, and include:

- Closure within the entire Noatak River drainage in Unit 23 to include Federal public lands in Noatak National Preserve. Additional closures in Selawik National Wildlife Refuge west of a line through 160°W Longitude, Bureau of Land Management lands in the Squirrel River drainage, along the Buckland Peninsula and those in proximity to the communities of Buckland and Candle (**Map 11**).<sup>6</sup>
- Closure of all Federal public lands in Unit 23 to the west of a line through 160°W Longitude within Unit 23. This line runs through the community of Selawik (**Map 12**).
- Closure of all Federal public lands in Unit 23 to the east of a line through 163°W Longitude and west of a line through 160°W Longitude within Unit 23 (**Map 13**).

Each of the above examples includes closures on varying extents of Federal public land in Unit 23 (**Table 10**). A full closure encompasses the greatest percentage of Unit 23 (approximately 68%, followed by Example 1 (34%), Example 2 (28%), and Example 3 (21%).

**Table 10.** Percentage of land affected by different options.

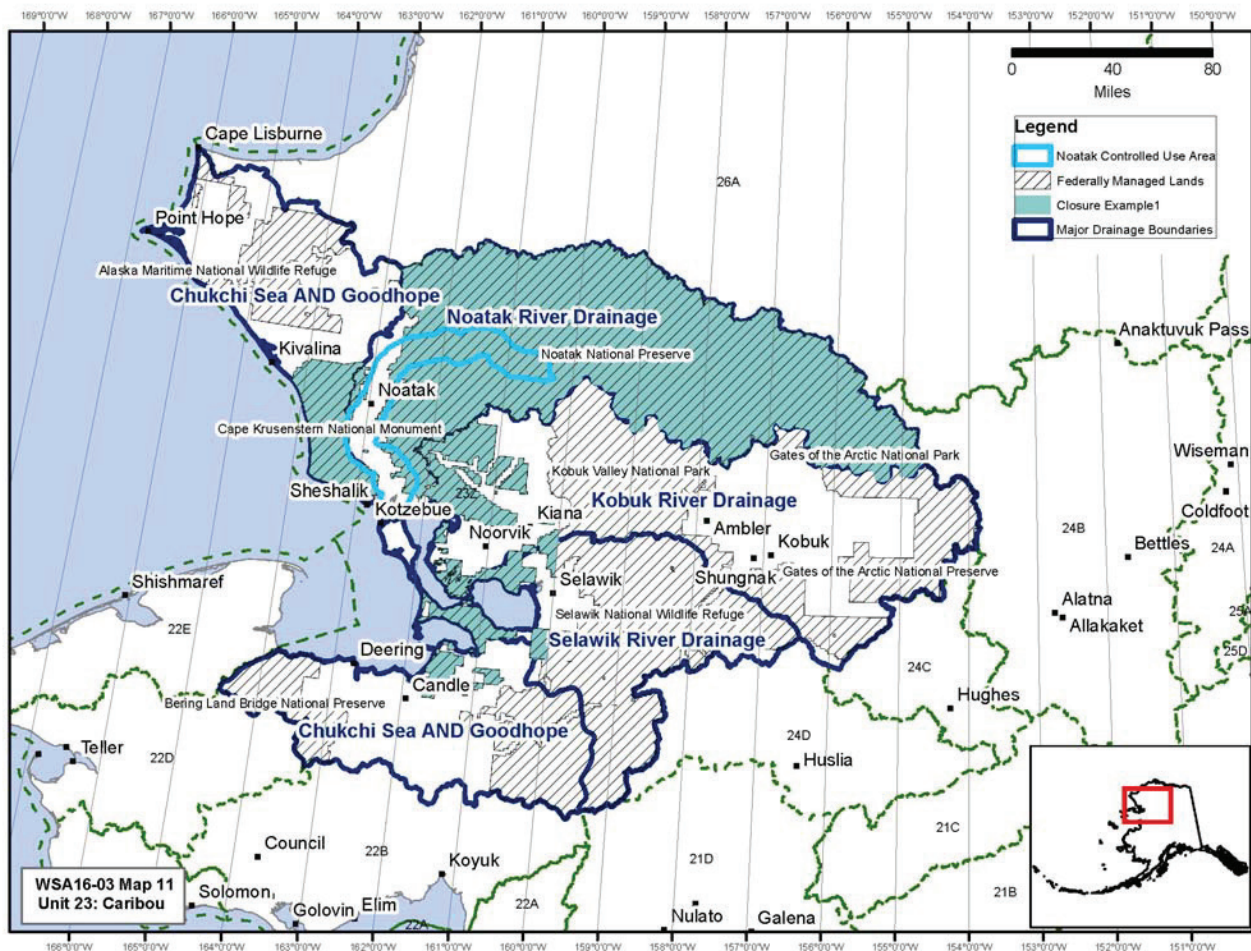
| Option       | % Unit 23 | % Federal public lands | Option Closure Area (mi <sup>2</sup> ) | Total Unit 23 Area (mi <sup>2</sup> ) | Total Federal public lands (mi <sup>2</sup> ) |
|--------------|-----------|------------------------|--|---------------------------------------|---|
| Full closure | 68        | 100                    | 32,298                                 | 43,402                                | 29,412  |
| 1            | 34        | 46                     | 14,862                                 |                                       |   |
| 2            | 28        | 37                     | 11,980                                 |                                       |   |
| 3            | 21        | 29                     | 9,307                                  |                                       |   |

Considering range maps produced for the WACH Cooperative Management Plan (2011; **Figures 10 and 11**), Examples 1–3 would provide non-Federally qualified hunters with substantial access to the herd in the eastern portion of their migration route. Access to the herd is most restrictive in Example 1 because this option maintains the closure of the entire Noatak River drainage, which may preserve movements of caribou both eastward and westward (toward Anaktuvuk Pass) within the drainage by limiting hunter disturbance. Additionally, the middle and upper Noatak River corridor was originally included in the traditional council of Noatak’s proposal to the Board of Game in March 1988 to create a Controlled Use Area to address user conflicts. The Board of Game amended to the proposal to include an area one third the size of the request, representing those areas where most subsistence hunting took place and where caribou were most vulnerable to “spooking” by aircraft (Fall 1990:1987). This example may therefore address

<sup>6</sup> National Parks and National Monuments are already closed to non-Federally qualified subsistence users. Therefore, Gates of the Arctic National Park, Kobuk Valley National Park and Cape Krusenstern National Monument are depicted in these examples but do not represent new closures to non-Federally qualified subsistence users on Federal public lands.

ongoing concerns not fully resolved by the Board of Game in 1988 or by the NPS Special Commercial Use Area created in 2012.

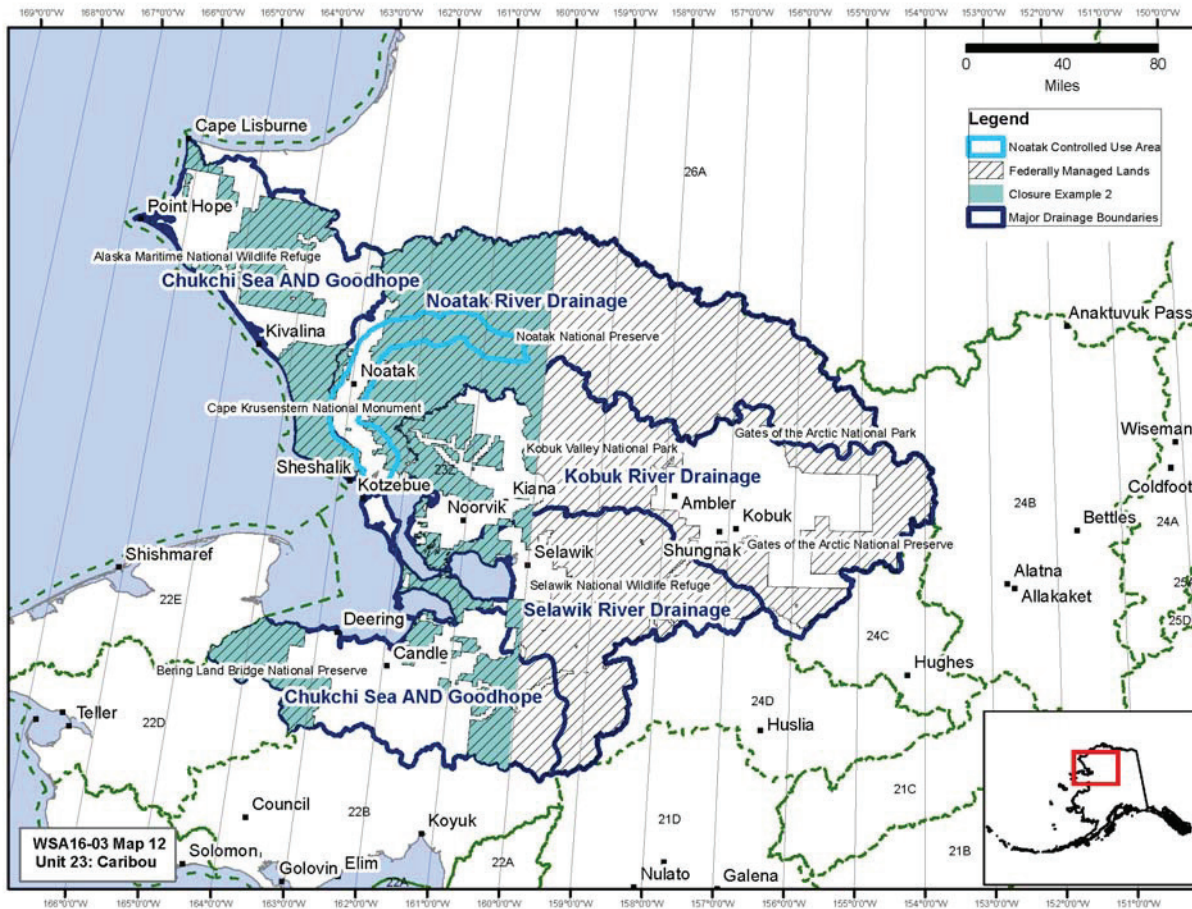
In each of the three examples discussed above, non-FQSUs would maintain access to Federal public lands within the largest fall and spring migration corridors located in the eastern portion of Unit 23 (see **Figure 9** [Part a] and **Figure 9** [Part b]) and hunting disturbances would be limited within the corridor identified as having received the greatest hunting pressure between 2005 and 2014, potentially resulting in improved herd migration to those areas. Southward herd movements in the fall (see **Figure 11** [Part a]) would possibly experience less disturbance by non-FQSUs in western corridors, potentially resulting in increased movements into those areas. Similarly, northward herd movements in the spring (**Figure 11** [Part b]) would receive less non-Federally qualified hunter disturbance in smaller western corridors.



**Map 11.** Federal public lands that would be closed to non-Federally qualified subsistence users under Example 1.<sup>7</sup>

<sup>7</sup> National Parks and National Monuments are already closed to non-Federally qualified subsistence users. Therefore, Gates of the Arctic National Park, Kobuk Valley National Park and Cape Krusenstern National Monument are de-

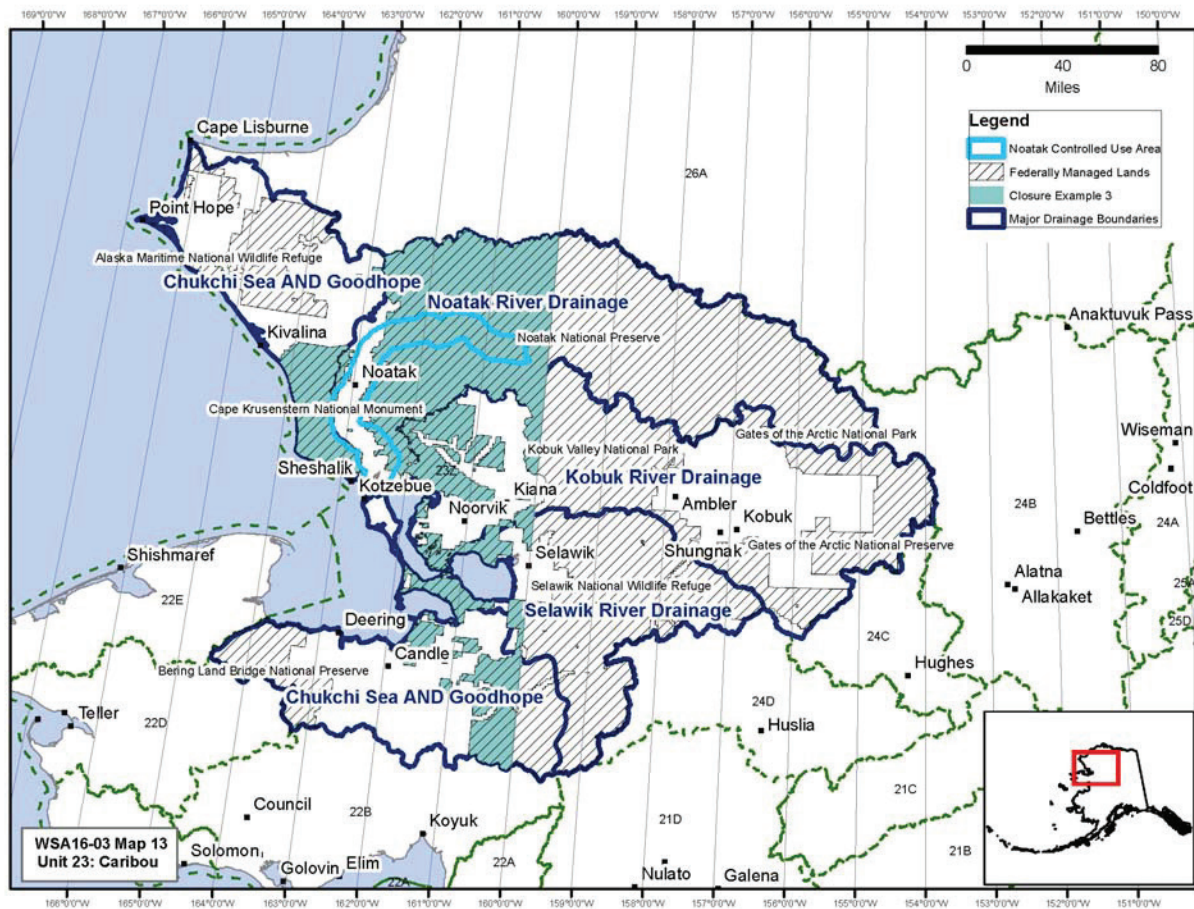




**Map 12.** Federal public lands that would be closed to non-Federally qualified subsistence users under Example 2.<sup>8</sup>

picted in these examples but do not represent new closures to non-Federally qualified subsistence users on Federal public lands.

<sup>8</sup> National Parks and National Monuments are already closed to non-Federally qualified subsistence users. Therefore, Gates of the Arctic National Park, Kobuk Valley National Park and Cape Krusenstern National Monument are depicted in these examples but do not represent new closures to non-Federally qualified subsistence users on Federal public lands.



**Map 13.** Federal public lands that would be closed to non-Federally qualified subsistence users under Example 3.<sup>9</sup>

<sup>9</sup> National Parks and National Monuments are already closed to non-Federally qualified subsistence users. Therefore, Gates of the Arctic National Park, Kobuk Valley National Park and Cape Krusenstern National Monument are depicted in these examples but do not represent new closures to non-Federally qualified subsistence users on Federal public lands.

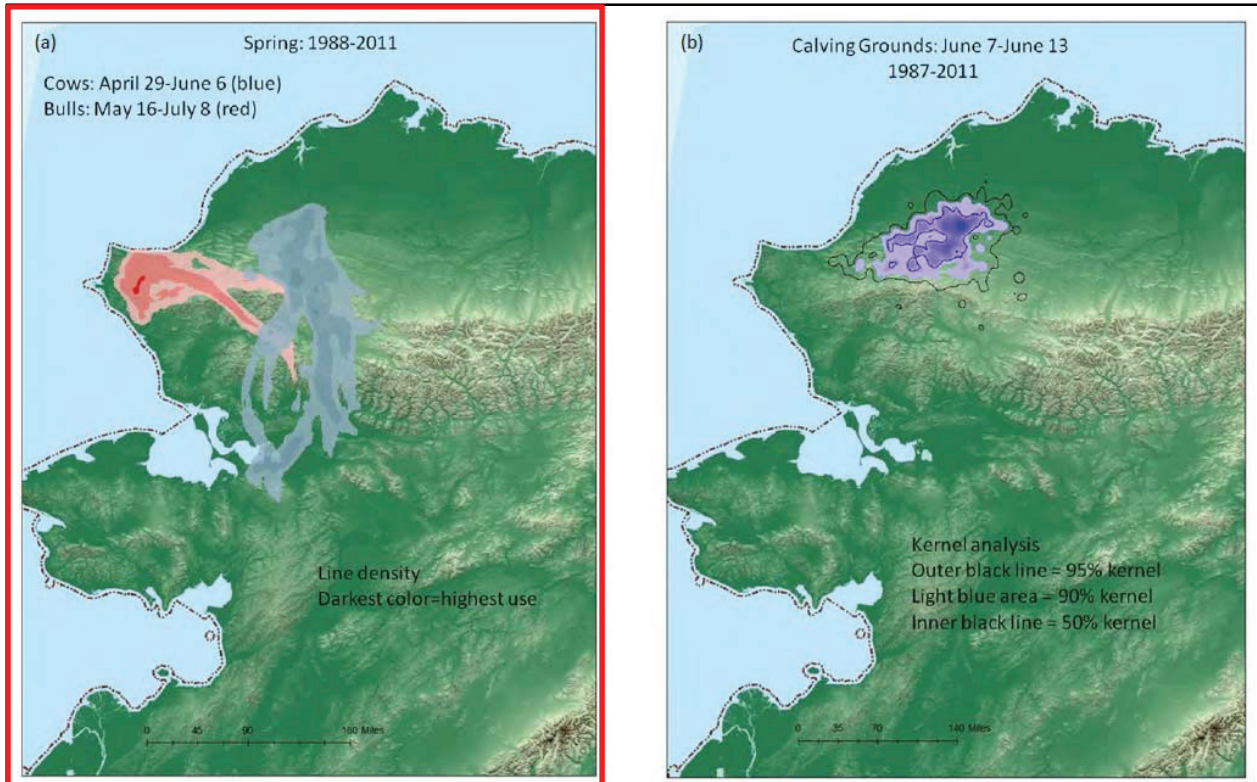
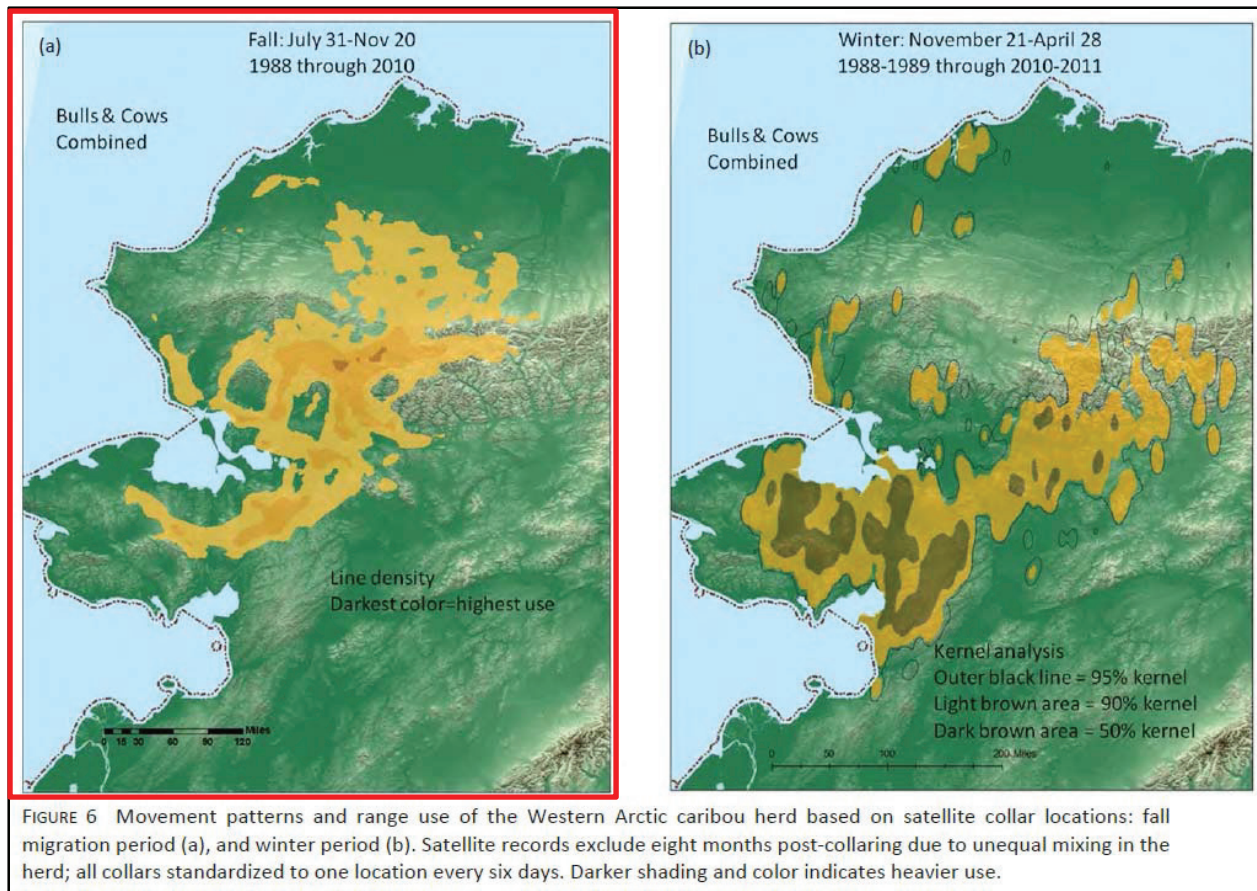


FIGURE 4 Movement patterns and range use of the Western Arctic caribou herd based on satellite collar locations: spring migration of cows and bulls (a), and calving grounds (b). Satellite records exclude eight months post-collaring due to unequal mixing in the herd; all collars standardized to one location every six days. Darker shading and color indicates heavier use.

**Figure 10.** Area used by WACH in spring 1988–2011 and calving grounds 1987–2011 (borrowed from Western Arctic Herd Cooperative Management Plan, 2011).



**Figure 11.** Area used by WACH in fall 1988 through 2010 and winter 1988 through 2010 (borrowed from Western Arctic Herd Cooperative Management Plan, 2011).

## LITERATURE CITED

- Ackerman, A. and P.J. Fix. 2015. Noatak National Preserve sport hunter survey. Caribou hunters from 2010-2013. Natural resources report. National Park Service.
- ADF&G. 1988. Regulatory Proposals Submitted to the Alaska Board of Game, March 1988. Division of Boards, Juneau.
- ADF&G. 1991. Customary and Traditional Worksheets. Arctic Region: North Slope Area: GMU's 23, 24, 26. Division of Subsistence, Juneau, Alaska.
- ADF&G. 1992. Customary and Traditional Worksheets. Northwest Alaska GMU's 22 and 23, Black Bear, Brown Bear, Caribou, Dall Sheep, Moose, Muskoxen. Division of Subsistence, Kotzebue, Alaska.
- ADF&G. 2015a. Alaska Board of Game Meeting Audio: Jim Dau Report on the Western Arctic Herd. Audio from meeting on 17 May 2015 beginning at timestamp 5:20:27. [http://www.adfg.alaska.gov/static/regulations/regprocess/gameboard/swf/2014-2015/20150313\\_SC/indexlan.html](http://www.adfg.alaska.gov/static/regulations/regprocess/gameboard/swf/2014-2015/20150313_SC/indexlan.html). Retrieved 23 August 2016.

ADF&G. 2015. RC069. Estimated total caribou harvest by community, per capita caribou harvest by community, and data sources, GMUs 21, 22, 23, 24 and 26: Western Arctic caribou herd and Teshekpuk caribou herd. Alaska Board of Game Meeting Information. Southcentral Region, March 13-18, 2015.

[http://www.adfg.alaska.gov/static/regulations/regprocess/gameboard/pdfs/2014-2015/Southcentral\\_03\\_13\\_15/rcs/rc069\\_ADFG\\_Caribou\\_harvest\\_data.pdf](http://www.adfg.alaska.gov/static/regulations/regprocess/gameboard/pdfs/2014-2015/Southcentral_03_13_15/rcs/rc069_ADFG_Caribou_harvest_data.pdf). Accessed: February 22, 2016.

ADF&G. 2016a. Summary of Regulatory Changes for 2015–2016. Alaska Board of Game Meeting Information. Meeting materials from the Alaska Board of Game meeting in Anchorage March 13–18, 2015.

<Http://www.adfg.alaska.gov/index.cfm?adfg=gameboard.meetinginfo&date=03-13-2015&meeting=anchorage>, accessed July 26, 2016.

ADF&G. 2016b. Community subsistence information system. <http://www.adfg.alaska.gov/sb/CSIS/>, accessed February 1. ADF&G. Division of Subsistence. Anchorage, AK.

ADF&G. 2016c. Harvest report online database. ADF&G, Anchorage, AK.

ADF&G. 2016d. GMU 23 Working Group. <http://www.adfg.alaska.gov/index.cfm?adfg=plans.unit23> Retrieved August 3<sup>rd</sup>, 2016.

ADOLWD. 2016. Cities and Census Designated Places, 2010 to 2015. <http://laborstats.alaska.gov/pop/popest.htm>, accessed February 1, 2016. Labor Market Information (Research and Analysis). Juneau, AK.

Betcher, S. 2016. “Counting on Caribou: Inupiaq Way of Life in Northwest Alaska”. Documentary video; duration 17:05. Farthest North Films. Available at <http://www.farthestnorthfilms.com/>. Accessed: August 26<sup>th</sup>, 2016.

Betchkal, D. 2015. Acoustic monitoring report, Noatak National Preserve – 2013 and 2014. National Park Service. file:///C:/Users/lmaas/Downloads/NOAT\_Soundscape\_Inventory\_Report\_2013\_-\_2014\_Final\_v2.pdf. Accessed: February 25, 2016.

BLM. 2011. Squirrel River Management Plan Scoping Report. Bureau of Land Management, Central Yukon Field Office. Fairbanks, AK.

[http://www.blm.gov/style/medialib/blm/ak/fdo/Squirrel\\_River\\_Plan.Par.82919.File.dat/Squirrel\\_scoping\\_report\\_Final\\_Sept2011.pdf](http://www.blm.gov/style/medialib/blm/ak/fdo/Squirrel_River_Plan.Par.82919.File.dat/Squirrel_scoping_report_Final_Sept2011.pdf) 56 pp. Retrieved: July 18, 2016.

Bradshaw, C.J., S. Boutin, and D.M. Hebert. 1997. Effects of petroleum exploration on woodland caribou in northeastern Alberta. *The Journal of wildlife management*. 1127-1133.

Braem, N.M., S. Pedersen, J. Simon, D. Koster, T. Kaleak, P. Leavitt, J. Paktotak, and P. Neakok. 2011. Monitoring of caribou harvests in the National petroleum Reserve in Alaska: Atqusuk, Barrow, and Nuiqsut, 2003-2007. ADF&G, Division of the Subsistence, Technical Paper No 361, ADF&G, Fairbanks, AK

Braem, N.M., E.H. Mikow, S.J. Wilson, M.L. Kostick. 2015. Wild food harvests in three upper Kobuk River communities: Ambler, Shungnak, and Kobuk, 2012-2013. ADF&G Division of Subsistence, Technical Paper No. 402. Fairbanks, AK.

Burch, Jr., E. S. 1984. The Kotzebue Sound Eskimo. In Handbook of North American Indians--Arctic. Volume 5. Edited by David Damas. Smithsonian Institution, Washington, D.C.

Burch, Jr., E. S. 1994. The Cultural and Natural Heritage of Northwest Alaska. Volume V. Nana Museum of the Arctic, Kotzebue, Alaska and U.S. National Parle Service, Alaska Region. Anchorage, Alaska.

Burch, E.S. 1998. The Inupiaq Eskimo nations of Northwest Alaska. University of Alaska Press. Fairbanks, AK.

Burch, E.S. 2012. Caribou herds of Northwest Alaska. University of Alaska Press. Fairbanks, AK.

Calef, G.W., E.A. DeBock, and G.M. Lortie. 1976. The reaction of barren-ground caribou to aircraft. *Arctic*:201-212.

Caribou Trails 2014. News from the Western Arctic Caribou Herd Working Group. Western Arctic Caribou Herd Working Group, Nome, AK. Issue 14.

[http://westernarcticcaribou.org/wp-content/uploads/2014/07/CT2014\\_FINAL\\_lowres.pdf](http://westernarcticcaribou.org/wp-content/uploads/2014/07/CT2014_FINAL_lowres.pdf). Retrieved: June 23, 2015.

Dau, J. 2009. Units 21D, 22A, 22B, 22C, 22D, 22E, 23, 24, and 26A in Caribou survey–inventory management report. Pages 176-239 in P. Harper, editor. Caribou management report of survey and inventory activities July 1, 2006– June 30, 2008. ADF&G. Juneau, AK

Dau, J. 2011. Units 21D, 22A, 22B, 22C, 22D, 22E, 23, 24, and 26A caribou management report. Pages 187-250 in P. Harper, editor. Caribou management report of survey and inventory activities July 1, 2008–30 June 30, 2010. ADF&G. Juneau, AK.

Dau, J. 2013. Units 21D, 22A, 22B, 22C, 22D, 22E, 23, 24, and 26A caribou management report. Pages 201-280 in P. Harper, editor. Caribou management report of survey and inventory activities July 1, 2010–30 June 30, 2012. ADF&G. Juneau, AK.

Dau, J. 2014. Wildlife Biologist. Western Arctic Caribou Herd presentation. Western Arctic Caribou Herd Working Group Meeting, December 17-18, 2014. Anchorage, Alaska. ADF&G. Nome, AK.

Dau, J. 2015a. Units 21D, 22A, 22B, 22C, 22D, 22E, 23, 24 and 26A. Chapter 14, pages 14-1 through 14-89. In P. Harper, and Laura A. McCarthy, editors. Caribou management report of survey and inventory activities 1 July 2012–30 June 2014. Alaska Department of Fish and Game, Species Management Report ADF&G/DWC/SMR-2015-4, Juneau.

Dau, J. 2015b. Wildlife Biologist. Letter to the WACH Working Group members. Western Arctic Caribou Herd Working Group meeting. Dec. 16-17. Anchorage, AK.

Dau, J. 2016a. Memorandum to S. Machida dated June 21, 2016. 2016 Western arctic caribou herd calving survey: 4-12 June. ADF&G Division of Wildlife Conservation, Fairbanks, AK. 1 page.

Dau, J. 2016b. Memorandum to S. Machida dated April 26, 2016. 2016 Western Arctic caribou herd recruitment survey: 31 March and 5, 19, and 21 April. ADF&G Division of Wildlife Conservation, Fairbanks, AK. 1 page.

Fall, J.A. 1990. The Division of Subsistence of the Alaska Department of Fish and Game: An Overview of its Research Program and Findings: 1980-1990. *Arctic Anthropology* 27(2): 68-92.

Flydal K, P. Jordhoy, C. Nellemann, E. Reimers, O. Strand, and I Vistnes. 2002. Rapport fra REIN-posjektet. The Research Council of Norway.

- Foote, D. C. 1959. The Economic Base and Seasonal Activities of Some Northwest Alaskan Villages: A Preliminary Study. U.S. Atomic Energy Commission.
- Foote, D. C. 1961. A Human Geographical Study in Northwest Alaska. Final Report of the Human Geographic Studies Program, U.S. Atomic Energy Commission.
- FWS. 1995a. Staff analysis P97-051. Pages 334-339 in Federal Subsistence Board Meeting materials April 10-14, 1995. Office of Subsistence Management, USFWS. Anchorage, AK. 398pp.
- FWS. 1995b. Staff analysis P95-062. Pages 399-404 in Federal Subsistence Board Meeting materials April 10-14, 1995. Office of Subsistence Management, USFWS. Anchorage, AK. 488pp.
- FWS. 1997. Staff analysis P97-066. Pages 879-895 in Federal Subsistence Board Meeting materials April 7-11, 1997. Office of Subsistence Management, USFWS. Anchorage, AK. 1034pp.
- FWS. 2000a. Staff analysis P00-053. Pages 563-573 in Federal Subsistence Board Meeting materials May 2-4, 2000. Office of Subsistence Management, USFWS. Anchorage, AK. 661pp.
- FWS. 2011. Revised Comprehensive Plan for Selawik National Wildlife Refuge Summary. U.S. Fish and Wildlife Service, Region 7. [https://www.fws.gov/alaska/nwr/planning/pdf/selawik/final\\_ccp\\_summary.pdf](https://www.fws.gov/alaska/nwr/planning/pdf/selawik/final_ccp_summary.pdf) Retrieved: July 22, 2016.
- FWS. 2014. FY2014 Annual report reply to the Northwest Arctic Subsistence Regional Advisory Council. Office of Subsistence Management, USFWS. Anchorage, AK.
- FWS. 2016a. Proposal document library. On file, OSM, Anchorage, AK.
- FWS. 2016b. Special use permit database. Unpublished data. Selawik National Wildlife Refuge. Kotzebue, AK.
- FWS 2016c. Harvest permit database. On file, OSM, Anchorage, AK.
- FWS 2016d. Selawik National Wildlife Refuge: Permits. <https://www.fws.gov/refuge/Selawik/visit/permits.html> Retrieved July 22, 2016.
- Georgette, S. and H. Loon. 1988. The Noatak River: Fall caribou hunting and airplane use. Technical Paper No. 162. ADF&G, Division of Subsistence. Kotzebue, AK.
- Georgette, S., and H. Loon. 1993. Subsistence use of fish and wildlife in Kotzebue, a Northwest Alaska regional center. ADF&G, Division of Subsistence, Technical Paper No. 167. Fairbanks, AK.
- Georgette, S. 1994. Summary of Western Arctic Caribou Herd overlays (1984-1992) and comparison with harvest data from other sources. Unpublished manuscript. ADF&G, Division of Subsistence, Fairbanks, AK. 26 pp.
- Georgette, S. 2016. Manager. Personal communication: by email. Selawik National Wildlife Refuge, Kotzebue, AK.
- Gunn, A. 2001. Voles, lemmings and caribou – population cycles revisited? Rangifer, Special Issue. 14: 105-111.

- Halas, G. 2015. Caribou migration, subsistence hunting, and user group conflicts in Northwest Alaska: A traditional knowledge perspective. University of Fairbanks-Alaska. Fairbanks, AK.
- Harrington, A.M. and P.J. Fix. 2009. Benefits based management study for the Squirrel River area. Project report for USDI Bureau of Land Management. Department of Resources management. University of Alaska-Fairbanks. Fairbanks, AK.
- Harrington, F.H. and A.M. Veitch. 1991. Short-term impacts of low-level jet fighter training on caribou in Labrador. *Arctic*:318-327.
- Holand, O., R.B. Weladji, A. Mysterud, K. Roed, E. Reimers, M. Nieminen. 2012. Induced orphaning reveals post-weaning maternal care in reindeer. *European Journal of Wildlife Research*. 58: 589-596.
- Jacobson, C. 2008. Fall hunting in game management unit 23: assessment of issues and proposals for a planning process. ADF&G. Unpublished report. Juneau, AK.
- Joly, K. 2000. Orphan Caribou, *Rangifer tarandus*, Calves: A re-evaluation of overwinter survival data. *The Canadian Field Naturalist*. 114: 322-323.
- Joly, K., R.R. Jandt, C.R. Meyers, and J.M. Cole. 2007. Changes in vegetative cover on the Western Arctic herd winter range from 1981–2005: potential effects of grazing and climate change. *Rangifer Special Issue 17*:199-207.
- Joly, K. 2015. Wildlife Biologist, Gates of the Arctic National Park and Preserve. Personal communication. email NPS. Fairbanks, AK.
- Klein, D. R., Moorehead, L., Kruse, J., & Braund, S. R. (1999). Contrasts in use and perceptions of biological data for caribou management. *Wildlife Society Bulletin*, 488-498.
- Kruse, J., Klein, D., Braund, S., Moorehead, L., & Simeone, B. (1998). Co-management of natural resources: a comparison of two caribou management systems. *Human Organization*, 57(4), 447-458.
- Lenart, E. A. 2011. Units 26B and 26C caribou. Pages 315-345 in P. Harper, editor. Caribou management report of survey and inventory activities 1 July 2008–30 June 2010. ADF&G. Project 3.0. Juneau, AK.
- Loon, H. 2007. *Uqausriptigun* in our own words: Selawik elders speak about caribou, reindeer and life as they knew it. USFWS, Selawik National Wildlife Refuge. Kotzebue, AK.
- Luick, B.R., J.A. Kitchens, R.G. White, R.G. and S.M. Murphy. 1996. Modeling energy and reproductive costs in caribou exposed to low flying military jet aircraft. *Rangifer 16*(4):209-212.
- Magdanz, J.S., D.S. Koster, L. Naves, and P. Fox. 2011. Subsistence harvests in northwest Alaska, Buckland and Kiana, 2003 and 2006. Alaska Department of Fish and Game, Division of subsistence Technical Paper No. 363. Anchorage, AK.
- Maier, J.A., S.M. Murphy, R.G. White, and M.D. Smith. 1998. Responses of caribou to overflights by low-altitude jet aircraft. *The Journal of wildlife management*:752-766.



- Miller, F.L. 2003. Caribou (*Rangifer tarandus*). Pages 965-997 in Feldhamer, B.C. Thompson, and J.A. Chapman, eds. Wild Mammals of North America- Biology, Management, and Conservation. John Hopkins University Press. Baltimore, Maryland.
- NPS. 2016. Resource protection update and coordination summary. Subsistence Resource Commission February 2016 Meeting. National Park Service. Kotzebue, AK.
- NSRAC. 2015. Transcripts of the North Slope Subsistence Regional Advisory Council proceedings, November 4, 2015 in Anaktuvuk Pass, AK. Office of Subsistence Management, FWS. Anchorage, AK.
- NSRAC. 2016. Transcripts of the North Slope Subsistence Regional Advisory Council proceedings. October 16, 2016. Barrow, AK. Office of Subsistence Management, USFWS. Anchorage, AK.
- NWARAC. 2015. Transcripts of the Northwest Arctic Subsistence Regional Advisory Council proceedings, October 7, 2015 in Buckland, AK. Office of Subsistence Management, FWS. Anchorage, AK.
- NWARAC. 2016. Transcripts of the Northwest Arctic Subsistence Regional Advisory Council proceedings, March 10, 2016 in Anchorage, AK. FWS Office of Subsistence Management. Anchorage, AK.
- NWARAC AND NSRAC. 2016. Transcripts of the Joint Meeting of Northwest Arctic and North Slope Subsistence Regional Advisory Council proceedings. March 11, 2016 in Anchorage, AK. Office of Subsistence Management, FWS. Anchorage, AK.
- OSM. 2007. Policy on closures to hunting, trapping and fishing on Federal public lands and waters in Alaska. Federal Subsistence Board. Office of Subsistence Management. Anchorage, AK.
- Parrett, L.S. 2011. Units 26A, Teshekpuk caribou herd. Pages 283-314 in P. Harper, editor. Caribou management report of survey and inventory activities 1 July 2008–30 June 2010. ADF&G.. Project 3.0. Juneau, AK.
- Parrett, L.S. 2013. Unit 26A, Teshekpuk caribou herd. Pages 314-355 in P. Harper, editor. Caribou management report of survey and inventory activities 1 July 2006–30 June 2008. ADF&G species management report. ADF&G/DWC/SMR-2013-3, Juneau, AK.
- Parrett, L., J. Dau, M. Nedwick. 2014. Four North slope caribou herds counted behind the numbers: how are the caribou? Alaska Fish & Wildlife News. Aug. 2014. [http://www.adfg.alaska.gov/index.cfm?adfg=wildlifeneews.view\\_article&articles\\_id=678](http://www.adfg.alaska.gov/index.cfm?adfg=wildlifeneews.view_article&articles_id=678). Accessed Aug. 30, 2016.
- Parrett, L.S. 2015a. Western Arctic Caribou Herd Overview presentation. Presented at the Western Arctic Caribou Herd Working Group meeting. Dec. 16-17. Anchorage, AK.
- Parrett, L.S. 2015b. What happens next? Harvest and Regulations in the Future presentation. Presented at the Western Arctic Caribou Herd Working Group meeting. Dec. 16-17. Anchorage, AK.
- Parrett, L.S. 2015c. Memorandum to P. Bente, Management Coordinator, dated October 29, 2015. 2015 Western Arctic Herd (WAH) captured conducted September 15-17, 2015. ADF&G Division of Wildlife Conservation, Fairbanks, AK. 1 page.

Parrett, L.S. 2016a. Wildlife biologist. Personal communication: by email. ADF&G Division of Wildlife Conservation, Fairbanks, AK. 1 page.

Parrett, L.S. 2016b. Memorandum for distribution, dated August 25, 2016. Summary of Western Arctic Caribou Herd photocensus conducted July 1, 2016. ADF&G Division of Wildlife Conservation, Fairbanks, AK. 6 pages.

Prichard, A.K. 2009. Development of a Preliminary Model for the Western Arctic Caribou Herd. ABR, Inc. – Environmental Research and Services. Fairbanks, AK.

Russell, D.E., S.G. Fancy, K.R. Whitten, R.G. White. 1991. Overwinter survival of orphan caribou, *Rangifer tarandus*, calves. *Canadian Field Naturalist*. 105: 103-105.

Rughetti, M., M. Festa-Bianchet. 2014. Effects of selective harvest of non-lactating females on chamois population dynamics. *Journal of Applied Ecology*. 51: 1075-1084.

Satterthwaite-Phillips, D., C. Krenz, G. Gray and L. Dodd. 2016. Iñuunialiqput Iļiļugu Nunanņuanun (Documenting Our Way of Life through Maps). Northwest Arctic Borough. Kotzebue, AK. Pp. 558.

Selawik National Wildlife Refuge. 2016. Western Arctic Caribou Herd Working Group draft 2015 meeting summary. On file.

[https://www.fws.gov/uploadedFiles/Region\\_7/NWRS/Zone\\_2/Selawik/PDF/2015%20WACH%20WG%20Meeting%20Summary%20-%20DRAFT%20For%20Webposting.pdf](https://www.fws.gov/uploadedFiles/Region_7/NWRS/Zone_2/Selawik/PDF/2015%20WACH%20WG%20Meeting%20Summary%20-%20DRAFT%20For%20Webposting.pdf), accessed September 13, 2016.

Seppi, B. 2016. Wildlife Biologist. Personal communication: email. Bureau of Land Management. Anchorage, AK.

Sutherland, R. 2005. Harvest estimates of the Western Arctic caribou herd, Alaska. Proceedings of the 10<sup>th</sup> North American Caribou Workshop. Girdwood, AK. 4-6 May 2004. *Rangifer* Special Issue No. 16: 177-184.

Taillon, J., V. Brodeur, M. Festa-Bianchet, S.D. Cote. 2011. Variation in body condition of migratory caribou at calving and weaning: which measures should we use? *Ecoscience*. 18(3): 295-303.

Trent, J., Kruse, J., & Leask, L. (1996). Understanding Harvest Assessment in the North. Girdwood, Alaska: Alaska Department of Fish & Game. Institute of Social and Economic Research.

Uhl, W. R. and C. K. Uhl. 1979. The Noatak National Preserve: Nuatalanitt, A Study of Subsistence Use of Renewable Resources in the Noatak River Valley. Cooperative Park Studies Unit, University of Alaska, Fairbanks, Occasional Paper No. 19.

Unit 23 Working Group. 2016. Meeting Summary of Unit 23 Working Group Meeting held in Kotzebue, Alaska on May 4-5, 2016.

Usher, P. J. (1995). Co-management of natural resources: Some aspects of the Canadian experience. *Human ecology and climate: People and resources in the Far North*. Washington: Taylor & Francis, 197-206.

Valkenburg, P. and J.L. Davis. 1985. The reaction of caribou to aircraft: a comparison of two herds. In *Proceedings of the North American Caribou Workshop* (1):7-9.

Vistnes, I. and C. Nellemann. 2008. The matter of spatial and temporal scales: a review of reindeer and caribou response to human activity. *Polar Biology*, 31(4):399-407.

Western Arctic Caribou Herd Working Group. 2011. Western Arctic Caribou Herd Cooperative Management Plan – Revised December 2011. Nome, AK 47 pp.

Western Arctic Caribou Herd Working Group. 2015. Western Arctic Caribou Herd Cooperative Management Plan Table 1 Revision – December 2015.

[https://www.fws.gov/uploadedFiles/Region\\_7/NWRS/Zone\\_2/Selawik/PDF/WAH%20coop%20mgt%20plan%202011%20-%20Table%201%20Revision%202015.pdf](https://www.fws.gov/uploadedFiles/Region_7/NWRS/Zone_2/Selawik/PDF/WAH%20coop%20mgt%20plan%202011%20-%20Table%201%20Revision%202015.pdf). Accessed September 12, 2016.

WIARAC. 2016. Transcripts of the Western Interior Alaska Subsistence Regional Advisory Council proceedings. October 16, 2016. Galena, AK. Office of Subsistence Management USFWS. Anchorage, AK.

Wolfe, S.A., B. Griffith, and C.A.G. Wolfe. 2000. Response of reindeer and caribou to human activities. *Polar Research*, 19(1):63-73.

APPENDIX 1

**Appendix Table 1-1.** The harvest and use of caribou by communities in Unit 23, based on household surveys, by study year.

| CARIBOU HARVEST           |            |  |                   |                |                 |            |                         |
|---------------------------|------------|--|-------------------|----------------|-----------------|------------|-------------------------|
| HOUSEHOLD HARVEST SURVEYS |            |  |                   |                |                 |            |                         |
| Community                 | Study year | Percentage of households using caribou | Caribou harvest   |                |                 |            |                         |
|                           |            |  | Estimated Harvest | Lower Estimate | Higher Estimate | Per Person | 95% confidence interval |
|                           |            |  | (caribou)         | (caribou)      | (caribou)       | (lb)       | (+/- %)                 |
| Ambler                    | 2012       | 91                                     | 685               | 646            | 845             | 330        | 23                      |
|                           | 2009       | 78                                     | 456               | 380            | 531             | 260        | 17                      |
|                           | 2003       | 95                                     | 325               | 301            | 361             | 176        | 11                      |
| Buckland                  | 2009       | 67                                     | 535               | 448            | 622             | 168        | 16                      |
| Deering                   | 2007       | 87                                     | 182               | 121            | 243             | 162        | 34                      |
|                           | 1994       | 78                                     | 142               | 119            | 174             | 131        | 22                      |
| Kiana                     | 2009       | 77                                     | 414               | 358            | 471             | 149        | 14                      |
|                           | 2006       | 94                                     | 306               | 264            | 347             | 109        | 13                      |
|                           | 1999       | 97                                     | 488               | 393            | 582             | 174        | 19                      |
| Kivalina                  | 2010       | 79                                     | 86                | 52             | 120             | 32         | 40                      |
|                           | 2007       | 93                                     | 268               | 190            | 347             | 85         | 29                      |
|                           | 1992       | 97                                     | 351               | 316            | 386             | 138        | 9                       |
|                           | 1983       |  | 564               |                |                 | 284        |                         |
|                           | 1982       |  | 346               |                |                 | 179        |                         |
|                           | 1965       |  | 1,010             |                |                 | 830        |                         |
|                           | 1964       |  | 256               |                |                 | 209        |                         |
| Kobuk                     | 2012       | 93                                     | 119               | 133            | 139             | 98         | 17                      |
|                           | 2009       | 86                                     | 210               | 178            | 245             | 194        | 17                      |
|                           | 2004       | 89                                     | 134               | 134            | 134             | 148        | 0                       |
| Kotzebue                  | 2012       | 82                                     | 1,804             | 1,803          | 1,804           | 80         | 22                      |
|                           | 1991       | 93                                     | 3,782             | 2,520          | 5,044           | 141        | 33                      |
|                           | 1986       | 88                                     | 1,917             |                |                 | 97         |                         |
| Noatak                    | 2010       | 56                                     | 66                | 45             | 87              | 16         | 32                      |
|                           | 2007       | 97                                     | 442               | 373            | 510             | 114        | 15                      |
|                           | 2002       | 91                                     | 410               | 374            | 446             | 120        | 9                       |
|                           | 1999       | 96                                     | 683               | 621            | 755             | 224        | 11                      |
|                           | 1994       | 91                                     | 615               | 550            | 680             | 221        | 10                      |
| Noorvik                   | 2012       | 95                                     | 851               | 609            | 1,094           | 198        | 29                      |
|                           | 2008       | 94                                     | 767               | 692            | 842             | 174        | 10                      |
|                           | 2002       | 95                                     | 988               | 794            | 1,182           | 182        | 20                      |
| Selawik                   | 2011       | 97                                     | 683               | 433            | 934             | 109        | 37                      |
|                           | 2006       |  | 934               | 833            | 1,035           | 165        | 10                      |
|                           | 1999       | 97                                     | 1,289             | 1,188          | 1,390           | 249        | 8                       |
| Shungnak                  | 2012       | 93                                     | 396               | 351            | 509             | 196        | 29                      |
|                           | 2008       | 95                                     | 406               | 341            | 471             | 218        | 16                      |
|                           | 2002       | 98                                     | 403               | 381            | 436             | 220        | 8                       |
|                           | 1998       | 100                                    | 561               | 541            | 596             | 312        | 6                       |

Source: ADF&G 2016b. Blank cell=data not available.

APPENDIX 2

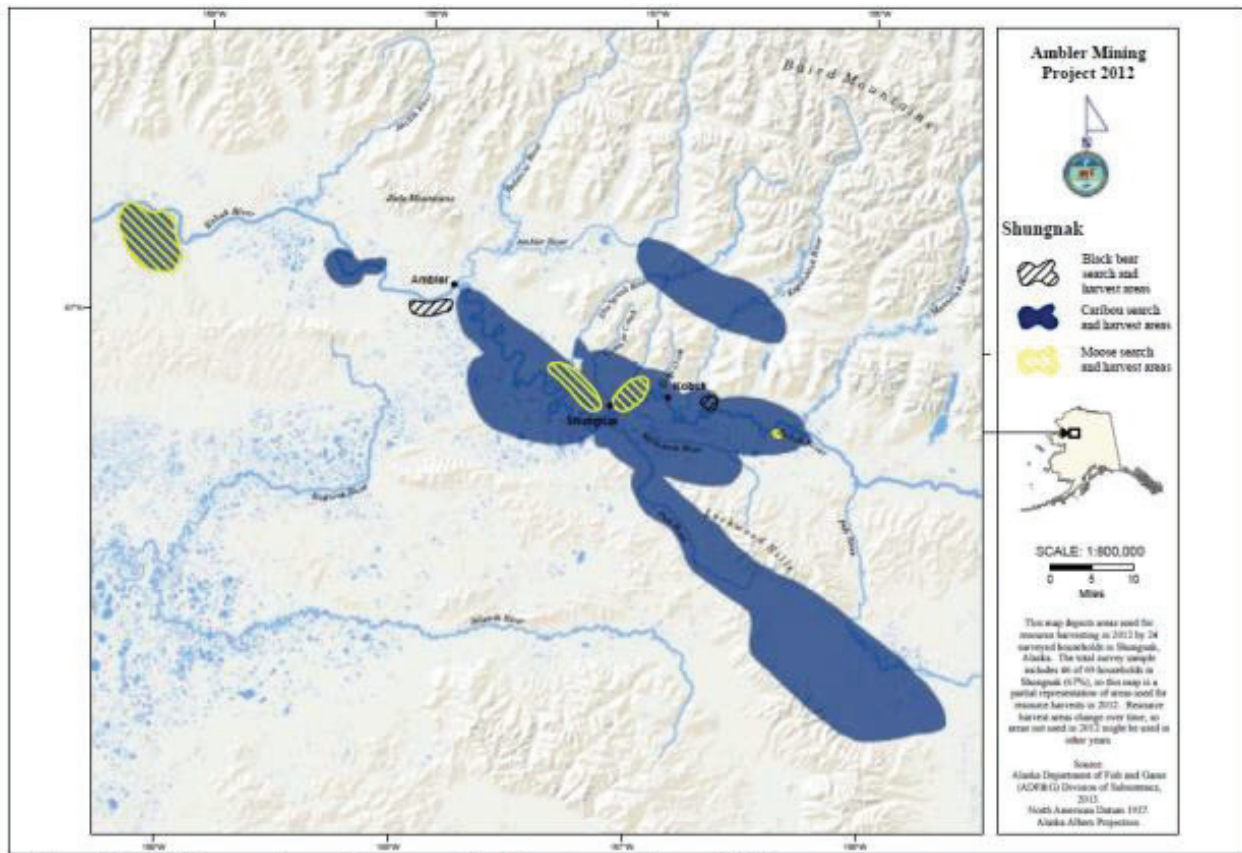


Figure 3-12.—Black bear, caribou, and moose search and harvest areas, Shungnak, 2012.

**Appendix Map 2-1.** Map depicting caribou, black bear, and moose search and harvest areas by residents of Shungnak in 2012 (Magdanz et al. 2011).

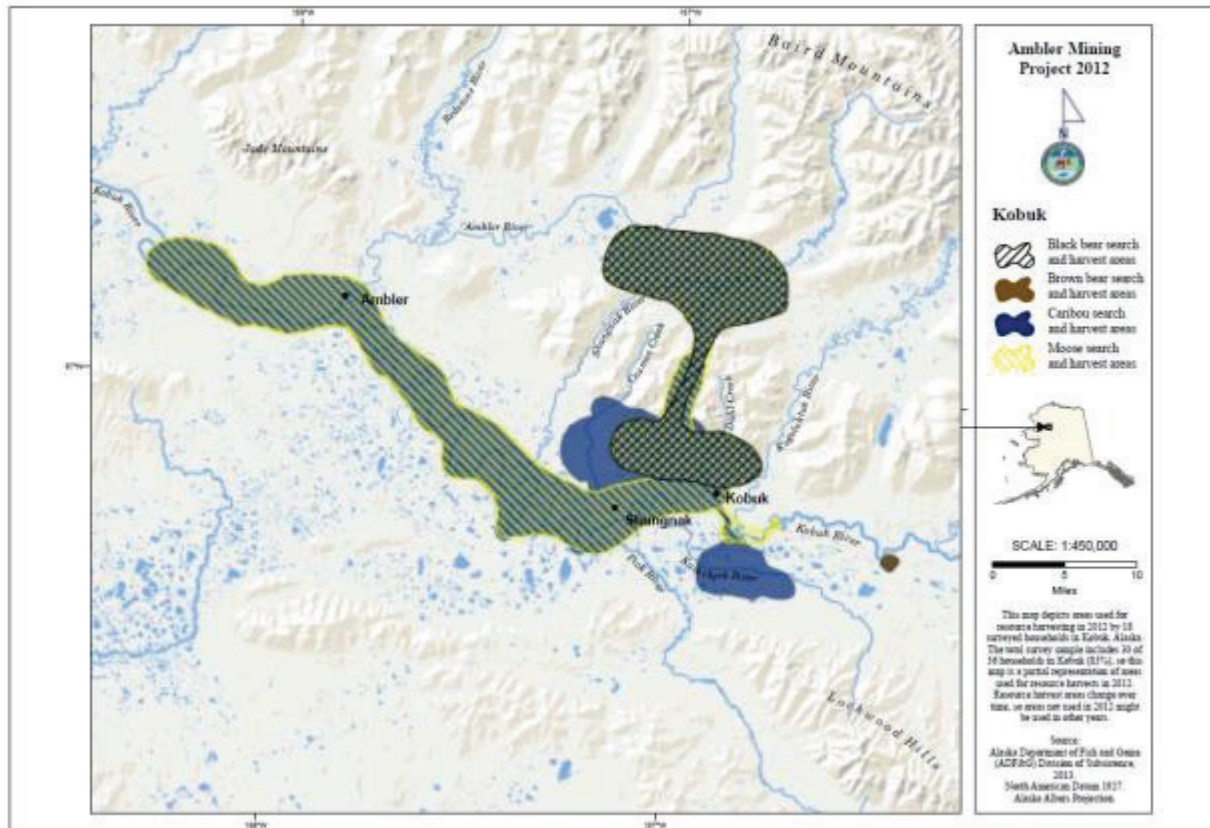


Figure 4-12.—Black bear, brown bear, caribou, and moose search and harvest areas, Kobuk, 2012.

**Appendix Map 2-2.** Map depicting caribou, black bear, brown bear, and moose search and harvest areas by residents of Kobuk in 2012 (Magdanz et al. 2011).

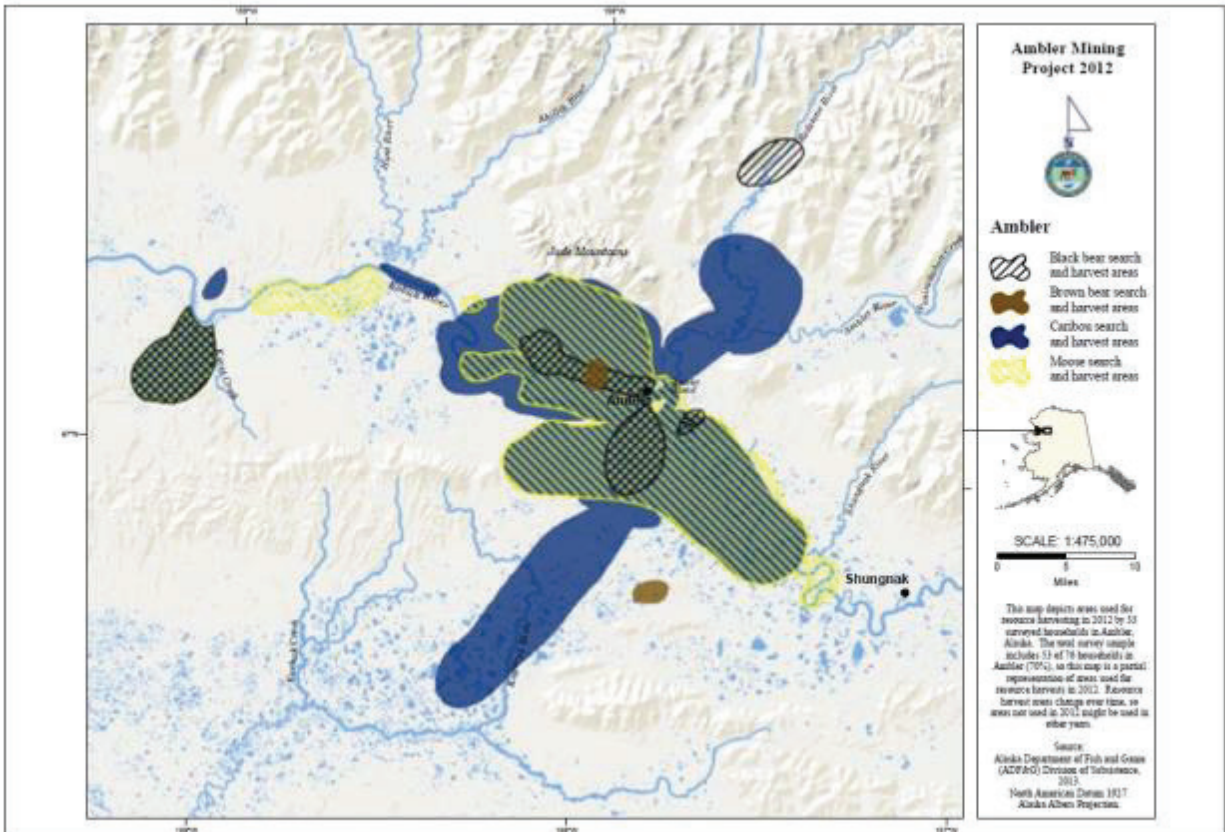


Figure 2-12.—Large land mammal search and harvest areas, Ambler, 2012.

**Appendix Map 2-3.** Map depicting caribou search and harvest areas by residents of Ambler in 2012 (Magdanz et al. 2011).

**TEMPORARY SPECIAL ACTION  
WSA16-03**

**INTERAGENCY STAFF COMMITTEE COMMENTS**

Temporary Special Action Request WSA16-03 requests lifting the closure to caribou harvest in Unit 23 by nonsubsistence users. Regulations at 36 CFR 242.19(b)(1) and 50 CFR 100.19(b)(1) state that the Board *may reopen public lands to nonsubsistence uses if new information or changed conditions indicate that the closure is no longer warranted.*

In the request, the State stated that new information indicated improvements in caribou calf production, recruitment, survival, and weight; adult females exhibited very good body conditions and high pregnancy rates in 2015 and 2016; and the newly derived WACH population estimate for fall 2105 was 206,000 caribou, falling within the WACH Management Plan's "conservative" harvest management strategy. Subsequent to submitting the special action request, the State also finalized photo census data collected in July 2016, which included a point estimate of 200,928 caribou (Standard Error = 4,295) in the WACH.

The Board should focus its decision on whether the request provides sufficient information to indicate the closure is no longer warranted. While the State provided some encouraging population data, the point estimate and associated error shows that there is still some uncertainty on whether the WACH is at the conservative or preservative level based. Further, the Board's decision to initially close Federal public lands (WSA16-01) was based on impacts to subsistence users, but WSA16-03 does not provide new information or show that conditions related to that aspect of the Board's decision have changed.

Since the population trajectory of the WACH herd suggests it may still be in decline, the ISC would like to encourage efforts to involve as many participants as possible in the discussion of potential future actions. The WACH Management Plan lists the closure of *some* Federal public lands to nonqualified users as a possible recommendation for the preservative management level (emphasis added); thus, closure of specific Federal lands may be an option to minimize impacts to subsistence users. In anticipation of additional special action requests coming from the Unit 23 region, the Board could direct staff to initiate discussions about user conflicts on specific Federal public lands with affected Councils, subsistence resource commissions, the WACH Working Group, Unit 23 Working Group, the State of Alaska, Tribes and ANCSA Corporations, and other users.



# Fall 2017 Regional Advisory Council Meeting Calendar

August - November 2017

Meeting dates and locations are subject to change.

| Sunday   | Monday                                    | Tuesday                           | Wednesday                        | Thursday                          | Friday   | Saturday |
|----------|---|-----------------------------------|----------------------------------|-----------------------------------|--|----------|
| Aug. 20  | Aug. 21<br>Window<br>Opens                | Aug. 22                           | Aug. 23                          | Aug. 24<br><b>NS — Wainwright</b> | Aug. 25  | Aug. 26  |
| Aug. 27  | Aug. 28                                   | Aug. 29                           | Aug. 30                          | Aug. 31                           | Sept. 1  | Sept. 2  |
| Sept. 3  | Sept. 4<br><b>LABOR DAY<br/>HOLIDAY</b>   | Sept. 5                           | Sept. 6                          | Sept. 7                           | Sept. 8  | Sept. 9  |
| Sept. 10 | Sept. 11                                  | Sept. 12                          | Sept. 13                         | Sept. 14                          | Sept. 15   | Sept. 16 |
| Sept. 17 | Sept. 18                                  | Sept. 19<br><b>K/A - Cold Bay</b> | Sept. 20                         | Sept. 21                          | Sept. 22   | Sept. 23 |
| Sept. 24 | Sept. 25                                  | Sept. 26                          | Sept. 27                         | Sept. 28                          | Sept. 29   | Sept. 30 |
| Oct. 1   | Oct. 2                                    | Oct. 3                            | Oct. 4                           | Oct. 5                            | Oct. 6   | Oct. 7   |
| Oct. 8   | Oct. 9<br><b>COLUMBUS<br/>DAY HOLIDAY</b> | Oct. 10<br><b>WI - Galena</b>     | Oct. 11<br><b>YKD — Bethel</b>   | Oct. 12                           | Oct. 13  | Oct. 14  |
| Oct. 15  | Oct. 16                                   | Oct. 17                           | Oct. 18                          | Oct. 19<br><b>AFN - Anchorage</b> | Oct. 20  | Oct. 21  |
| Oct. 22  | Oct. 23                                   | Oct. 24<br><b>SP — Nome</b>       | Oct. 25<br><b>NW - Shungnak</b>  | Oct. 26                           | Oct. 27  | Oct. 28  |
| Oct. 29  | Oct. 30                                   | Oct. 31<br><b>SE - Juneau</b>     | Nov. 1<br><b>BB — Dillingham</b> | Nov. 2                            | Nov. 3   | Nov. 4   |
| Nov. 5   | Nov. 6<br><b>SC — Seldovia/Soldotna</b>   | Nov. 7                            | Nov. 8<br><b>EI — Tanana</b>     | Nov. 9                            | Nov. 10<br>Window<br>Closes<br><b>VETERANS<br/>DAY HOLIDAY</b> | Nov. 11  |

# Winter 2018 Regional Advisory Council Meeting Calendar

*February-March 2018*

Meeting dates and locations are subject to change.

| Sunday         | Monday   | Tuesday        | Wednesday      | Thursday       | Friday                                 | Saturday       |
|----------------|--|----------------|----------------|----------------|--|----------------|
| <i>Feb. 4</i>  | <i>Feb. 5</i><br><i>Window Opens</i>             | <i>Feb. 6</i>  | <i>Feb. 7</i>  | <i>Feb. 8</i>  | <i>Feb. 9</i>                          | <i>Feb. 10</i> |
| <i>Feb. 11</i> | <i>Feb. 12</i>                                   | <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><br><b>PRESIDENT'S DAY HOLIDAY</b> | <i>Feb. 20</i> | <i>Feb. 21</i> | <i>Feb. 22</i> | <i>Feb. 23</i>                         | <i>Feb. 24</i> |
| <i>Feb. 25</i> | <i>Feb. 26</i>                                   | <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>                                    | <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>                                   | <i>Mar. 13</i> | <i>Mar. 14</i> | <i>Mar. 15</i> | <i>Mar. 16</i><br><i>Window Closes</i> | <i>Mar. 17</i> |

**Department of the Interior  
U. S. Fish and Wildlife Service**

**North Slope Subsistence Regional Advisory Council**

**Charter**

1. **Committee's Official Designation.** The Council's official designation is the North Slope Subsistence Regional Advisory (Council).
2. **Authority.** The Council is renewed by virtue of the authority set out in the Alaska National Interest Lands Conservation Act (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.** The Council has authority to perform the following duties:
  - a. Recommend the initiation of, review, and evaluate 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 decisionmaking 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.
    - (4) Recommendations concerning policies, standards, guidelines, and regulations to implement the strategy.
  - e. Appoint one member to the Gates of the Arctic National Park Subsistence Resource Commission in accordance with Section 808 of the Alaska National Interest Lands Conservation Act (ANILCA).
  - f. Make recommendations on determinations of customary and traditional use of subsistence resources.
  - g. Make recommendations on determinations of rural status.
  - h. Provide recommendations on the establishment and membership of Federal local advisory committees.
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 \$120,000, including all direct and indirect expenses and 0.9 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:
    - Approve or call all of the advisory committee's and subcommittees' meetings,
    - Prepare and approve all meeting agendas,
    - Attend all committee and subcommittee meetings,
    - Adjourn any meeting when the DFO determines adjournment to be in the public interest, and
    - 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 it 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.

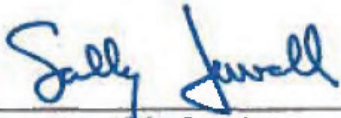
Members will be appointed for 3-year terms. A vacancy on the Council will be filled in the same manner in which the original appointment was made. Members serve at the discretion of the Secretary.

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 specific party matter in which the member has a direct financial interest in a lease, license, permit, contract, claim, agreement, or related litigation with the Department.

14. **Subcommittees.** Subject to the DFO's 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. The Council Chair, with the approval of the DFO, will appoint subcommittee members. 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, shall be handled in accordance with General Records Schedule 6.2, and other approved Agency records disposition schedule. These records shall be available for public inspection and copying, subject to the Freedom of Information Act, 5 U.S.C. 552.



Secretary of the Interior

NOV 20 2015

Date Signed

DEC 03 2015

Date Filed



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