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<b>WP24-28/29 Executive Summary</b>							
<b>General Description</b>	<p>Proposal WP24-28 requests a reduction in the caribou harvest limit across the range of the Western Arctic caribou herd to four caribou per year, only one of which may be a cow. <i>Submitted by: The Western Arctic Caribou Herd Working Group</i></p> <p>Proposal WP24-29 requests a reduction in the caribou harvest limit in Unit 23 to four caribou per year, only one of which may be a cow. <i>Submitted by: The Northwest Arctic Subsistence Regional Advisory Council</i></p>						
<b>Proposed Regulation</b>	<p>Units 21D, remainder; 24B, remainder; 24C; 24D; and all caribou hunt areas within Units 22, 23, and 26A: four caribou per year, only one of which may be a cow</p>						
<b>OSM Preliminary Conclusion</b>	<p><b>Support</b> Proposal WP24-29.</p> <p><b>Support</b> Proposal WP24-28 <b>with modification</b> to exclude that portion of Unit 26A north and east of a line running from the east/north bank of Wainwright Inlet to the headwaters of the Ketik River, to the headwaters of the Awuna River to the Colville River at Umiat then east to the Dalton Highway at Sagwon.</p> <p>The modified regulation for Unit 26 should read:</p> <p style="text-align: center;"><b>Unit 26—Caribou</b></p> <p style="text-align: center;"><i>Unit 26A - north and east of a line running from the east/north bank of Wainwright Inlet to the headwaters of the Ketik River, to the headwaters of the Awuna River to the Colville River at Umiat then east to the Dalton Highway at Sagwon- 5 caribou per day by State registration permit as follows: Calves may not be taken.</i></p> <table style="width: 100%; margin-top: 20px;"> <tr> <td style="text-align: right;"><i>Bulls may be harvested</i></td> <td style="text-align: right;"><i>July 1-Oct. 14.</i></td> </tr> <tr> <td></td> <td style="text-align: right;"><i>Dec. 6-June 30.</i></td> </tr> <tr> <td style="text-align: right;"><i>Cows may be harvested; however, cows accompanied by</i></td> <td style="text-align: right;"><i>July 16-Mar.</i></td> </tr> </table>	<i>Bulls may be harvested</i>	<i>July 1-Oct. 14.</i>		<i>Dec. 6-June 30.</i>	<i>Cows may be harvested; however, cows accompanied by</i>	<i>July 16-Mar.</i>
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	<p><i>calves may not be taken July 15-16-Oct. 15</i></p> <p><i>Noatak National Preserve is closed to caribou hunting from Aug. 1-Sep. 30 for the 2022-24 regulatory cycle, except by federally qualified subsistence users hunting under these regulations.</i></p> <p><i>Unit 26A remainder - <del>5 caribou per day</del> <b>4 caribou per year, only 1 may be a cow</b> by State registration permit as follows: Calves may not be taken.</i></p> <p><i>Bulls may be harvested July 1-Oct. 15.</i></p> <p><i>Dec. 6-June 30.</i></p> <p><i>Up to <del>3 cows per day</del> <b>Only 1 cow</b> may be harvested; July 16-Mar. 15. however, cows accompanied by calves may not be taken July 16-Oct. 15</i></p>
<p><b>Eastern Interior Alaska Subsistence Regional Advisory Council</b></p>	
<p><b>Western Interior Alaska Subsistence Regional Advisory Council</b></p>	
<p><b>Seward Peninsula Subsistence Regional Advisory Council</b></p>	
<p><b>Northwest Arctic Subsistence Regional Advisory Council</b></p>	
<p><b>North Slope Subsistence Regional Advisory Council Recommendation</b></p>	

*WP24-28/29 - Units 21D, 22, 23, 24, and 26A, Reduce harvest limit to four caribou per year only one of which may be a cow*

<b>Interagency Staff Committee Comments</b>	
<b>ADF&amp;G Comments</b>	
<b>Written Public Comments</b>	<b>None</b>

## **DRAFT STAFF ANALYSIS WP24-28/29**

### **ISSUES**

Wildlife Proposal WP24-28, submitted by the Western Arctic Caribou Herd Working Group, requests a reduction in the caribou harvest limit across the range of the Western Arctic caribou herd to four caribou per year, only one of which may be a cow. Specific areas include Units 21D, remainder; 24B, remainder; 24C; 24D; and all caribou hunt areas within Units 22, 23, and 26A.

Wildlife Proposal WP24-29, submitted by the Northwest Arctic Subsistence Regional Advisory Council (Northwest Arctic Council), requests a reduction in the caribou harvest limit in Unit 23 to four caribou per year, only one of which may be a cow.

### **DISCUSSION**

#### WP24-28

The Western Arctic Caribou Herd Working Group (WACH Working Group) at its annual meeting in December 2022 assigned the management level “Preservative, Declining” to the herd based on the most recent census (within the range of 130,000-200,000) and adult cow survival rate of less than 80%. The WACH Working Group sees the need to address the current herd decline by limiting the harvest of both bulls and cows to allow the herd to begin a recovery. Data received by the WACH Working Group from an Alaska Department of Fish & Game (ADF&G) biologist illustrated that there has been continued decline in the Western Arctic Caribou Herd (WACH).

#### WP24-29

The WACH has continued to decline with the most recent estimate being 164,000 caribou. The Northwest Arctic Council is greatly concerned about the precipitous decline of the WACH and feels that action is needed to slow the decline and prevent the herd from reaching a point of no return. The Northwest Arctic Council feels that the harvest recommendations proposed by the WACH Working Group are a starting point for the conservation of the WACH while still allowing some harvest. The Northwest Arctic Council recognizes that federally qualified subsistence users are already facing food insecurities, but this large reduction of caribou harvest is a means to help protect the caribou herd over the long term, while still allowing some harvest.

### **Existing Federal Regulation**

#### **Unit 21D—Caribou**

*Unit 21D, remainder— 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.*

*Sep. 1-Mar. 31.*

### **Unit 22—Caribou**

*Unit 22B that portion west of Golovnin Bay and west of a line along the west bank of the Fish and Niukluk Rivers to the mouth of the Libby River and excluding all portions of the Niukluk River drainage upstream from and including the Libby River drainage - 5 caribou per day by State registration permit. Calves may not be taken.*

*Oct. 1-Apr. 30.  
May 1-Sep. 30, a season may be announced.*

*Units 22A, that portion north of the Golsovia River drainage, 22B remainder, that portion of Unit 22D in the Kuzitrin River drainage (excluding the Pilgrim River drainage), and the Agiapuk River drainages, including the tributaries, and Unit 22E, that portion east of and including the Tin Creek drainage - 5 caribou per day by State registration permit. Calves may not be taken.*

*July 1-June 30.*

*Unit 22A, remainder - 5 caribou per day by State registration permit. Calves may not be taken*

*July 1-June 30, season may be announced.*

*Unit 22D, that portion in the Pilgrim River drainage - 5 caribou per day by State registration permit. Calves may not be taken*

*Oct. 1-Apr. 30.  
May 1-Sep. 30, season may be announced*

*Units 22C, 22D remainder, 22E remainder - 5 caribou per day by State registration permit. Calves may not be taken*

*July 1-June 30, season may be announced*

### **Unit 23—Caribou**

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

*Bulls may be harvested*

*July 1-June 30*

*Cows may be harvested. However, cows accompanied by calves may not be taken July 15-Oct. 14.*

*July 15-Apr. 30*

### **Unit 23—Caribou**

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

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

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

*Bureau of Land Management managed lands between the Noatak and Kobuk Rivers and Noatak National Preserve are closed to caribou hunting from Aug. 1–Sep. 30 for the 2022-24 regulatory cycle, except by federally qualified subsistence users hunting under these regulations.*

### **Unit 24—Caribou**

*Unit 24B remainder - 5 caribou per day, as follows: Calves may not be taken.*

<i>Bulls may be harvested.</i>	<i>July 1–Oct. 14.</i>
	<i>Feb. 1–June 30.</i>

<i>Cows may be harvested.</i>	<i>July 15–Apr. 30.</i>
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*Units 24C, 24D - 5 caribou per day, as follows: Calves may not be taken.*

<i>Bulls may be harvested.</i>	<i>July 1–Oct. 14.</i>
	<i>Feb. 1–June 30.</i>

**Unit 23—Caribou**

*Cows may be harvested*

*Sep. 1-Mar. 31.*

**Unit 26—Caribou**

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

*Bulls may be harvested*

*July 1-Oct. 14.*

*Dec. 6-June 30.*

*Cows may be harvested; however, cows accompanied by calves may not be taken July 16-Oct. 15*

*July 16-Mar. 15.*

*Noatak National Preserve is closed to caribou hunting from Aug. 1-Sep. 30 for the 2022-24 regulatory cycle, except by federally qualified subsistence users hunting under these regulations.*

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

*Bulls may be harvested*

*July 1-Oct. 15.*

*Dec. 6-June 30.*

*Up to 3 cows per day may be harvested; however, cows accompanied by calves may not be taken July 16-Oct. 15*

*July 16-Mar. 15.*

**Proposed Federal Regulation**

**Unit 21D—Caribou**

*Unit 21D, remainder— ~~5 caribou per day~~ 4 caribou per year, only 1 may be a cow, as follows: Calves may not be taken.*



*Bulls may be harvested.*

*July 1-Oct. 14.  
Feb. 1-June 30.*

*Cows may be harvested.*

*Sep. 1-Mar. 31.*

### **Unit 22—Caribou**

*Unit 22B that portion west of Golovnin Bay and west of a line along the west bank of the Fish and Niukluk Rivers to the mouth of the Libby River and excluding all portions of the Niukluk River drainage upstream from and including the Libby River drainage - ~~5 caribou per day~~ **4 caribou per year, only 1 may be a cow** by State registration permit. Calves may not be taken.*

*Oct. 1-Apr. 30.*

*May 1-Sep. 30, a season may be announced.*

*Units 22A, that portion north of the Golsovia River drainage, 22B remainder, that portion of Unit 22D in the Kuzitrin River drainage (excluding the Pilgrim River drainage), and the Agiapuk River drainages, including the tributaries, and Unit 22E, that portion east of and including the Tin Creek drainage - ~~5 caribou per day~~ **4 caribou per year, only 1 may be a cow** by State registration permit. Calves may not be taken.*

*July 1-June 30.*

*Unit 22A, remainder - ~~5 caribou per day~~ **4 caribou per year, only 1 may be a cow** by State registration permit. Calves may not be taken*

*July 1-June 30, season may be announced.*

*Unit 22D, that portion in the Pilgrim River drainage - ~~5 caribou per day~~ **4 caribou per year, only 1 may be a cow** by State registration permit. Calves may not be taken*

*Oct. 1-Apr. 30.  
May 1-Sep. 30, season may be announced*

*Units 22C, 22D remainder, 22E remainder - ~~5 caribou per day~~ **4 caribou per year, only 1 may be a cow** by State registration permit. Calves may not be taken*

*July 1-June 30, season may be announced*

### **Unit 23—Caribou**

*Unit 23—that portion which includes all drainages north and west of, and including, the Singoalik River drainage— ~~5 caribou per day~~ **4 caribou per year, only 1 may be a cow** by State registration permit as follows:*

*Bulls may be harvested*

*July 1-June 30*

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

*Unit 23, remainder— ~~5 caribou per day~~ **4 caribou per year, only 1 may be a cow** by State registration permit as follows:*

*Bulls may be harvested* July 1–June 30

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

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

*Bureau of Land Management managed lands between the Noatak and Kobuk Rivers and Noatak National Preserve are closed to caribou hunting from Aug. 1-Sep. 30 for the 2022-24 regulatory cycle, except by federally qualified subsistence users hunting under these regulations.*

#### **Unit 24—Caribou**

*Unit 24B remainder - ~~5 caribou per day~~ **4 caribou per year, only 1 may be a cow** as follows: Calves may not be taken.*

*Bulls may be harvested.* July 1–Oct. 14.

*Feb. 1–June 30.*

*Cows may be harvested.* July 15–Apr. 30.

*Units 24C, 24D - ~~5 caribou per day~~ **4 caribou per year, only 1 may be a cow** as follows: Calves may not be taken.*

*Bulls may be harvested.* July 1–Oct. 14.

*Feb. 1–June 30.*

*Cows may be harvested* Sep. 1–Mar. 31.

### **Unit 26—Caribou**

*Unit 26A - that portion of the Colville River drainage upstream from the Anaktuvuk River, and drainages of the Chukchi Sea south and west of, and including the Utukok River drainage - ~~5 caribou per day~~ **4 caribou per year, only 1 may be a cow** by State registration permit as follows: Calves may not be taken.*

*Bulls may be harvested*

*July 1-Oct. 14.*

*Dec. 6-June 30.*

*Cows may be harvested; however, cows accompanied by calves may not be taken July 16-Oct. 15*

*July 16-Mar. 15.*

*Noatak National Preserve is closed to caribou hunting from Aug. 1-Sep. 30 for the 2022-24 regulatory cycle, except by federally qualified subsistence users hunting under these regulations.*

*Unit 26A remainder - ~~5 caribou per day~~ **4 caribou per year, only 1 may be a cow** by State registration permit as follows: Calves may not be taken.*

*Bulls may be harvested*

*July 1-Oct. 15.*

*Dec. 6-June 30.*

*~~Up to 3 cows per day~~ **Only 1 cow** may be harvested; however, cows accompanied by calves may not be taken July 16-Oct. 15*

*July 16-Mar. 15.*

### **Existing State Regulation**

#### **Unit 21D—Caribou**

*21D remainder*

*Residents—5 caribou per day, however, calves may not be taken.*

*July 1-Oct. 14*

*Feb. 1-June 30.*

<i>Bulls</i>	<i>Sep. 1-Mar. 31.</i>
<i>Cows</i>	
<i>Nonresidents—1 bull; however, calves may not be taken</i>	<i>Aug. 1-Sep. 30</i>

**Unit 22—Caribou**

<i>22A, north of the Golsovia River drainage</i>	<i>Residents—Twenty caribou total, up to 5 per day by permit.</i>	
	<i>Bulls RC800</i>	<i>No closed season</i>
	<i>Cows RC800</i>	<i>July 1-Mar. 31.</i>
	<i>Nonresidents—1 bull</i>	<i>Aug. 1-Sep. 30</i>
<i>22A, remainder</i>	<i>Residents— Twenty caribou total, up to 5 per day by permit. Bulls may not be taken Oct. 15- Jan 31, and cows may not be taken Apr 1- Aug 31. RC800</i>	<i>May be announced</i>
	<i>Nonresidents—1 bull</i>	<i>May be announced</i>
<i>22B, west of Golovnin Bay, west of the west banks of Fish and Niukluk rivers below the Libby River, (excluding the Libby River drainage and Niukluk River drainage above, the mouth of the Libby River)</i>	<i>Residents— Twenty caribou total, up to 5 per day by permit.</i>	
	<i>Bulls RC800</i>	<i>Oct. 1-Apr. 30</i>
	<i>Cows RC800</i>	<i>Oct. 1-Mar 31.</i>
	<i>Residents— Twenty caribou total, up to 5 per day by permit. Cows may not be taken Apr 1- Aug 31. RC800</i>	<i>May be announced</i>
	<i>Nonresidents—1 bull</i>	<i>May be announced</i>
<i>22B, remainder</i>	<i>Residents— Twenty caribou total, up to 5 per day by permit.</i>	
	<i>Bulls RC800</i>	<i>No closed season</i>
	<i>Cows RC800</i>	<i>July 1-Mar. 31.</i>

	<i>Nonresidents—1 bull</i>	<i>Aug. 1-Sep. 30</i>
22C	<i>Residents— Twenty caribou total, up to 5 per day by permit. Bulls may not be taken Oct 15-Jan 31, and cows may not be taken Apr 1-Aug 31. RC800</i>	<i>May be announced</i>
	<i>Nonresidents—1 bull</i>	<i>May be announced</i>
22D, Pilgrim River drainage	<i>Residents— Twenty caribou total, up to 5 per day by permit.</i>	
	<i>Bulls RC800</i>	<i>Oct. 1-Apr. 30</i>
	<i>Cows RC800</i>	<i>Oct. 1-Mar. 31.</i>
	<i>Residents— Twenty caribou total, up to 5 per day by permit. Cows may not be taken Apr 1-Aug 31. RC800</i>	<i>May be announced</i>
	<i>Nonresidents—1 bull; however, calves may not be taken</i>	<i>May be announced</i>
22D, in the Kuzitrin River drainage (excluding the Pilgrim River drainage) and the Agiapuk River drainage	<i>Residents— Twenty caribou total, up to 5 per day by permit.</i>	
	<i>Bulls RC800</i>	<i>No closed season</i>
	<i>Cows RC800</i>	<i>July 1-Mar. 31.</i>
	<i>Nonresidents—1 bull</i>	<i>Aug. 1-Sep. 30</i>
22D, remainder	<i>Residents— Twenty caribou total, up to 5 per day by permit. Bulls may not be taken Oct 15- Jan 31, and cows may not be taken Apr 1 – Aug 31. RC800</i>	<i>May be announced.</i>
	<i>Nonresidents—1 bull</i>	<i>Aug. 1-Sep. 30</i>
22E, east of and including the	<i>Residents— Twenty caribou total, up to 5 per day by permit.</i>	
	<i>Bulls RC800</i>	<i>No closed season</i>

WP24-28/29 - Units 21D, 22, 23, 24, and 26A, Reduce harvest limit to four caribou per year only one of which may be a cow

<i>Sanaguich River drainage</i>	<i>Cows RC800</i>	<i>July 1-Mar. 31.</i>
	<i>Nonresidents—1 bull</i>	<i>Aug. 1-Sep. 30</i>
<i>22E, remainder</i>	<i>Residents— Twenty caribou total, up to 5 per day by permit. Bulls may not be taken Oct 15- Jan 31, and cows may not be taken Apr 1 – Aug 31. RC800</i>	<i>May be announced</i>
	<i>Nonresidents—1 bull</i>	<i>May be announced</i>

**Unit 23—Caribou**

<i>23, north of and including the Singoalik River drainage</i>	<i>Residents—5 caribou per day by permit.</i>	
	<i>Bulls RC907</i>	<i>No closed season</i>
	<i>Cows RC907</i>	<i>Jul. 15-Apr. 30</i>
	<i>Nonresidents—1 bull</i>	<i>Aug. 1-Sep. 30</i>
<i>23 remainder</i>	<i>Residents—5 caribou per day by permit.</i>	
	<i>Bulls RC907</i>	<i>No closed season</i>
	<i>Cows RC907</i>	<i>Sep. 1-Mar. 31.</i>
	<i>Nonresidents—1 bull</i>	<i>Aug. 1-Sep. 30</i>

**Unit 24—Caribou**

<i>24B remainder</i>	<i>Residents—5 caribou per day, however, calves may not be taken.</i>	
	<i>Bulls</i>	<i>July 1-Oct 14 Feb 1-June 30</i>
	<i>Cows</i>	<i>July 15-Apr. 30.</i>
	<i>Nonresidents—1 bull, however, calves may not be taken</i>	<i>Aug. 1-Sep. 30</i>

WP24-28/29 - Units 21D, 22, 23, 24, and 26A, Reduce harvest limit to four caribou per year only one of which may be a cow

24C and 24D	Residents—5 caribou per day, however, calves may not be taken.	
	Bulls	July 1-Oct 14 Feb 1-June 30
	Cows	Sep. 1-Mar. 31.
	Nonresidents—1 bull, however, calves may not be taken	Aug. 1-Sep. 30

### Unit 26—Caribou

26A, the Colville River drainage upstream from the Anaktuvuk River, and drainages of the Chukchi Sea south and west of, and including the Utukok River drainage	Residents—5 caribou per day by permit.	
	Bulls RC907	July 1-Oct. 14 Feb. 1-June 30.
	Cows RC907	Jul. 15-Apr. 30
	Nonresidents—1 bull	July 15-Sep. 30
26A remainder	Residents—5 caribou per day by permit. RC907	July 1-July 15 Mar 16-June 30.
	5 caribou per day three of which may be cows by permit; cows with calves may not be taken. RC907	July 16-Oct 15.
	3 cows per day by permit. RC907	Oct 16-Dec 31
	5 caribou per day three of which may be cows by permit. RC907	Jan 1-Mar 15
	Nonresidents—1 bull; however, calves may not be taken	July 15-Sep. 30

### Extent of Federal Public Lands

Federal public lands comprise approximately 55.7% of Unit 21D and consist of 29.3% U.S. Fish and Wildlife Service (USFWS) managed lands and 26.4% Bureau of Land Management (BLM) managed lands.

Federal public lands comprise approximately 43.5% of Unit 22 and consist of 28.1% BLM managed lands, 12.4% National Park Service (NPS) managed lands, and 3% USFWS managed lands.

*WP24-28/29 - Units 21D, 22, 23, 24, and 26A, Reduce harvest limit to four caribou per year only one of which may be a cow*

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

Federal public lands comprise approximately 64.4% of Unit 24 and consist of 21.8% NPS managed lands, and 21.8% USFWS managed lands, and 20.8% BLM managed lands.

Federal public lands comprise approximately 67.5% of Unit 26 and consist of 45.2% BLM managed lands, 17.3% USFWS managed lands, and 5% NPS managed lands.

Federal public lands comprise approximately 72.7% of Unit 26A and consist of 66% BLM managed lands, 6.6% NPS managed lands, and 0.01% USFWS managed lands.

### **Customary and Traditional Use Determinations**

Residents of Units 21B, 21C, 21D, and Huslia have a customary and traditional use determination for caribou in Unit 21D.

Residents of Units 21D west of the Koyukuk and Yukon Rivers, 22 (except residents of St. Lawrence Island), 23, 24, Kotlik, Emmonak, Hooper Bay, Scammon Bay, Chevak, Marshall, Mountain Village, Pilot Station, Pitka's Point, Russian Mission, St. Marys, Nunam Iqua, and Alakanuk have a customary and traditional use determination for caribou in Unit 22A.

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

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

Residents of Unit 24, Galena, Kobuk, Koyukuk, Stevens Village, and Tanana have a customary and traditional use determination for caribou in Unit 24.

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

### **Regulatory History**

See **Appendix 1**

### **Current Events**

#### 2024-26 Federal Wildlife Proposals

The Northwest Arctic Council and North Slope Subsistence Regional Advisory Council (North Slope Council) submitted Proposals WP24-30 and WP24-31, respectively, to close caribou hunting to non-federally qualified users in Unit 23 from Aug. 1-Oct. 31.



WSA22-05/06

Temporary Wildlife Special Action WSA22-05, submitted by the Northwest Arctic Council, requested a reduction in the caribou harvest limit in Unit 23 to four caribou per year, only one of which may be a cow for the remainder of the 2022-24 regulatory cycle (see regulatory history, **Appendix 1**).

Temporary Wildlife Special Action WSA22-06, submitted by the Western Interior Subsistence Regional Advisory Council (Western Interior Council), requested a reduction in the caribou harvest limit across the range of the WACH to four caribou per year, only one of which may be a cow for the remainder of the 2022-24 regulatory cycle. Specific areas include Units 21D, remainder; 24A, remainder; 24B, remainder; 24C; 24D; and all caribou hunt areas within Units 22, 23, and 26A (see regulatory history, **Appendix 1**).

A public hearing was held for WSA22-05/06 on April 26, 2023, in Kotzebue, and for WSA22-06 only on May 2, 2023, via teleconference. In addition, consultations with tribes and Alaska Native Claims Settlement Act (ANCSA) corporations were held on May 15, 2023, via teleconference. Summaries of these hearings and consultations are presented here.

April 26, 2023 public hearing summary (WSA22-05 and WSA22-06)

OSM held a public hearing on WSA22-05 and WSA22-06 on April 26, 2023, in person in Kotzebue and via teleconference. Fourteen people testified. The majority of participants spoke in favor of the need for conservation of caribou but in opposition to the four caribou per year as proposed in the special action request. Speakers, almost unanimously, stressed that caribou is their dietary staple and an integral aspect of their cultural identity. They stated that the limit, as proposed, would disrupt a basic aspect of the subsistence economy, the ability to harvest for others who can't hunt for themselves. Climate change was acknowledged as a reason for changing caribou migration patterns. However, other phenomena were discussed. The effects of sport hunters and their use of airplanes is a major cause of concern because it is perceived as a disruption to caribou migration patterns. A couple of speakers said that migrations are interrupted when sport hunters don't follow local conservation practices such as letting the caribou leaders pass so the herd will follow. Speakers told of other local conservation practices and indigenous ways of showing respect, including letting caribou pass in the spring when they are skinny, not hunting cows in times of low numbers and using all parts of the caribou they harvest. One person noted that caribou population crashes are part of Indigenous Knowledge and these practices are enacted during these times.

One of the most pervasive themes was the short amount of time between the Northwest Arctic Council's request submission and public hearing, and the lack of village outreach. The lack of outreach is a major point of contention because, the participants said, those are the people who are the hunters and who make their living off of the land. Most speakers talked about the high cost of living in the region and that residents are not able to just stop hunting. Participants from the North Slope stated that this proposal is not relevant for them because they harvest from the Teshekpuk herd and not the WACH.

As noted, many participants spoke of the need to take conservation measures to preserve the WACH. The Kobuk Valley National Park Subsistence Resource Commission suggested changing the limit to five bulls per day and no cows so that harvesting for others can be sustained. One speaker, an elder, did not overtly support the proposal but candidly shared his thoughts as to how conservation of the herd should be

addressed. He stated that local hunting patterns have changed because of the presence of sport hunters who prefer to take bulls and disrupt migration routes. He said this led to the need for local hunters to shift to cow harvest. He expressed extreme concern that the use of semi-automatic weapons has taken the place of bolt action rifles among local hunters. He observed that some people shoot into the herd and may kill several caribou and that they don't harvest all of them. He acknowledged natural fluctuation in caribou herd numbers and said that local people are going to have to "tighten their belts." Like other speakers, he feels that the prohibition of fly-in hunting would allow for the restoration of caribou migration routes. He sincerely requested that all agencies come to the table to address local concerns and bring their data to find a viable solution to conserving the WACH.

May 2, 2023 public hearing summary (WSA22-06 only)

OSM held another public hearing on WSA22-06 on May 2, 2023, via teleconference. Forty-five people provided testimony. The vast majority of testifiers were from North Slope communities and strongly opposed the request. One person from Ambler supported the request, stressing the importance of protecting cows and the need for conservation now to ensure the herd's preservation into the future. Several commenters did not provide an explicit position.

The primary reason people opposed the request was because the proposed harvest limit reduction would not be enough to provide for people's subsistence uses, potentially resulting in starvation across North Slope communities. Many testifiers stated four caribou per year was not enough to feed their families or share with others in their community, including elders, widows, and people unable to hunt for themselves. One testifier commented that his family uses 30-50 caribou each year, while another stated four caribou would only last her family one month. People also emphasized that caribou are vital for their survival; they rely on caribou both nutritionally and culturally. For example, caribou sinew is used to construct whaling boats. Several testifiers stressed that subsistence users only take what they need and harvest sustainably; they should not be criminalized for feeding their families; sport hunters should be restricted first. Additionally, store-bought food is prohibitively expensive and not as healthy as caribou.

Another reason people opposed the request was because most caribou harvested in Unit 26A are from the Teshekpuk (TCH) or Central Arctic caribou (CACH) herds, not the WACH. As the TCH and CACH populations are not declining like the WACH, this harvest limit reduction would be an unnecessary restriction on subsistence uses. Many also commented that the timing of the public hearing was terrible because many of the region's caribou hunters were out whaling. Several others expressed a need for meaningful tribal consultation on the request.

Several testifiers agreed that some conservation measures were needed to address the decline of the WACH, but that the requested restrictions were too drastic, too soon, and did not allow sufficient time or opportunity for input by the subsistence users who would be most affected by these restrictions. Others expressed frustration at the Western Interior Council dictating what harvest regulations should be outside of their area in the North Slope region.

A representative from ADF&G commented that a similar proposal will be addressed by the Alaska Board of Game (BOG) in January 2024 and that outlying subunits occupied by other herds such as the TCH and CACH should be considered for removal from this request.

Following this public hearing, the Western Interior Council indicated via e-mails that they would like to withdraw this request. While Councils cannot formally withdraw special action requests outside of a public forum, the chair spoke to the Board about this issue when they meet to consider this request on June 8th.

#### May 15, 2023 Tribal and ANCSA consultation summary

Participants in the Tribal teleconference included representatives of the Inupiat Community of the Arctic Slope (ICAS), Naqragmiut Tribal Council of Anaktuvuk Pass, and the Arctic Slope Community Foundation.

Participants said that four caribou per household for the year is not enough because hunters harvest for those who cannot hunt, not just their household. They stated that caribou is a staple food, but it is more than that, it is cultural identity and is healthier than store-bought food. Some participants discussed the conflict they face, in that they know WACH caribou needs to be conserved but they also need caribou in order to live. One person described Traditional/Indigenous Knowledge and on-going user conflict, “We know not to overharvest for 10,000 years and now it’s all regulated for us. Just difficult to follow your regulations with over 1,000 super cub planes coming to harvest the same caribou.”

Discussion of management topics included a request for the State to be at the table with villages and Federal managers to discuss and work out how to conserve the herd. Participants stated that they do not harvest the WACH and asked if enforcement would be herd-specific. OSM staff replied that law enforcement makes no distinction between herds; enforcement occurs according to harvest regulations in specific units and areas.

Participants asked about the timing of the special action and OSM staff replied that the Board is meeting to address it on June 8, 2023. Because this is a temporary special action, if the Board adopted the proposal, it would only last for one regulatory cycle and would end in June 2024. The conflict that hunters face was voiced again when a participant said that he knew he was going against himself but wondered if the closure should last for two cycles in order to save the herd because, he said, “...if we lose them, everything falls apart.”

Participants in the Alaska Native Claims Settlement Act (ANCSA) teleconference included representatives of the Inupiat Community of the Arctic Slope (ICAS), Naqragmiut Tribal Council of Anaktuvuk Pass, and NANA Regional Corporation.

The NANA Corporation representatives stated that NANA does not have an official position on the proposal but wanted to share concerns voiced by NANA shareholders. In general, shareholders have expressed deep and overwhelming worry and a heavy sense of concern. The main concern is that people do not know how they would feed their families and their communities if this special action is adopted. The fast speed of the process and the timing of the public hearings was cited as problematic because communities and families have not had time to discuss the situation among themselves. People expressed worry about shifting harvests away from caribou because other resources are also in decline. The use of the entire caribou for many purposes is also an issue; people will not just lose food, but the ability to make clothing, tools, and art from caribou.

Harvesting caribou for others is a central aspect of Inupiat culture and economy. The ability to harvest for others is a major concern. Participants requested clarification on the designated hunter permit. OSM staff replied that on Federal public lands, any federally qualified user can be a designated hunter for another federally qualified user. One participant asked how law enforcement would deal with several designated hunters in one boat with only their allowed limit of caribou on board. OSM staff replied that it would be permissible as permitted by State or Federal regulations. During the public hearings on April 26 and May 2, 2023, many participants expressed concerns about access to designated hunter permits. OSM staff has contacted U.S. Fish and Wildlife Service Refuge and National Park Service colleagues to identify exactly how to obtain designated hunter permits in hub communities and villages. Per their request, OSM staff has provided preliminary information to NANA representatives.

Participants asked how OSM came to the harvest limit proposed in WSA22-05/06. OSM staff replied that it was proposed by the Western Arctic Caribou Herd Working Group. The Chair of the Western Interior Council, Jack Reakoff, explained further that the Western Interior Council proposal was prompted by the drastic decline of the WACH and the immediate need to conserve caribou cows.

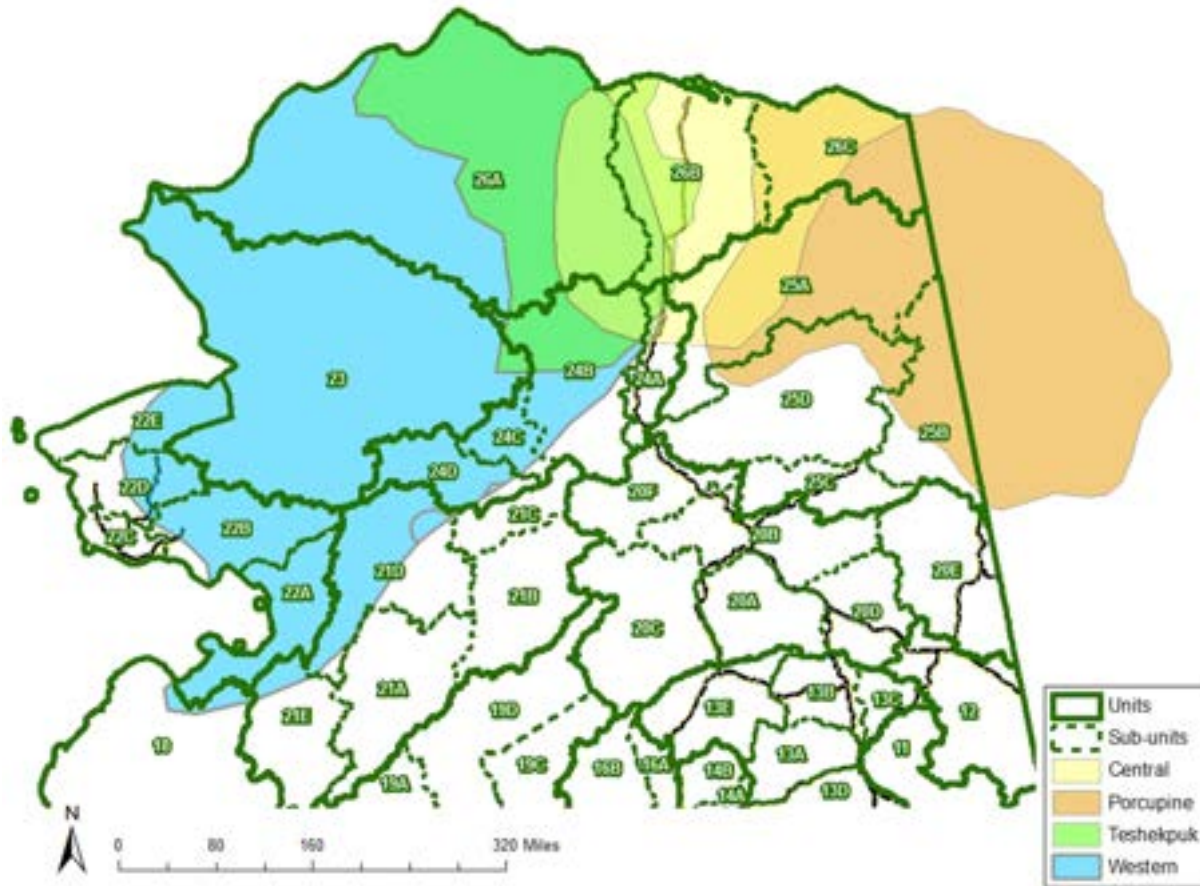
### **Biological Background**

The TCH, WACH, and CACH have ranges that overlap in Units 23, 26A, 24A, and 24B (**Map 1**), and there can be considerable mixing of herds during the fall and winter (Prichard et al. 2020). As the current wildlife proposals focuses on conservation concerns for the WACH, this analysis will focus on the WACH. The TCH primarily occupies Unit 26A, and this analysis will briefly consider TCH biology and range. The CACH, which mostly occurs in Unit 26B, (Dau 2011, 2015; Lenart 2011; Parrett 2011, 2015c, 2015d), will not be considered further in this analysis.

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

Caribou calving generally occurs from late May to mid-June (Dau 2013; Cameron et al. 2018). Weaning generally occurs in late October and early November before the breeding season (Taillon et al. 2011). Calves may stay with their mothers through their first winter, which improves calves' access to food and body condition (Holand et al. 2012). Calves orphaned after weaning (October) have greater chances of survival than calves orphaned before weaning (Russell et al. 1991; Joly 2000; Holand et al. 2012, Rughetti and Festa-Bianchet 2014).

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



**Map 1.** Herd overlap and ranges of the WACH, TCH, CACH, and PCH.

### Western Arctic Caribou Herd

The WACH has historically been the largest caribou herd in Alaska and has a home range of approximately 157,000 square miles in northwestern Alaska. In the spring, most mature cows move north to calving grounds in the Utukok Hills, while bulls and immature cows lag behind and move toward summer range in the Wulik Peaks and Lisburne Hills (**Map 2**; Dau 2011; WACHWG 2011, 2019). After calving, cows and calves move west toward the Lisburne Hills where they mix with the bulls and non-maternal cows. During the summer, the herd moves rapidly to the Brooks Range. Calving locations of individuals average 35 miles apart from one year to the next, and 90% of females calved within one week from the previous year (Joly et al. 2021). The WACH has used the same general calving grounds for more than 100 years (Cameron et al. 2020).

Except for summer periods, little individual site-specific fidelity is observed from year to year, especially during the winter (Joly et al. 2021). The winter range fluctuates year to year as the WACH demonstrate low fidelity to wintering grounds (Joly et al. 2021). Rut occurs during fall migration (Dau 2011, WACHWG 2011). The fall migration is more variable and shows less fidelity to specific migration routes than the spring migration, while caribou still showed a fidelity to certain regions within the herd's range (Joly et al. 2021).

In recent years, the timing of fall migration has been less predictable (Joly et al. 2021). Reasons for changes in migration phenology are unknown. However, Cameron et al. (2021) found that WACH migrated in response to snow events and cold temperatures but would pause migration when they encountered snow free areas or warmer temperatures. This corresponds with Traditional Ecological Knowledge, which has observed caribou migrating in response to weather (NWARAC 2021b). Caribou migrations are also closely related to the population size and density of the herd (Burch 1972, Joly et al. 2021b).

The proportion of caribou using certain migration paths also varies each year (**Figure 1**, Baltensperger and Joly 2019; Joly and Cameron 2020). Changes in migration paths are likely influenced by multiple factors including food availability, snow depth, rugged terrain, and dense vegetation (Nicholson et al. 2016; Fullman et al. 2017). If caribou travelled the same migration routes every year, their food resources would likely be depleted (NWARAC 2016a). Anthropogenic factors can also influence migration paths. Radio collared caribou data has shown that the Red Dog Mine Road, near Kivalina, has delayed the fall migration along the coast with some caribou turning around rather than crossing the road (Wilson et al. 2016, WACHWG 2021).

The WACH Working Group consists of a broad spectrum of stakeholders, including subsistence users, sport hunters, conservationists, hunting guides, reindeer herders and transporters. The Group is also technically supported by NPS, USFWS, BLM, and ADF&G personnel. The WACH Working Group developed a WACH Cooperative Management Plan in 2003 and revised it in 2011 and 2019 (WACHWG 2011, 2019). The WACH Management Plan identifies nine plan elements: cooperation, population management, habitat, regulations, reindeer, knowledge, education, human activities, and changing climate, as well as associated goals, strategies, and management actions. As part of the population management element, the WACH Working Group developed a guide to herd management determined by population size, population trend, and harvest rate. Population sizes guiding management level determinations were based on recent (since 1970) historical data for the WACH (WACHWG 2011, 2019). Revisions to recommended harvest levels under liberal and conservative management were made in 2015 (WACHWG 2015) and 2019 (WACHWG 2019a, **Table 1**).

The WACH population declined rapidly in the early 1970s, bottoming out at about 75,000 animals in 1976. Aerial photocensuses have been used since 1986 to estimate population size. The WACH population increased throughout the 1980s and 1990s, peaking at 490,000 animals in 2003 (**Figure 2**). From 2003-2016, the herd declined at an average annual rate of 7.1% from approximately 490,000 caribou to 200,928 caribou (Dau 2011, 2014; Caribou Trails 2014; Parrett 2016). In 2017, the herd increased to an estimated 259,000 caribou (Parrett 2017a). However, part of this increase may have been due to improved photographic technology as ADF&G switched from film to higher resolution digital cameras. The 2019 population estimate was 244,000 caribou (Hansen 2019a). No photocensus was completed in 2020, but ADF&G completed a census in 2021 (WACHWG 2020). The 2021 population estimate was 188,000 caribou with a 95% confidence interval of +/- 11,855 and a minimum count of 180,374. This is approximately a 24% decline from the 2019 population estimate (WACHWG 2021). The 2022 population estimate was 164,000 caribou with a 95% confidence interval of +/- 7,271 and a minimum count of 161,034, representing an additional 12% decline (**Figure 2**, WACHWG 2022).

Between 1982 and 2011, the WACH population was within the liberal management level prescribed by the WACH Working Group (**Figure 2, Table 1**). In 2013, the herd population estimate fell below the population threshold for liberal management of a decreasing population (265,000), slipping into the conservative management level. In 2020, as no photocensus was completed, the WACH Working Group voted to maintain the herd's status at the conservative declining level (WACH Working Group 2020). The 2021 population estimate fell below the population threshold for conservative management of a decreasing population (200,000). The WACH Working Group voted to place the herd in the preservative declining level in 2021 and 2022 (WACHWG 2021, 2022).

Between 1970 and 2021, the bull:cow ratio exceeded Critical Management level of 30 bulls:100 cows identified in the 2019 WACH Management Plan (**Figure 3**). (Note: Previous management plans identified 40 bulls:100 cows as the critical management level). However, the average annual number of bulls:100 cows was greater during the period of population growth (54:100 between 1976–2001) than during the recent period of decline (44:100 between 2004–2016). However, in 2017 the bull:100 cow ratio was the highest since 1998 at 54 bulls:100 cows. In 2021, that ratio fell slightly to 47 bulls:100 cows (**Figure 3, WACHWG 2021**). Additionally, Dau (2015) states that while trends in bull:cow ratios are accurate, actual values should be interpreted with caution due to sexual segregation during sampling and the inability to sample the entire population, which likely account for more annual variability than actual changes in composition.

Although factors contributing to the 2003-present decline are not known with certainty, increased adult cow mortality, and decreased calf recruitment and survival played a role (Dau 2011, WACHWG 2022). Since the mid-1980s, adult mortality has slowly increased while recruitment has slowly decreased (**Figure 4, Dau 2013**). Prichard (2009) developed a population model specifically for the WACH using various demographic parameters and found adult cow survival to have the largest impact on population size, followed by calf survival and then parturition rates.

Calf production has likely had little influence on the population trajectory (Dau 2013, 2015). Between 1990 and 2003, the June calf:cow ratio averaged 66 calves:100 cows/year. Between 2004 and 2017, the June calf:cow ratio averaged 72 calves:100 cows/year. In June 2018, 86 calves:100 cows were observed, which approximates the highest parturition level ever recorded for the herd (86 calves:100 cows in 1992) (Dau 2016a, WACH Working Group 2021). The 5-year period from 2015-2019 had the highest (83%) parturition rate of any period since monitoring began. Since 2018, the parturition rates have decreased. In 2022, the calf:cow ratio was 64 calves:100 cows. The long-term average (1992-2022) is 70 calves:100 cows/year (**Figure 5, WACHWG 2022, NWARAC 2023**).

Decreased calf survival through summer and fall and recruitment into the herd may have contributed to the recent population decline (Dau 2013, 2015). Fall calf:cow ratios indicate calf survival over summer. Between 1976 and 2017, the fall calf:cow ratio ranged from 35 to 59 calves:100 cows/year, averaging 47 calves:100 cows/year (**Figure 5**).

Similarly, the ratio of short yearlings (SY, 10-11 months old caribou) to adults provides a measure of overwintering calf survival and recruitment. Between 1998 and 2022, SY:adult ratios ranged from 9-26

and averaged 17 SY:100 adults/year (**Figure 5**). SY:100 adult ratios were high from 2016-2018, ranging from 21-23 SY:100 adults (Dau 2016b, NWARAC 2019a, NWARAC 2023). The 2022 SY:100 adult ratio was on par with the long-term average at 17 SY:100 adults (WACHWG 2022). Over the past seven years the short yearling ratio has been at or above the long-term average. Thus, recruitment does not appear to be a major driver of herd decline.

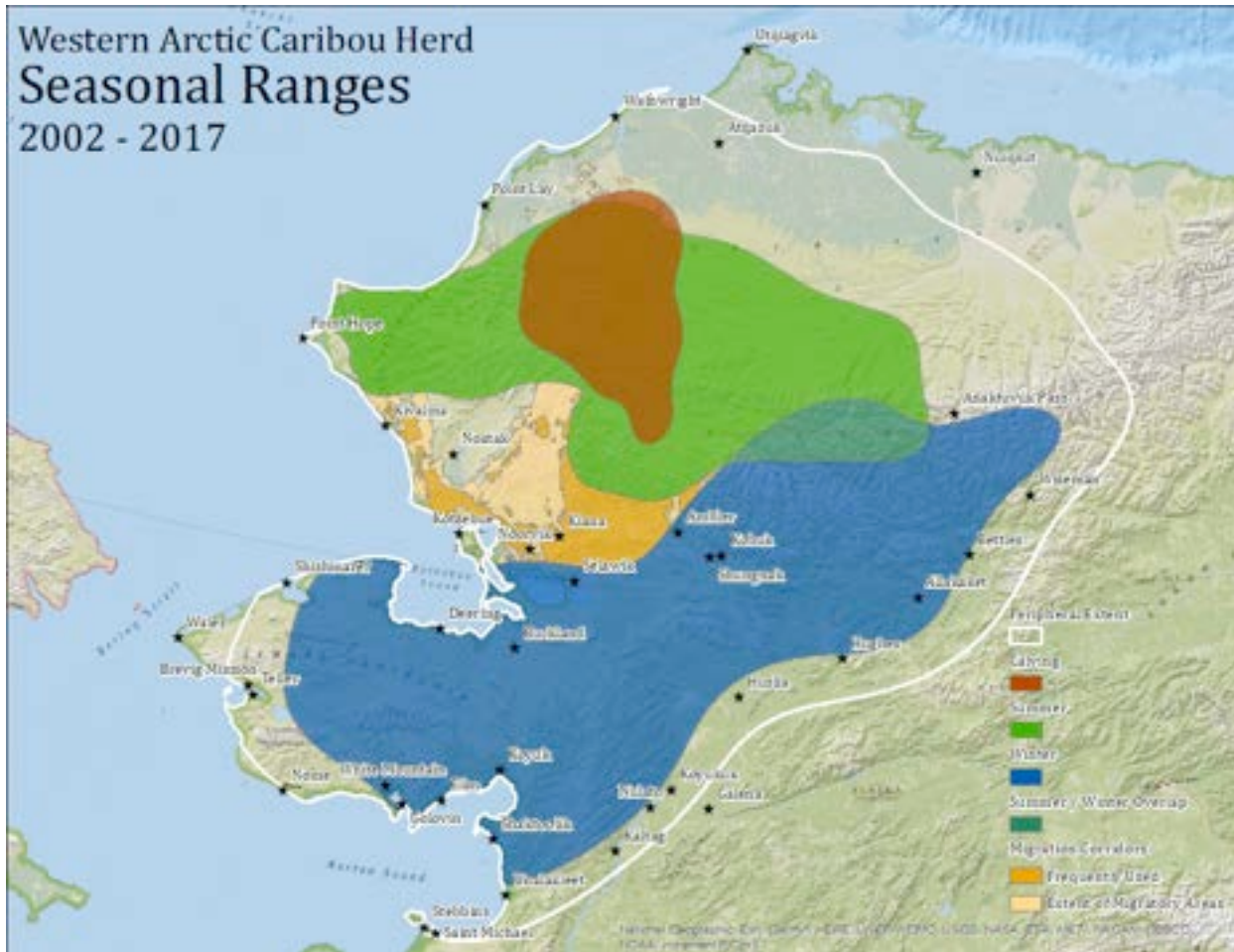
Cow mortality affects the trajectory of the herd (Dau 2011, 2013, Prichard 2009, NWARAC 2019a). The long-term mortality rate of radio-collared adult cows averaged 19% from 1987-2020 (WACHWG 2022). The annual mortality rate increased from an average of 15% between 1987 and 2003 to 23% from 2004-2014 (**Figure 4**, Dau 2011, 2013, 2014, 2015). Mortality rates declined in 2015 and 2016, but then increased sharply in 2017. However, the increased mortality rate in 2017 may have been due to a low and aging sample size as few caribou were collared in the previous two years (Prichard et al. 2012, NWARAC 2019a) and/or difficult weather conditions (Gurarie et al. 2020). Prior to 2019, ADF&G and NPS deployed collars on caribou at Onion Portage via boat in September. Only seven collars total were deployed in both 2017 and 2018 due to fewer caribou migrating through Onion Portage at predictable times. ADF&G and NPS began deploying collars using net gun techniques via helicopter in April 2019 (Joly and Cameron 2021). Since 2018, estimated mortality rates have remained above the long-term average, ranging from 23-36%. Estimated mortality includes all causes of death including hunting (Dau 2011). Dau (2015) states that cow mortality estimates are conservative due to exclusion of unhealthy (i.e. diseased) and yearling cows from collaring. These mortality estimates are influenced by the age at which individuals were collared (which is unknown), sample size and how long the collars have been on individuals (Dau 2015, Prichard et al. 2012).

Cow mortality is low over winter and then increases in the spring/early summer, likely due to the convergence of declining body condition, demands of migration, and lactation prior to the availability of higher quality forage. Conversely, bull mortality spikes during the fall, both naturally from the demands of rut and from targeted human harvest (Dau 2013, 2014). Additionally, Prichard (2009) and Dau (2015) suggest that harvest levels and rates of cows can greatly impact population trajectory.

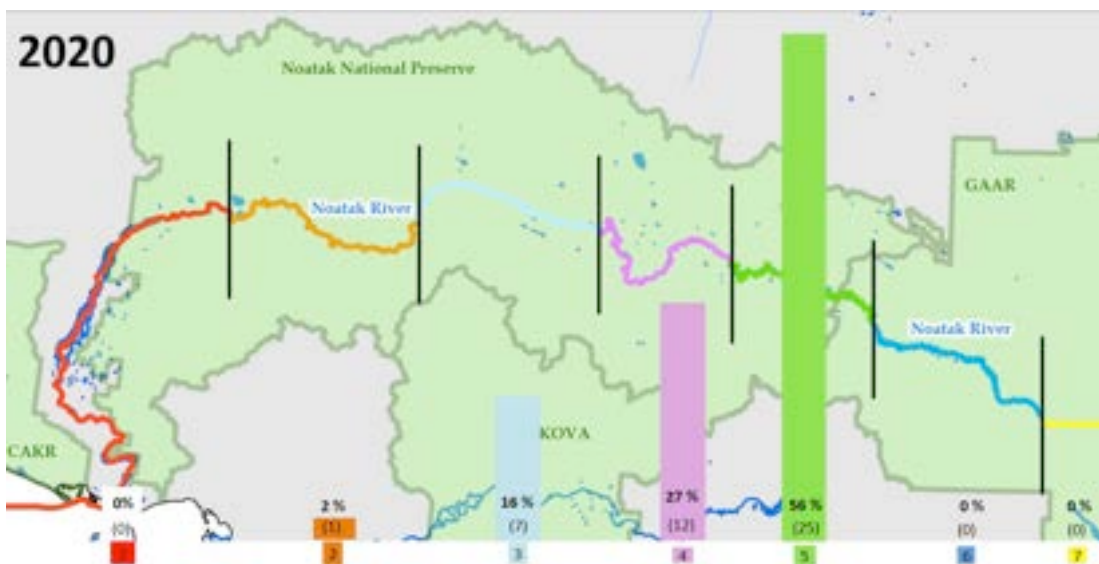
Increased predation, hunting pressure, deteriorating range condition (including habitat loss and fragmentation), climate change, fall and winter icing events, and disease may be contributing factors to the population decline (Joly et al. 2011; Dau 2014, 2015). Joly et al. (2007) documented a decline in lichen cover in portions of the wintering areas of the WACH, which continued through at least 2015 (BLM, unpublished data).



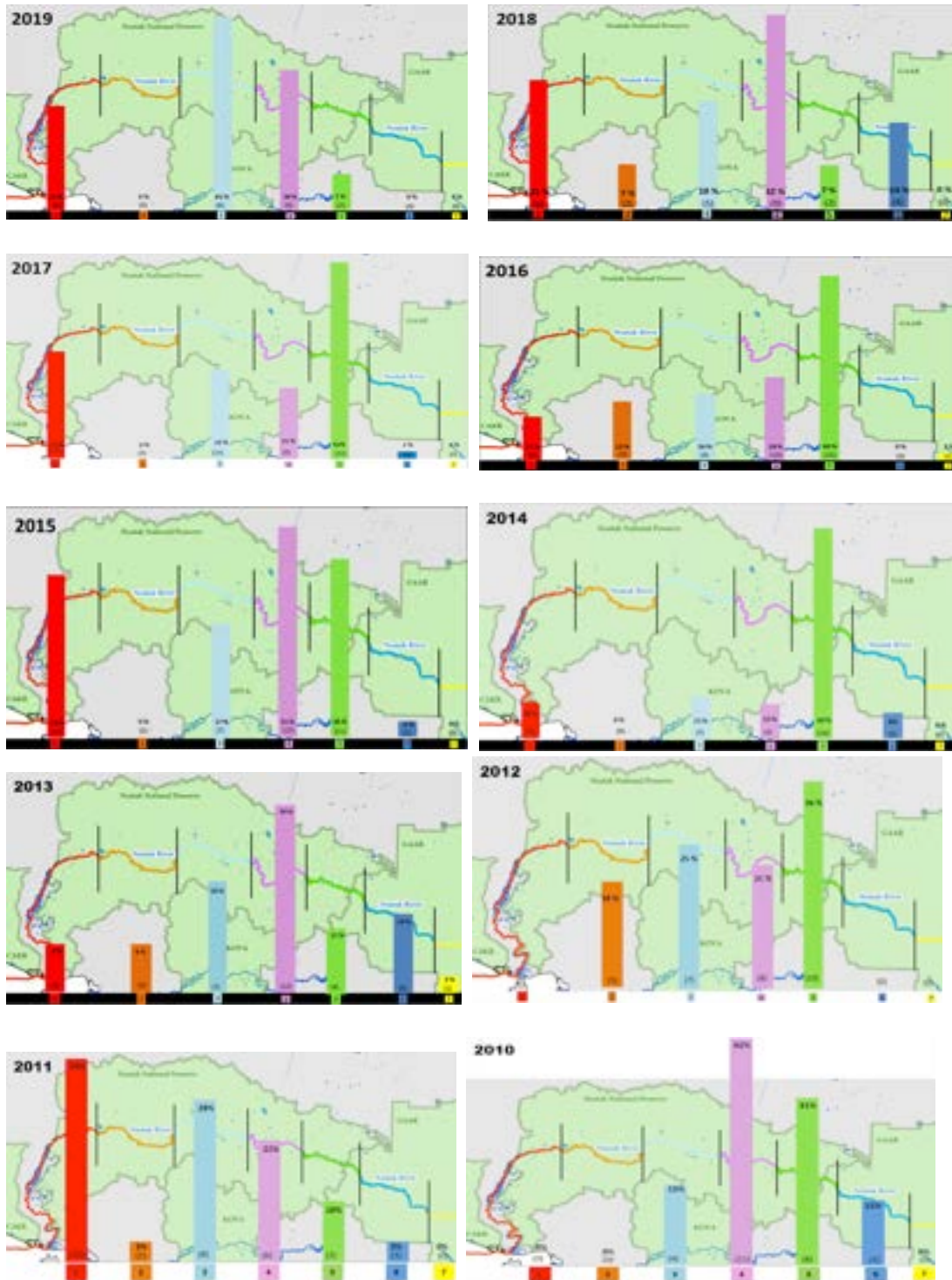
WP24-28/29 - Units 21D, 22, 23, 24, and 26A, Reduce harvest limit to four caribou per year only one of which may be a cow



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



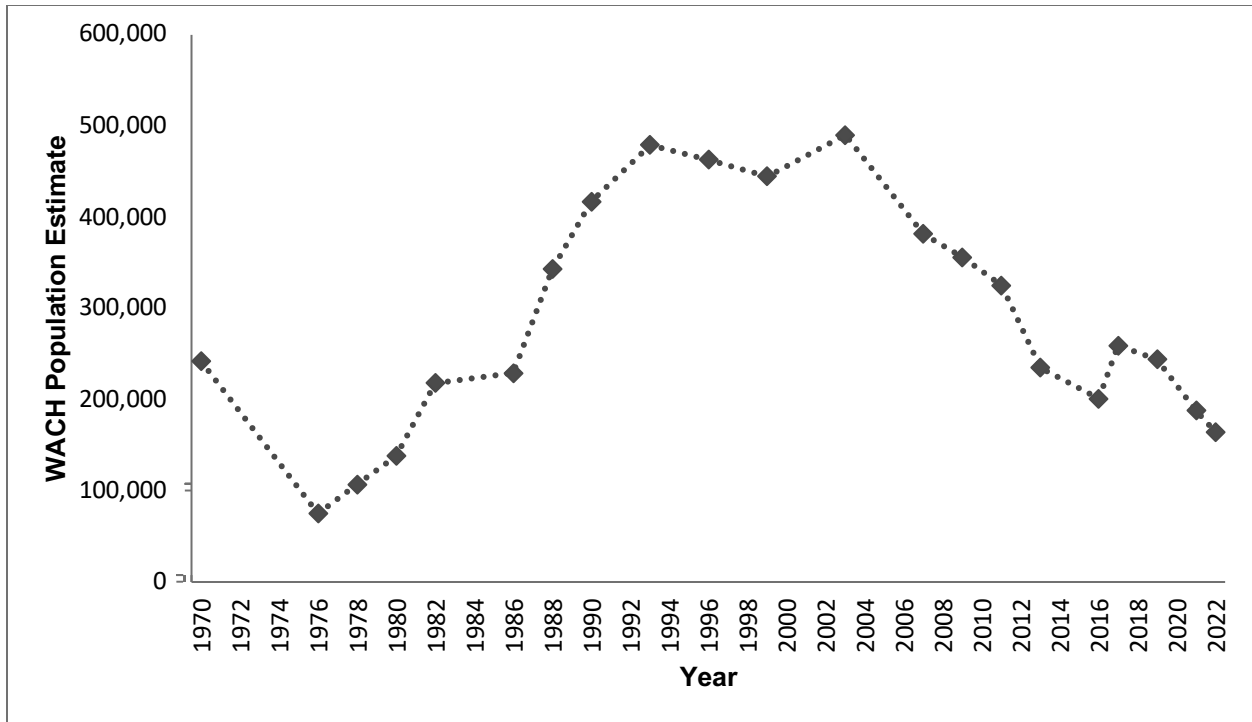
WP24-28/29 - Units 21D, 22, 23, 24, and 26A, Reduce harvest limit to four caribou per year only one of which may be a cow



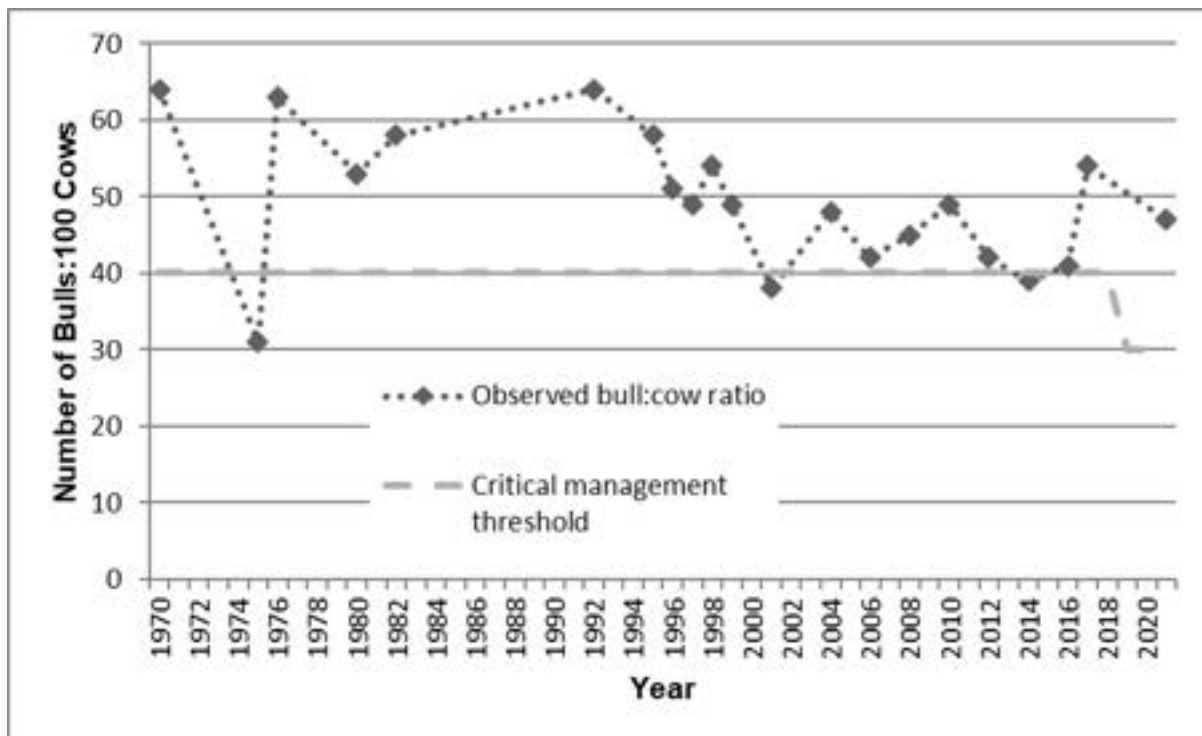
**Figure 1.** 2010-2020 distribution of caribou crossing the Noatak River during fall. Histograms depict where collared female caribou crossed the Noatak River, generally from north to south, on their fall migration. Relative percentages (top number) and the absolute number (middle number) of caribou are provided. The river is divided into seven (lowest number) color-coded segments which are displayed in the background. The middle five segments are 100 river kilometers long, while the westernmost segment (red) is 200 km (before extending into the Chukchi Sea) and the easternmost (yellow) runs as far east as WACH caribou are known to migrate (Joly and Cameron 2021).

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

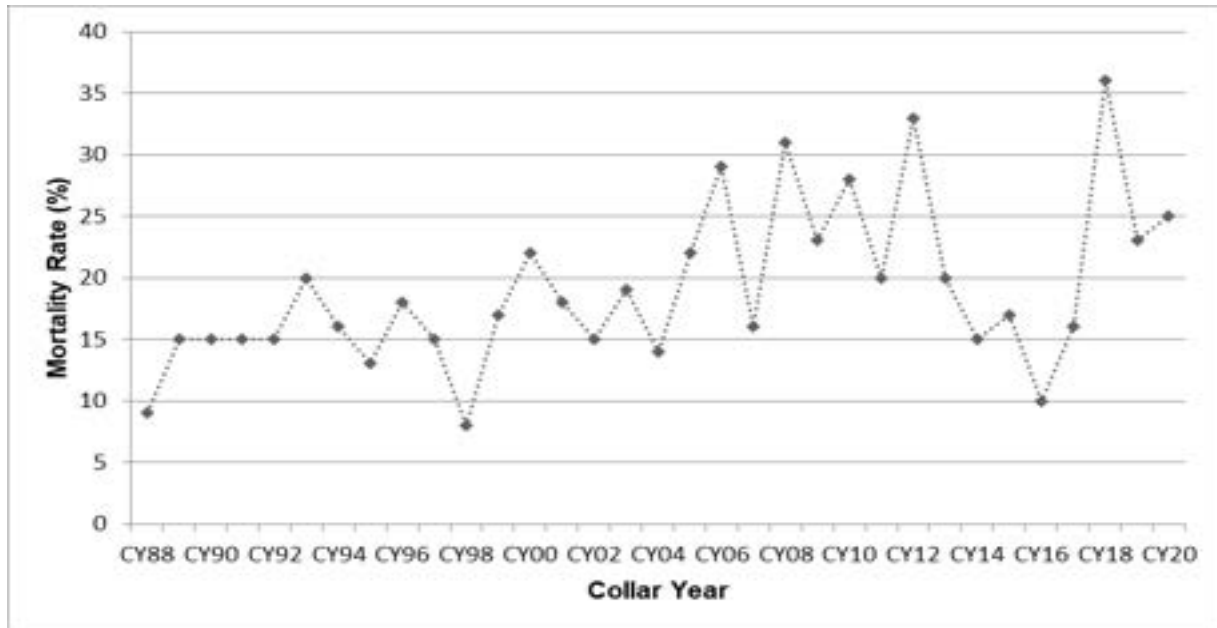
Management and Harvest Level	Population Trend			Harvest Recommendations May Include:
	Declining Adult Cow Survival <80% Calf Recruitment <15:100	Stable Adult Cow Survival 80%-88% Calf Recruitment 15-22:100	Increasing Adult Cow Survival >88% Calf Recruitment >22:100	
Liberal	Pop: 265,000+	Pop: 230,000+	Pop: 200,000+	<ul style="list-style-type: none"> <li>• Reduce harvest of bulls by nonresidents to maintain at least 30 bulls:100 cows</li> <li>• No restriction of bull harvest by resident hunters unless bull:cow ratios fall below 30 bulls:100 cows</li> </ul>
	Harvest: 14,000+	Harvest: 14,000+	Harvest: 14,000+	
Conservative	Pop: 200,000-265,000	Pop: 170,000-230,000	Pop: 150,000-200,000	<ul style="list-style-type: none"> <li>• Encourage voluntary reduction in calf harvest, especially when the population is declining</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 30:100 bull:cow ratio</li> </ul>
	Harvest: 10,000-14,000	Harvest: 10,000-14,000	Harvest: 10,000-14,000	
Preservative	Pop: 130,000-200,000	Pop: 115,000-170,000	Pop: 100,000-150,000	<ul style="list-style-type: none"> <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 30 bulls:100 cows</li> <li>• Harvest restricted to residents only, according to state and federal law. Closure of some federal public lands to non-qualified users may be necessary</li> </ul>
	Harvest: 6,000-10,000	Harvest: 6,000-10,000	Harvest: 6,000-10,000	
Critical	Pop: <130,000	Pop: <115,000	Pop: <100,000	<ul style="list-style-type: none"> <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 30 bulls:100 cows</li> <li>• Harvest restricted to residents only, according to state and federal law. Closure of some federal public lands to non-qualified users may be necessary</li> </ul>
	Harvest: <6,000	Harvest: <6,000	Harvest: <6,000	



**Figure 2.** The WACH population estimates from 1970–2022. Population estimates from 1986–2022 are based on aerial photographs of groups of caribou that contained radio-collared animals (Dau 2011, 2013, 2014; Parrett 2016, 2017a; Hansen 2019a; WACHWG 2021, 2022).



**Figure 3.** Bull:cow ratios for the WACH (Dau 2015; ADF&G 2017c; Parrett 2017a; WACHWG 2021).



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



**Figure 5.** Calf:cow and short yearling (SY):adult ratios for the WACH (Dau 2013, 2015, 2016a; ADF&G 2017c; Parrett 2017a; NWARAC 2019a, 2023; WACHWG 2021, 2022). Short yearlings are 10-11 months old caribou.

### Teshkepuk Caribou Herd

The TCH calving and summering areas overlap with the eastern portion of the National Petroleum Reserve–Alaska (NPR–A). Most of the TCH moves toward Teshkepuk Lake in May to calve in early June. The primary calving grounds of the TCH (approximately 1.8 million acres) occur to the east, southeast and northeast of Teshkepuk Lake (**Figure 6**, Person et al. 2007; Wilson et al. 2012). From late June through July cows and bulls move to seek relief from insects (**Figure 6**, Carroll 2007; Parrett 2007). Fall and winter movements are more variable, although most of the TCH winters on the coastal plain (Carroll 2007). The TCH winters in four relatively distinct areas: the coastal plain between Atqasuk and Wainwright; the coastal plain west of Nuiqsut; the central Brooks Range; and the shared winter ranges with the WACH in the Noatak, Kobuk, and Selawik drainages (**Figure 6**, Parrett 2021).

State management objectives for the TCH include (Parrett 2021):

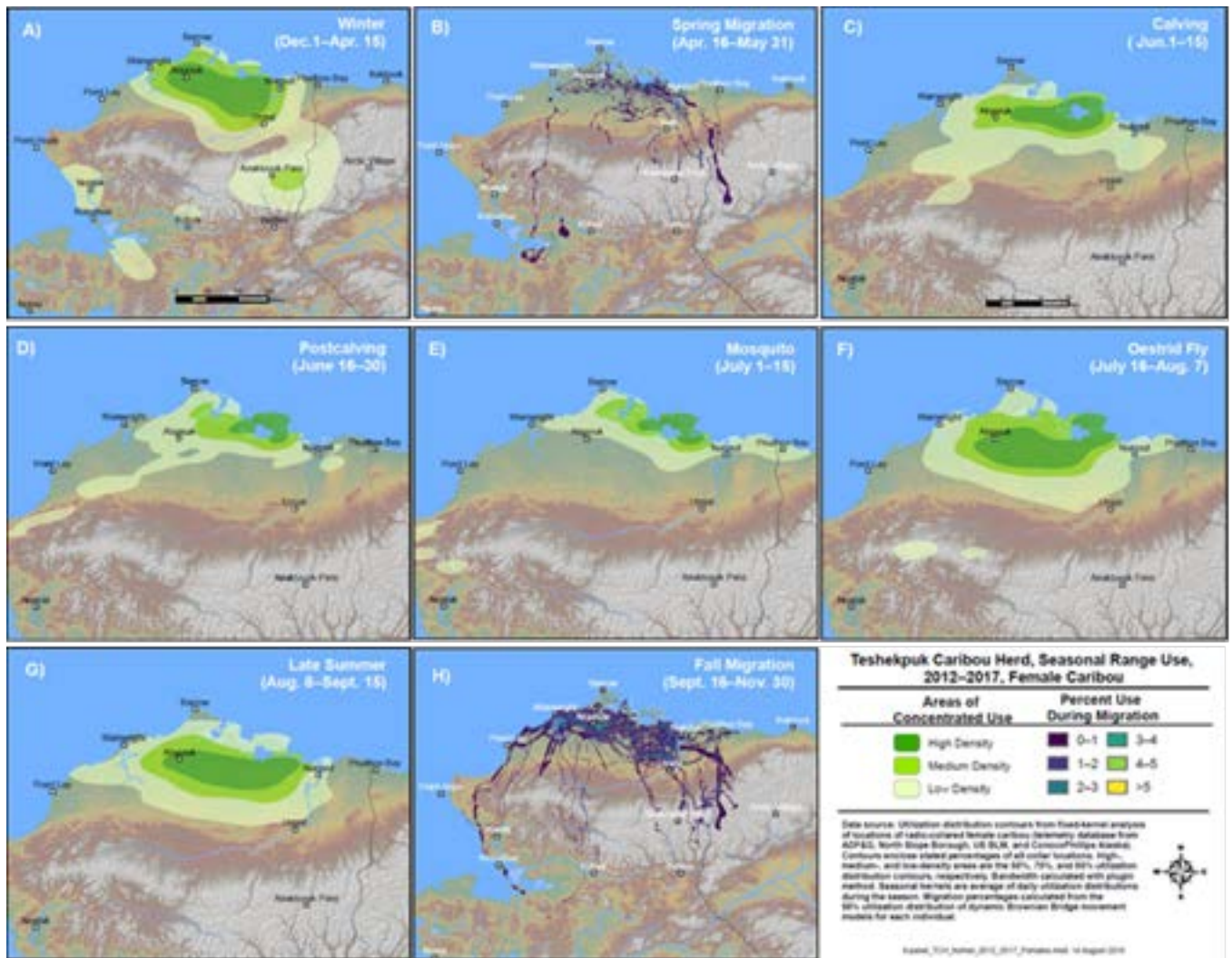
- Maintain a population of at least 15,000 caribou, recognizing that caribou numbers naturally fluctuate.
- Provide a harvest of at least 900 caribou in a sustainable manner.
- Maintain a population with a range of 25–35 bulls:100 cows, depending upon population level.
- Obtain harvest estimates with sufficient data such that a 15% change in annual harvest is detectable.
- Develop regulations that have broad support among users and cooperating agencies.
- Clarify the relationships between both abundance and vital rates with harvest, habitat, body condition, predation, seasonal mixture with adjacent herds, and immigration between adjacent herds.
- Monitor herd characteristics and population parameters.
- Provide high-quality data on distribution, habitat preferences, and movement patterns to facilitate effective planning and mitigation of oil development and associated infrastructure.

Since 1984, the minimum population of the TCH has been estimated from aerial photocensuses and radio-telemetry data. The TCH population increased from an estimated 18,292 caribou (minimum estimate 11,822) in 1984 to 68,932 caribou (minimum estimate 64,106) in 2008. From 2008 to 2014, the population declined by almost half to 39,000 caribou (Parrett 2015a). Interpretation of population estimates is difficult due to movements and range overlap among caribou herds, which results in both temporary and permanent immigration and emigration (Person et al. 2007). For example, the minimum count in 2013 contained an unknown number of CACH caribou (Parrett 2015a). Following the 2013 census, ADF&G made the decision to manage the TCH based on the minimum count because the bulk of the animals that were estimated rather than counted were with the WACH at the time of the photocensus (Parrett 2015b, pers. comm.). In 2017, the minimum count was 56,255 with a population estimate of 55,614 (SE = 2,909). During 2012–2017, the management objective of maintaining a population of at least 15,000 caribou was met (Parrett 2021). The total minimum count for the 2022 photocensus was 51,225 caribou and the abundance estimate was 61,593 animals (95% CI: 52,188-70,998) (Daggett 2023, pers. comm.).



In 2013 and 2016, the number of bulls:100 cows was 39 bulls:100 cows and 28 bulls:100 cows, respectively (Parrett 2011, 2013, 2015a; Parrett 2017a, pers. comm.). Comparison of bull:cow and calf:cow ratios from 1991-2000 and later years is not possible due to changes in methodology. The calf:cow ratio increased from 18 calves:100 cows between 2009-2013 to 48 calves:100 cows in 2016 (Parrett 2013, 2015a; Parrett 2017a, pers. comm.). In addition, the number of SY:adults declined from an average of 20 SY:100 adults between 1999 and 2008 to an average of 14 SY:100 adults from 2009-2014 (Parrett 2013) and increased in 2016 to 29 SY:100 adults (Parrett 2017a, pers. comm.). From 2018-2021, the SY:adults returned to an average of 14 SY:100 adults. The most recent survey in 2023 decreased to 6.8 SY:100 adults (Daggett 2023, pers. comm.).

The annual mortality of adult radio collared females from the TCH has remained close to the long term (1991-2012) average of 14.5% (range 8–25%) (Parrett 2011, 2015a; Caribou Trails 2014). As the TCH declined, calf weights declined, indicating that poor nutrition may have had a significant effect on this herd (Carroll 2015, pers. comm.; Parrett 2015b, pers. comm.). In 2016 increased calf weights, high adult female survival (92%), high yearling recruitment (29 yearlings:100 adults), high calf production (81%), and a high calf:cow ratio (48 calves:100 cows) suggest that the population may be stable or declining at a slower rate (Parrett 2017a, pers. comm.; Klimstra 2017). In contrast, the body condition of individuals from the WACH, which declined dramatically over the same time period, had remained relatively good, indicating that caribou were still finding enough food within their range (Caribou Trails 2014; Dau 2014). Parturition rates from 2018-2022 peaked at 85% in 2020 and have since declined to 45% in 2022 (Daggett 2023, pers. comm.).



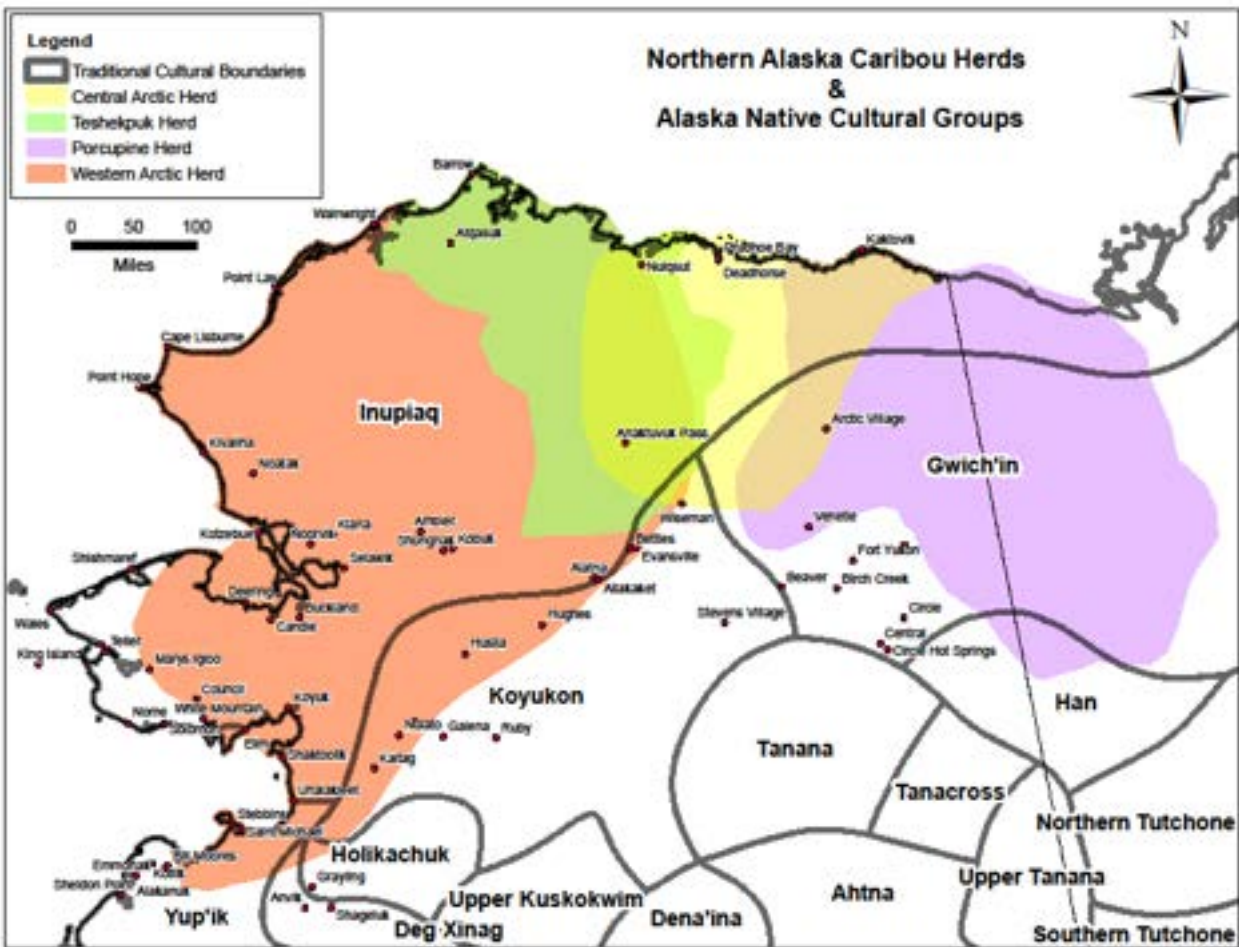
**Figure 6.** Seasonal ranges, 2012–2017, for satellite collared female caribou of the TCH Alaska (Parrett 2021). Note: Utqiagvik was known as Barrow until 2016.



### Cultural Knowledge and Traditional Practices

The potential effects of this proposal span the traditional territory the Iñupiat of the North Slope, Northwest Arctic and the Seward Peninsula, Yup'ik communities in the southern portion of the Seward Peninsula and northern portion of the Yukon region, and the Koyukon Athabascans of the Western Interior (**Map 3**). However, caribou are encountered less frequently by communities on the edges of the WACH's range, particularly during times of population decline (Burch 2012).

Because the communities that would be most directly affected by this proposal are located in traditional Iñupiaq territory, this section focuses on their cultural uses of caribou. Caribou have been a significant resource for the Iñupiat for thousands of years. Archaeological deposits at the Onion Portage site on the Kobuk River document 10,000 years of caribou hunting at this location, which is still used today (Anderson 1968, 1988), and even older archaeological deposits dated to approximately 11,000 years ago occur in the Kivalina River drainage (Buvit et al. 2019).



**Map 3.** Map depicting the overlap of northern Alaska caribou herds and traditional territories of Alaska Native cultural groups.

Iñupiat values are based on the perspective that the human-animal relationship is reciprocal. Maintaining the reciprocal relationship requires respectful human behavior toward animals that is guided by a system

of rules. Three of the primary rules are 1) that humans must harvest animals who give themselves, 2) they must not waste any part of animals they harvest, and 3), in times of low animal populations, people must intentionally limit their harvest (Burch 1984, 1994, 1995; ADF&G 1992).

Failure to follow these rules or treating animals with disrespect will prevent animals from returning. Northwest Arctic Council members have testified about the decline in local availability of caribou, which has meant that many people have gone without caribou in recent years (NWARAC 2023). This proposal reflects the practice of intentional harvest limitation in order to maintain respectful and reciprocal relations between humans and caribou. At the Northwest Arctic Council meeting in October 2022, one Council member explained:

Caribou is, I know they're going down. My son got caribou. I have caribou. So, he gave away to elders. And I always tell him don't get any more, I'll stop him when we have enough caribou because a family, my size, there's six of us in the family, and four caribou is enough for the whole year, and I always tell my son that's enough. When you get four caribou, that's good. The caribou herd is going down, we're not going to hunt this spring. And young men now, now days, if you teach them right, they'll listen, and I'm glad my son is doing that. Because I know the caribou is going down and we have to respect that (NWARAC 2022: 20).

### Human population of the region

Decision-making on WACH harvest limits may incorporate demographic data for communities within the core range of the WACH. **Tables 2** highlights total population and the number of households for those regions with the highest documented harvest of caribou within the range of the WACH (U.S. Census 2020). **Table 3** shows the number of households harvesting caribou in the most recent ADF&G, Division of Subsistence surveys (CSIS 2023).

**Table 2.** Population and number of households in the Northwest Arctic Borough, North Slope Borough (excluding Kaktovik), and Nome Census Area (U.S. Census 2020). Kaktovik is excluded from the North Slope data because it is in Unit 26C, beyond the range of the WACH. Note that the Unit 24 community of Anaktuvuk Pass is within the North Slope Borough.

Census Area	Total Population	Number of Households
Northwest Arctic Borough	7,793	1,756
North Slope Borough, excluding Kaktovik	10,748	2,042
Nome Census Area	10,046	2,714
<b>Total</b>	<b>28,587</b>	<b>6,512</b>

**Table 3.** The number of households (in areas with a customary and traditional use determination for caribou within the units included in this proposal) harvesting caribou in in the most recent survey years, calculated based on ADF&G, Division of Subsistence data (CSIS 2023). Villages were not all surveyed in the same year. Note that totals for Unit 22 do not include Nome, for which no caribou subsistence survey data are available. Caribou survey data for Nunam Iqua and Kotlik date to 1980 and were deemed too old for inclusion. Some communities in Unit 26A

harvest primarily from the Teshekpuk Herd. These numbers do not reflect recent lack of availability of caribou for many communities, and therefore may over-estimate the number of households currently harvesting caribou.

Unit	Estimated Number of Households Harvesting Caribou in Most Recent Subsistence Survey Years
Unit 18 communities with C&T	12
Tanana (20E) and Stevens Village (25D)	4
Unit 21 (excluding communities in 21A; no C&T)	3
Unit 22 (excluding Nome; no data)	289
Unit 23	784
Unit 24 (excluding Anaktuvuk Pass)	38
Unit 26A and Anaktuvuk Pass	795
<b>Total</b>	<b>1,925</b>

Many gaps in the data remain, including the number of individuals (rather than households) harvesting caribou during past survey years and the number of potential caribou permit holders per household or in total. Of note, Wolfe et al. (2010) demonstrated that households producing more food in rural subsistence communities in Alaska were characterized by their inclusion of “multiple working-age males.” Estimates of the number of potential permit holders may take into consideration the number of men of working age as one factor, as hunting has traditionally been dominated by men in Iñupiaq regions, although there are important exceptions to this pattern, as not all men of working age participate in the subsistence economy, and some women are active hunters (Satterthwaite-Phillips et al. 2016).

#### *Unequal distribution of harvest effort*

This proposal seeks a reduced harvest limit for the WACH, and past subsistence harvest estimates can inform consideration of reduced limits. ADF&G, Division of Subsistence has conducted periodic subsistence surveys for communities within the range of the WACH between 1982 and 2018. These data have limitations, such as the fact that communities are often surveyed only once every ten years, not each survey year is representative of typical subsistence use, and even in representative years, harvest numbers are estimates only. Nonetheless, subsistence surveys do provide valuable information on historical baseline harvest levels.

While wildlife regulations allot harvest limits on an individual basis, not all members of a community harvest and distribute wild foods at equal levels. Generally, many more people use caribou than harvest caribou because of the Iñupiaq cultural value of harvesting and sharing subsistence foods to provide for those who do not have a hunter in the household. As first posited by Wolfe (1987) and supported by decades of ADF&G, Division of Subsistence research, it is common for 30% of the households in rural Alaskan communities to harvest 70% of a community’s total annual harvest measured in edible pounds of food (Magdanz et al. 2005: 41, Wolfe et al. 2010).

At their March 7-8, 2023 meeting, the Northwest Arctic Council discussed what they called “super hunters,” hunters that provide for a large number of families, and who would need designated hunter permits under a reduced harvest limit scenario:

We kind of named them as super hunters because a lot of families will -- five families will pull together gas and grub and whatever necessary for three boats to go out and hunt for six or seven families; that's why we call them super hunters, because they're providing for a lot of people that can't, you know, can't afford the gas, can't afford the boats, or don't have a boat, or an elder, that's one of the reasons why we kind of labeled them as super hunters but we need to ensure that they have this paperwork provided to them if they are going to do that” (NWARAC 2023:110).

**Tables 4-7** compare the estimated number of caribou harvested in each community distributed over all households with harvest *only per households that actually harvested caribou*. Note that while harvest limits are individual, rather than household based, ADF&G, Division of Subsistence data on the percentage of a community harvesting caribou is only available on a household basis. The average number of potential permit-holders per household is unknown.

**Table 4.** For communities in Unit 23, this table shows the estimated number of caribou harvested (1) per household, and (2) per household successfully harvesting caribou for all surveys conducted periodically between 1986 and 2018. Calculated based on data from ADF&G, Division of Subsistence Community Subsistence Information System (CSIS 2023) and ADF&G, Division of Subsistence Technical Papers (Mikow et al. 2014., Mikow and Kostick 2016). Survey years with key data missing were excluded.

Community	Estimated Number of Caribou per Household	Estimated Number of Caribou per Households that Successfully Harvested Caribou
Ambler	5.3	10.5
Buckland	7.4	11.2
Deering	5.6	11.0
Kiana	4.2	6.8
Kivalina	2.9	5.5
Kobuk	4.8	7.2
Kotzebue	2.1	5.7
Noatak	3.8	6.7
Noorvik	4.0	6.8
Point Hope	1.1	3.6
Selawik	5.9	10.0
Shungnak	7.6	12.2
<b>Average</b>	<b>4.6</b>	<b>8.1</b>

**Table 5.** For communities in Unit 26A and Anaktuvuk Pass, this table shows the estimated number of caribou harvested (1) per household, and (2) per household successfully harvesting caribou for all surveys conducted periodically between 1985 and 2014. Calculated based on data from ADF&G, Division of Subsistence Community Subsistence Information System (CSIS 2023). Survey years with key data missing were excluded.

Community	Estimated Number of Caribou per Household	Number of Caribou per Households that Successfully Harvested Caribou
Anaktuvuk Pass	7.6	16.0
Atqasuk	3.7	5.8
Nuiqsut	4.7	7.3
Point Lay	4.7	7.2
Utqiagvik	2.1	6.6
Wainwright	6.2	10.1
<b>Average</b>	<b>4.8</b>	<b>8.8</b>

Although Anaktuvuk Pass is located on the edge of Unit 24, it is included in the table for Unit 26A communities because of cultural continuity with the North Slope Region. However, as an inland community, Anaktuvuk Pass relies more heavily on caribou than coastal North Slope communities that have access to marine mammals (Brown et al. 2016). Despite important differences between communities, taken as a whole, residents of Unit 23 and residents of Unit 26A and Anaktuvuk Pass together have similar levels of average estimated per household harvest (4.6 and 4.8 caribou, respectively) and similar average estimated harvest per households that successfully hunted caribou (8.1 and 8.8 caribou, respectively) (Tables 4 and 5).

In terms of harvest per household successfully harvesting caribou, the highest average in Unit 23 was 12.2 caribou per household in Shungnak (Table 4), and the highest average in Unit 26 and Anaktuvuk Pass was 16 caribou, in Anaktuvuk Pass (Table 5). The estimated number of households harvesting caribou in the most recent survey years was 784 in Unit 23 and 795 in Unit 26A and Anaktuvuk Pass, for a total of 1,579 households (Table 3, CSIS 2023).

Note the significant difference between the two measures of caribou harvest (distributed across all households vs. only those households harvesting caribou) for both Units 23 and 26A. In considering how such numbers compare to the proposed reduction to four caribou per year per permit holder, it is worth noting that some “super households” (Wolfe 1987) that harvest for the wider community are likely to have multiple hunters, each of whom could hold a permit.

**Table 6.** For communities in Unit 22, this table shows the estimated number of caribou harvested (1) per household, and (2) per household successfully harvesting caribou for all surveys conducted periodically between 1989 and 2018. Calculated based on data from ADF&G, Division of Subsistence Community Subsistence Information System (CSIS 2023). Survey years with key data missing were excluded. Note that this table does not include survey data for Nome, which are not available.

Community	Estimated Number of Caribou per Household	Estimated Number of Caribou per Households that Successfully Harvested Caribou
Brevig Mission	0.8	5.1
Elim	2.0	4.0
Golovin	<0.1	1.0

Community	Estimated Number of Caribou per Household	Estimated Number of Caribou per Households that Successfully Harvested Caribou
Koyuk	3.6	6.1
Saint Michael	0.3	3.5
Shaktolik	2.7	5.2
Shishmaref	3.0	6.7
Stebbins	0.1	6.3
Teller	0.2	2.9
Unalakleet	2.3	6.3
Wales	<0.1	3.4
White Mountain	1.2	4.5
<b>Average</b>	<b>1.2</b>	<b>4.6</b>

In Unit 22 communities (excluding Nome, for which no data are available), the average estimated per household harvest was 1.2 caribou, while the estimated harvest per harvesting household was 4.6 caribou, with a high of 6.7 caribou in Shishmaref (**Table 6**). The estimated number of households harvesting caribou in the most recent survey years was 289 for Unit 22 (**Table 3**, CSIS 2023).

**Table 7.** For communities in Unit 24, this table shows the estimated number of caribou harvested (1) per household, and (2) per household successfully harvesting caribou for all surveys conducted periodically between 1982 and 2011. Calculated based on data from ADF&G, Division of Subsistence Community Subsistence Information System (CSIS 2023). Survey years with key data missing were excluded.

Community	Estimated Number of Caribou per Household	Estimated Number of Caribou per Households that Successfully Harvested Caribou
Alatna	1.6	4.1
Bettles	1.2	4.1
Bettles/Evansville	0.2	2.3
Evansville	0.2	1.6
Coldfoot	0.4	1.6
Hughes	0.4	5.3
Huslia	1.4	4.3
Wiseman	0.8	1.3
<b>Average</b>	<b>0.8</b>	<b>3.1</b>

The availability of the WACH within the traditional territories of the interior Athabascans is more variable; harvest of caribou in these communities depends on the proximity of migrations to each village (Brown et al. 2004). In Unit 24 communities (excluding Anaktuvuk Pass), the average harvest per household was 0.8 caribou, and the average harvest per harvesting household was 3.1 caribou (**Table 7**).

No table is included for Unit 21D, remainder communities, where caribou harvest has only been documented for Galena in surveys conducted in the last 15 years. In that community, households harvesting caribou took an average of 2.5 caribou per household (CSIS 2023). Nor is a table included for Unit 18 communities, or Stevens Village and Tanana, which also have a customary and traditional use determination in portions of the WACH range. These communities historically have very low harvest levels (CSIS 2023). However, lower caribou harvest, reflecting intermittent and marginal availability, does not mean that caribou are not important to these communities.

When considering the per household caribou harvest levels shown in **Tables 4-7**, it is not surprising that the most vocal participants in the recent public hearings and tribal consultations are from the high-harvesting regions: residents of northwest Alaska in Unit 23, residents of the North Slope in Unit 26A and Anaktuvuk Pass.

Caribou harvest is affected by multiple factors: harvest limits, availability of animals, shifting migration routes, the need to share with nearby communities, human population size, community location, and the availability of other resources. The numbers in the tables cited in this section are approximations and do not tell the entire story of caribou harvest or need in these communities.

Multiple considerations and pressures determine how many caribou are harvested when a successful hunt is made. For example, in Unit 23, residents of some communities have had to “greatly increase their expenditure of money and effort to maintain...harvest levels” (Dau 2015:14-30). This is due in part to having to travel farther, more frequently, and for longer durations to find caribou (Halas 2015; Gonzalez et al. 2018), which is made even more expensive by rising fuel prices. A reduced harvest limit may make such large investments untenable for some hunters, who would otherwise have provided for the wider community. Although designated hunter permits could ameliorate this outcome, these permits currently present bureaucratic and logistical challenges to rural residents.

Harvest data from comprehensive subsistence household surveys are not sufficiently up to date to provide accurate information on the full impact that the WACH’s decline and altered migration pattern may already be having on caribou availability and harvest levels. These surveys are not collected every year in every community. Currently, ADF&G Division of Subsistence is conducting surveys of caribou harvest in Selawik, Shungnak, Noatak, Deering, and Kobuk. This research is scheduled to be completed in 2024 (Cold 2021).

#### *Cow harvest*

In addition to harvest numbers, constraints on whether cows or bulls are harvested must also be taken into consideration. In the fall and prior to freeze-up, bulls have traditionally been preferred because they are fatter than cows (Georgette and Loon 1993; NWARAC 2023). After freeze-up, cows are preferred, because bulls are typically skinnier and in rut by then; the meat smells bad and is of poor quality (Braem et al. 2015; NWARAC 2023).

In some—but not all—survey years, ADF&G, Division of Subsistence data in the CSIS contains a breakdown of caribou harvest by male, female, or sex unknown. In Unit 23, in surveys conducted periodically between 1964 and 2018 for which this information exists, an average of 60% of the harvest was male and 30% was female, with 10% being unknown (**Appendix 2**). In Unit 26A and Anaktuvuk

*WP24-28/29 - Units 21D, 22, 23, 24, and 26A, Reduce harvest limit to four caribou per year only one of which may be a cow*

Pass, in surveys conducted periodically between 1985 and 2014 for which information is available, an average of 70% of caribou harvested were male, 25% were female, and 5% were of unknown sex (**Appendix 2**). However, there was wide variability between years and communities in the breakdown of the harvest by sex.

*Factors contributing towards increased harvest pressure on cows*

Harvest of caribou by federally qualified subsistence users may be shifting towards cows due to the delayed migration of caribou into Unit 23 community hunting areas, as recently noted by a Northwest Arctic Council member (NWARAC 2023). However, current harvest report data on cow vs. bull harvest by federally qualified subsistence users are not available. With the delayed migration, caribou have been arriving in some Unit 23 communities after the rutting season has begun, at which point bulls are considered inedible. The local preference is to avoid hunting bulls for many months after the rut. The Western Arctic Caribou Herd Working Group has identified limiting cow harvest as the highest priority for WACH conservation (WACH Working Group 2022). The proposed harvest limit includes a significant limitation on cow harvest; an alternative incremental approach would begin with only limiting cow harvest, an option described in the “Alternatives Considered” section of this analysis.

*Council rationale for proposing a reduced harvest limit*

The Northwest Arctic Council has identified multiple factors that may be negatively affecting the WACH population and local people’s ability to harvest caribou. Climate change, delayed caribou migration, development, increased predation by bears and wolves and/or a combination of these factors has led to difficulty for caribou-dependent communities in Unit 23 and (Dau 2015, Braem et al. 2015, NWARAC 2020, 2021). Reducing their harvest is one of the few actions Unit 23 communities can take to attempt to slow the WACH population decline. The requests to intentionally reduce caribou harvest reflect Iñupiaq values and the hope of intentionally limiting harvest to contribute to the recovery of the caribou population upon which communities depend.

During discussion of this proposal and an identical Special Action Request at their March 7-8, 2023 meeting, members of the Northwest Arctic Council discussed their rationale for supporting the reduced harvest limit. Council members emphasized the importance of acting pre-emptively and acknowledged that local residents would have to make sacrifices for the preservation of the herd, including taking fewer cows:

We don't want to hit rock bottom with the caribou herd. If we lose that, if we go beyond what we have now we don't even know if we can get our caribou back (NWARAC 2023: 59).

We have to do something to try to preserve this herd even if it means a lot less than what we were getting before. [A] limit to hunting of the cows is the only way because they're the ones who...can bring this herd back. It's one of the things that we have to sacrifice (NWARAC 2023: 54).

One Council member from Kotzebue discussed the need for action parallel to the regulatory process to educate the young people in Northwest Arctic communities about the importance of saving the caribou population. Another Council member from Kotzebue emphasized that restricting harvest by federally



qualified subsistence users would demonstrate local will to self-limit harvest in order to protect the WACH (NWARAC 2023).

The two public hearings and the tribal consultations on WSA22-05/06 showed the conflict faced by participants (see summaries in “Current Events”). The affected communities who rely on the Western Arctic Caribou Herd are aware that conservation measures are needed. However, they are concerned about drastic harvest limit reductions and have asked for a decision-making process that is community-based and allows adequate time for input and consultation with federally qualified subsistence users. At the Federal Subsistence Board meeting on WSA22-05/06, the Chair of the Northwest Arctic Council acknowledged that local reaction to the proposed harvest limit had been strongly negative but emphasized that some conservation action would ultimately need to be taken by federally qualified subsistence users (NWARAC 2023).

## **Harvest History**

### Western Arctic Caribou Herd harvest

The WACH Working Group provides recommendations on herd management, including harvest levels. Currently, the WACH is within the “preservative declining” level, which prescribes a harvest of 6,000-10,000 caribou (**Table 1**). Previous versions of the WACH management plan recommended a harvest rate of 6% of the estimated population when the herd was declining (WACHWG 2011, Parrett 2017b, pers. comm.). The current recommended harvest rate at the preservative declining level is 5% at 200,000 and 4.6% at 130,000. As the 2022 population estimate was 164,000 caribou, the harvestable surplus is currently 7,872 caribou (4.8% of 164,000) (NWARAC 2023; WACHWG 2022). The State manages the WACH on a sustained yield basis (i.e. managing current harvests to ensure future harvests). Of particular concern is the overharvest of cows, which may have occurred since 2010/11 (Dau 2015). Dau (2015:14-29) states, “even modest increases in the cow harvest above sustainable levels could have a significant effect on the population trajectory of the WACH.”

Caribou harvest by local hunters is estimated from community harvest surveys (**Appendix 2**), if available, and from models developed by A. Craig with ADF&G’s Division of Wildlife Conservation Region V. These models incorporate factors such as community size, availability of caribou, and per capita harvests for each community, which are based on mean values from multiple community harvest surveys (Dau 2015). In 2015, Craig’s models replaced models developed by Sutherland (2005), resulting in changes to local caribou harvest estimates from past years. While Craig’s models accurately reflect harvest trends, they do not accurately reflect actual harvest numbers (Dau 2015). This analysis only considers the updated harvest estimates using Craig’s new model as cited in Dau (2015). Caribou harvest by nonlocal residents and nonresidents are based on harvest reports from harvest tickets and registration permits (Dau 2015). Hunters considered local by ADF&G are functionally identical to federally qualified subsistence users (e.g. residents of St. Lawrence Island are technically federally qualified subsistence users, but do not frequently harvest Western Arctic caribou).

From 1999–2018, the rangewide average estimated total harvest from the WACH was 14,103 caribou/year, ranging from 11,729-16,219 caribou/year (Hansen 2020 and 2021a, pers. comm.), but has

generally been estimated at 12,000 +/- 1,750 caribou per year since 1996 (WACHWG 2021, WACHWG 2019b). Additionally, harvest estimates do not include wounding loss, which may be hundreds of caribou (Dau 2015). Year-specific harvest estimates have not been generated since 2018, in part because they are not very accurate (Hansen 2021a, pers. comm., WACHWG 2021). While all of these harvest estimates are above the preservative harvest level specified in the WACH Management Plan and indicate unsustainable harvest levels, actual harvest is unknown and could be much lower due to caribou being unavailable for harvest near local communities.

Local hunters account for approximately 95% of the total WACH harvest and residents of Unit 23 account for approximately 58% of the total harvest on average (ADF&G 2017c). Comparison of caribou harvest by community from household survey data (**Appendix 2**) with **Figure 1** demonstrates that local community harvests parallel WACH availability rather than population trends. For example, Ambler only harvested 325 caribou when the WACH population peaked in 2003 but harvested 685 caribou in 2012 when most of the WACH migrated through eastern Unit 23. Similarly, Noatak only harvested 66 caribou in 2010 when no GPS-collared caribou migrated through western Unit 23. Harvest increased substantially (360 caribou) the following year when 37% of the GPS-collared caribou (and thus, a greater proportion of the WACH) migrated through western Unit 23 (**Appendix 2**).

Between 1998 and 2020, annual reported caribou harvest in Unit 23 ranged from 168-814 caribou (Hansen 2021a, pers. comm.). Over the same time period, reported harvest by non-federally qualified users ranged from 131-657 caribou. The lowest reported harvest occurred in 2016 when all Federal public lands in Unit 23 were closed to non-federally qualified users, but before harvest reporting was required for federally qualified subsistence users. Regardless, local compliance with reporting mandates is considered low but increasing. In 2017 and 2018, registration permits became required under State and Federal regulations, respectively, which is reflected in the greater number of reported caribou harvest by federally qualified subsistence users. However, compliance with reporting caribou harvest still remains too low to accurately estimate total caribou harvest. On average, 76% of WACH caribou harvested by nonlocals are harvested in Unit 23 (Dau 2015). Between 2016, when Federal lands closures began, and 2020, reported caribou harvest by non-local hunters in Unit 23 averaged 254 caribou (WinfoNet 2018, 2019, Hansen 2021a pers. comm.).

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

The caribou harvest in Unit 21D averages 0-10 caribou/year (Dau 2009, 2013, 2016, pers. comm.).

#### Unit 26A and Teshekpuk Caribou Herd harvest

Reliance on caribou from a particular herd within Unit 26A varies by community. Residents of Atkasuk, Barrow, Nuiqsut, and Wainwright harvest caribou primarily from the TCH while residents from Anaktuvuk Pass, Point Lay, and Point Hope harvest caribou primarily from the WACH (Dau 2011, Parrett 2011, 2013). Weather, distance of caribou from the community, terrain, and high fuel costs are some of the factors that can affect the availability and accessibility of caribou. Residents of Nuiqsut, which is on the northeast corner of Unit 26A, harvest approximately 11% of their caribou from the CACH (**Table 7**, Parrett 2013).

Range overlap between the three caribou herds, frequent changes in the wintering distribution of the TCH and WACH, and annual variation in the community harvest survey effort and location make it difficult to determine the proportion of the TCH, WACH, and CACH in the harvest. Knowledge of caribou distribution at the time of the reported harvest is sometimes used to estimate the proportion of the harvest from each herd. A general overview of the relative utilization based on estimated harvest of each caribou herd by community for regulatory year 2010/11, is presented in **Table 8** (Parrett 2011, Dau 2011, and Lenart 2011). The percentage of caribou harvested from different herds by community has varied  $\leq 2\%$  for all communities between 2008/09, 2009/10, and 2010/11.

Harvest from the TCH is difficult to estimate because of very poor reporting, variation in community survey effort and location, widely varying wintering distribution of the TCH, and mixing of caribou herds. Most of the harvest occurs from July-October by local hunters in Unit 26A. Very low levels of TCH harvest occur in Units 23, 24, and 26B. Non-locals and non-residents account for less than 3% of the TCH harvest (Parrett 2013). Parrett (2013) estimated 3,387 TCH caribou were harvested in Unit 26A by local communities in each of 2010/11 and 2011/12 regulatory years and that previously reported harvest estimates (Parrett 2009) were biased high due to oversampling (**Table 8**). This estimated harvest is well above State objectives.

**Table 8.** Estimated caribou harvest of the Teshekpuk, Western Arctic and Central Arctic caribou herds during the 2010/2011 regulatory years in Unit 26A by federally qualified users (Parrett 2013, Dau 2013). Note: Due to the mixing of the herds, annual variation in the community harvest surveys and missing data, the percentages for each community do not add up to 100%.

Community	Human population <sup>a</sup>	Per capita caribou harvest <sup>bc</sup>	Approximate total community harvest	Estimated annual TCH harvest (%)	Estimated annual WACH harvest (%)	Estimated annual CACH harvest (%)
Anaktuvuk Pass	331	1.8	582	174 (30)	431 (80)	
Atqasuk	234	0.9	215	210 (98)	6 (2)	
Barrow	4,290	0.5	2,145	2,123 (97)	62 (3)	
Nuiqsut	411	1.1	468	403 (86)	3 (1)	36 (11)
Point Lay	191	1.3	247	49 (20)	120 (40)	
Point Hope	704		894	0	894 (100)	
Wainwright	559	1.3	710	426 (60)	48 (15)	
Total Harvest				3,387	1564	36

<sup>a</sup> Population estimates averaged from the 2010 U.S. Census and 2012 Alaska Department of Commerce, Division of Community and Regional Affairs data

<sup>b</sup> Citations associated with per-capita caribou harvest assessment by community can be found in Table 5 (Parrett 2011).

<sup>c</sup> Sutherland (2005)

## **Alternatives Considered**

### Modify to adjust harvest limits to reflect different harvest levels across the WACH range

Reducing the harvest to four caribou per year per permit holder throughout the range of the herd would impact some communities much more profoundly than others. For example, the Unit 24B community of Anaktuvuk Pass, where the estimated average number of caribou harvested yearly by successfully harvesting households is 16 (**Table 5**) (and where true “super households” may take and share more caribou per year), would face greater impacts than communities in Unit 22, where the baseline average estimated number of caribou taken by households that successfully harvest is 4.6, according to subsistence surveys (**Table 6**).

One alternative considered would reduce harvest limits by a consistent percentage (e.g. approximately 25%) of baseline harvest levels, as documented in past subsistence surveys for each community. Under this scenario, the harvest limit in Unit 22 could be set at three caribou per year, while the harvest limit in Unit 24B, remainder could be set at twelve caribou per year.

This alternative was rejected because it is likely untenable. Communities’ search and use areas are not neatly confined to single management units, and disparate harvest limits may motivate hunters to travel to adjacent units, altering patterns of use. Furthermore, subsistence survey data on caribou harvest are estimates only, and caution should be used when employing this information to adjust harvest limits on a fine scale.

If levels of past harvest, as documented in subsistence surveys, were to be used to reduce harvest levels by a consistent percentage for each community, this would be best carried out via community hunt systems or quotas and would entail additional analysis that is well beyond the scope of this proposal. Such an approach would entail working closely with communities to distribute and track permits. After the WACH declined to an estimated low of 75,000 in 1976, ADF&G set the harvest limit at one bull per year by registration permit and distributed a limited quota of permits among communities, an approach that was then incrementally liberalized in subsequent years (Davis et al. 1985).

### Modify to limit cow harvest only

Another alternative considered would maintain the current harvest limits, with the stipulation that only one of the caribou harvested per year per permit holder could be a cow. This alternative would allow “super households” more flexibility to provide for multiple people over the proposed reduction while still conserving cows, although overall harvest of the WACH may not be reduced. This would represent an incremental approach to conservation, with limits to bull harvest being an option for future implementation. However, the degree of WACH decline may warrant limits on harvest of both cows and bulls at this time.

Modify to reduce the harvest limit, but at a level higher than proposed

Yet another alternative considered would modify this proposal to reduce the current harvest limits, but at a more liberal level than the proposed limit of four caribou per year per permit holder. One option would be to set the individual hunter harvest limit at eight caribou per year, only one of which may be a cow. This alternative would allow some flexibility to super households while conserving cows. For example, a harvest limit of eight caribou per year per permit holder would be largely consistent with the average baseline harvest by households that successfully harvested caribou in communities within Units 23 and 26A and Anaktuvuk Pass combined, as documented in past subsistence surveys (see “Cultural Knowledge and Traditional Practices” section of this analysis). Households that harvest at high levels for the wider community and only have one permitted hunter, including households in Anaktuvuk Pass, would still face harvest reductions (although a designated hunter permit would offer a path for additional harvest). Households with two permit holders could harvest up to 16 caribou per year. This incremental approach would allow communities to adjust to reduced harvest limits in a more gradual manner. However, the degree of WACH decline may warrant greater reduction in harvest limits at this time.

Modify to exclude Units 21D, remainder and 24B, C, and D

As written, the proposal would include Units 21D, remainder, 24B, remainder, 24C, and 24D. As shown in the Cultural Knowledge and Traditional Practices section of this analysis, average baseline harvest by the communities located in these units occurs at levels below the recommended limit of four caribou per year, with the important exception of the Unit 24B community of Anaktuvuk Pass, which relies heavily on caribou. However, baseline harvest levels and search and use areas for all communities with customary and traditional use determinations for these units would need to be taken into account when considering excluding these units from reduced harvest limits (see the “Customary and Traditional Use Determinations” section of this analysis). Additionally, this alternative was rejected because although harvest levels are lower on the edges of the WACH range overall, caribou migration patterns fluctuate and during years when caribou are available, harvest may be higher.

Modify to exclude Unit 26A remainder

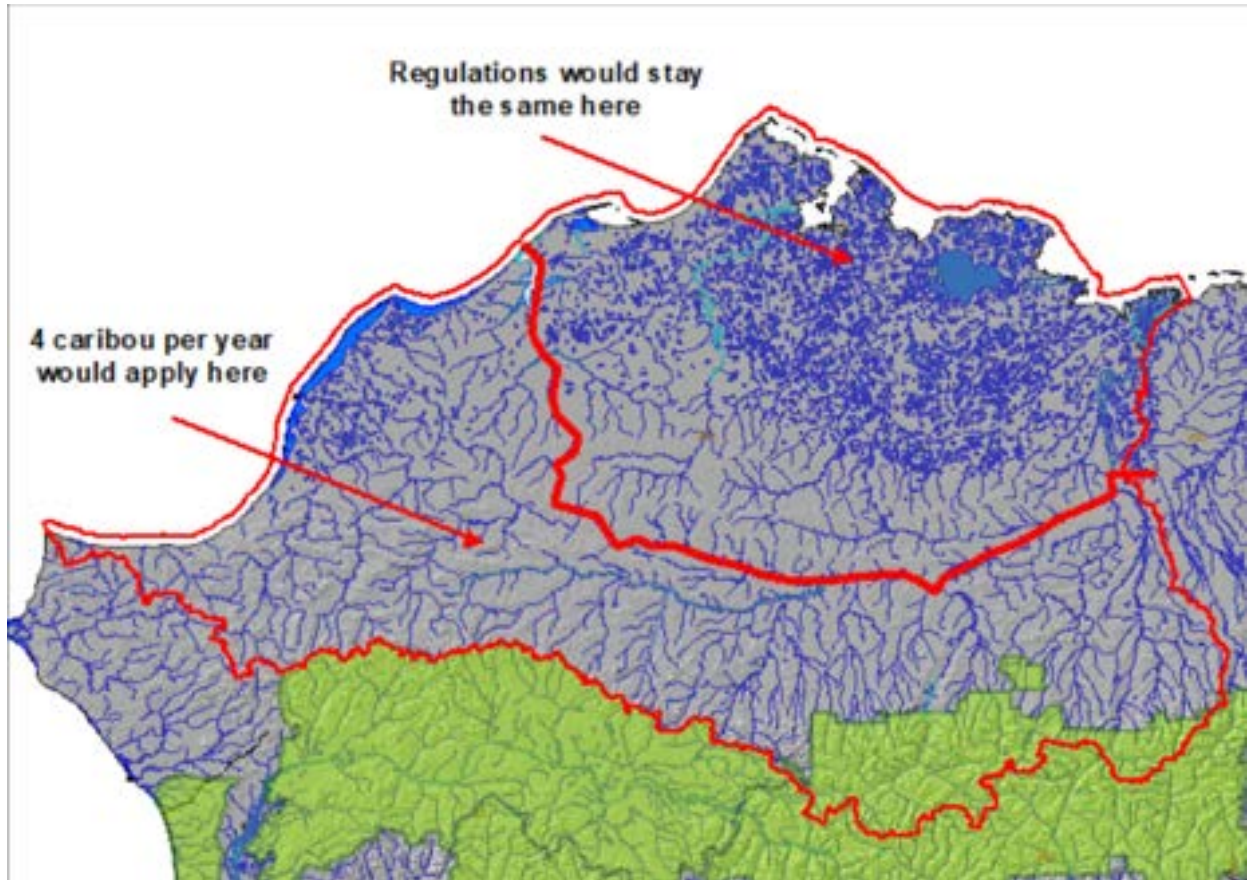
Another alternative to consider would be to exclude all of Unit 26A remainder from the hunt areas affected by the proposed harvest limit reductions. Adoption of WP24-28, as written, may cause unnecessary hardship and restrictions for subsistence users in the northeastern portions of Unit 26A that are primarily occupied by Teshekpuk (not Western Arctic) caribou. This alternative could reduce hardships and unnecessary restrictions for subsistence users in the portions of Unit 26A where caribou harvest is primarily from the TCH but it would not reduce WACH harvest in those areas.

Modify to exclude a portion of 26A remainder

Another similar alternative recommended by Selawik NWR and the Western Arctic National Parklands, would be to modify hunt area descriptors and to exclude that portion of Unit 26A north and east of a line running from the east/north bank of Wainwright Inlet to the headwaters of the Ketik River, to the headwaters of the Awuna River to the Colville River at Umiat then east to the Dalton Highway at Sagwon (**Map 4**). This alternative could reduce hardships and unnecessary restrictions for subsistence

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users in the portions of Unit 26A where caribou harvest is primarily from the TCH, as well as help conserve the WACH.



**Map 4.** Map of the portion of 26A remainder excluded for alternative recommended by Selawik NWR and the Western Arctic National Parklands.

## **Effects of the Proposal**

If WP24-29 is adopted, the Federal caribou harvest limit in Unit 23 would be reduced from five caribou per day to four caribou per year, only one of which may be a cow. If WP24-28 is adopted, the same harvest limit reduction would occur across the entire range of the WACH, including Units 22, 23, 26A, and portions of Units 21D and 24. The decreased harvest limits and more restrictive cow harvest would reduce subsistence hunting opportunity and harvest under Federal regulations, but could help conserve the WACH and aid in its recovery, which, in turn, could provide more subsistence hunting opportunity in the future. Additionally, intentional harvest reduction to conserve the resource aligns with local cultural practices and values.

However, if the BOG does not adopt similar regulations, all Alaska residents could still harvest 5 caribou/day under State regulations on most Federal public lands, which could greatly limit the impacts of adopting these requests on both the WACH and subsistence users. Federal regulations would also become more restrictive than State regulations. However, as only Federal regulations apply on National Park lands and National Monuments, harvest would likely decrease within Gates of the Arctic NP, Kobuk Valley NP, and Cape Krusenstern NM. Further, if adopted, the proposed closure of federal public lands in Unit 23 to caribou hunting by non-federally qualified users from Aug. 1-Oct. 31 (WP2430/31; see “Current Events”) would mean that State regulations would no longer apply on federal public lands in Unit 23 during this time, strengthening the effects of these proposed harvest limits within Unit 23.

In recent years, no collared WACH caribou have migrated into Units 22 or 21D, remainder. Therefore, any regulation changes in these units are unlikely to affect WACH harvest. However, caribou movements and distributions are highly variable, and it is possible portions of the WACH will go there in the future (Joly et al. 2021). A resident caribou herd may be present in Unit 22 (SPRAC 2021, 2022), and harvest limit reductions under Federal regulations would curtail harvest from these caribou (although users would still be able to harvest 5 caribou/day under State regulations) which would be an added benefit of the proposal as the small size (~5000, SPRAC 2021, 2022, NPS unpublished data) of this caribou group cannot support a 5 caribou/day bag limit. Additionally, the TCH and CACH occupies Unit 26A remainder and Unit 24B remainder. These herds have not experienced substantial population declines like the WACH. Therefore, reducing the harvest limits in Unit 26A remainder and Unit 24B remainder may not substantially affect WACH harvest or conservation and could unnecessarily restrict subsistence harvest from the TCH and CACH, although again, users would still be able to harvest 5 caribou/day under State regulations.

The reduced Federal harvest limits could also impact sharing networks, which are an important cultural component for subsistence users in these areas and contribute to food security. While four caribou per year may be enough for individuals and some families (NWARAC 2022), many families and elders depend on the “super households” (Wolfe 1987) to provide caribou meat. However, the use of designated hunter permits could dampen these effects and are intended to accommodate the cultural practice of harvesting for others. Designated hunter permits allow federally qualified subsistence users to hunt for others and allow designated hunters to possess two harvest limits at one time. However, it may take time for hunters to embrace the use of these permits.



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## OSM PRELIMINARY CONCLUSION

Support Proposal WP24-29.

Support Proposal WP24-28 **with modification** to exclude that portion of Unit 26A north and east of a line running from the east/north bank of Wainwright Inlet to the headwaters of the Ketik River, to the headwaters of the Awuna River to the Colville River at Umiat then east to the Dalton Highway at Sagwon.

The modified regulation should read:

### Proposed Federal Regulation

#### Unit 21D—Caribou

*Unit 21D, remainder— ~~5 caribou per day~~ **4 caribou per year, only 1 may be a cow**, as follows: Calves may not be taken.*

*Bulls may be harvested.*

*July 1-Oct. 14.  
Feb. 1-June 30.*

*Cows may be harvested.*

*Sep. 1-Mar. 31.*

#### Unit 22—Caribou

*Unit 22B that portion west of Golovnin Bay and west of a line along the west bank of the Fish and Niukluk Rivers to the mouth of the Libby River and excluding all portions of the Niukluk River drainage upstream from and including the Libby River drainage - ~~5 caribou per day~~ **4 caribou per year, only 1 may be a cow** by State registration permit. Calves may not be taken.*

*Oct. 1-Apr. 30.  
May 1-Sep. 30, a season may be announced.*

*Units 22A, that portion north of the Golsovia River drainage, 22B remainder, that portion of Unit 22D in the Kuzitrin River drainage (excluding the Pilgrim River drainage), and the Agiapuk River drainages, including the tributaries, and Unit 22E, that portion east of and including the Tin Creek drainage - ~~5 caribou per day~~ **4 caribou per year, only 1 may be a cow** by State registration permit. Calves may not be taken.*

*July 1-June 30.*

*Unit 22A, remainder - ~~5 caribou per day~~ **4 caribou per year, only 1 may be a cow** by State registration permit. Calves may not be taken*

*July 1-June 30, season may be announced.*

*Unit 22D, that portion in the Pilgrim River drainage - ~~5 caribou per day~~ **4 caribou per year, only 1 may be a cow** by State registration permit. Calves may not be taken*

*Oct. 1-Apr. 30.  
May 1-Sep. 30, season may be announced*

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Units 22C, 22D remainder, 22E remainder - ~~5 caribou per day~~ **4 caribou per year, only 1 may be a cow** by State registration permit. *Calves may not be taken* July 1-June 30, season may be announced

### Unit 23—Caribou

Unit 23—that portion which includes all drainages north and west of, and including, the Singoalik River drainage— ~~5 caribou per day~~ **4 caribou per year, only 1 may be a cow** by State registration permit as follows:

*Bulls may be harvested* July 1—June 30

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

Unit 23, remainder— ~~5 caribou per day~~ **4 caribou per year, only 1 may be a cow** by State registration permit as follows:

*Bulls may be harvested* July 1—June 30

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

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

*Bureau of Land Management managed lands between the Noatak and Kobuk Rivers and Noatak National Preserve are closed to caribou hunting from Aug. 1-Sep. 30 for the 2022-24 regulatory cycle, except by federally qualified subsistence users hunting under these regulations.*

### Unit 24—Caribou

Unit 24B remainder - ~~5 caribou per day~~ **4 caribou per year, only 1 may be a cow** as follows: *Calves may not be taken.*

**Unit 23—Caribou**

*Bulls may be harvested. July 1-Oct. 14.*

*Feb. 1-June 30.*

*Cows may be harvested. July 15-Apr. 30.*

*Units 24C, 24D - ~~5 caribou per day~~ **4 caribou per year, only 1 may be a cow** as follows: Calves may not be taken.*

*Bulls may be harvested. July 1-Oct. 14.*

*Feb. 1-June 30.*

*Cows may be harvested Sep. 1-Mar. 31.*

**Unit 26—Caribou**

*Unit 26A - north and east of a line running from the east/north bank of Wainwright Inlet to the headwaters of the Ketik River, to the headwaters of the Awuna River to the Colville River at Umiat then east to the Dalton Highway at Sagwon- 5 caribou per day by State registration permit as follows: Calves may not be taken.*

*Bulls may be harvested July 1-Oct. 14.*

*Dec. 6-June 30.*

*Cows may be harvested; however, cows accompanied by calves may not be taken July 16-Oct. 15.*

*Noatak National Preserve is closed to caribou hunting from Aug. 1-Sep. 30 for the 2022-24 regulatory cycle, except by federally qualified subsistence users hunting under these regulations.*

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*Unit 26A remainder - ~~5 caribou per day~~ **4 caribou per year, only 1 may be a cow** by State registration permit as follows: Calves may not be taken.*

*Bulls may be harvested*

*July 1-Oct. 15.*

*Dec. 6-June 30.*

*~~Up to 3 cows per day~~ **Only 1 cow** may be harvested; however, *July 16-Mar. 15.*  
*cows accompanied by calves may not be taken July 16-Oct. 15**

### **Justification**

OSM supports measures to reduce conservation concerns for the WACH. The lengthy and precipitous decline of the WACH warrants strong measures to aid in the recovery and conservation of this population. Current harvest rates, especially the taking of cows, could prolong or worsen the current decline, and hamper recovery efforts. Additionally, while causes of the decline are multi-faceted and uncertain, reducing human harvest is the most controllable factor.

Excluding the areas that primarily depend on other herds and caribou populations would help reduce the impact on sharing networks, which are an important cultural component for subsistence users in these areas and contribute to food security. The exclusion of that portion of Unit 26A north and east of a line running from the east/north bank of Wainwright Inlet to the headwaters of the Ketik River, to the headwaters of the Awuna River to the Colville River at Umiat then east to the Dalton Highway at Sagwon, would reduce the impact on the harvest on the TCH and CACH in 24B, remainder and a portion of Unit 26A. These herds are above State population objectives and are currently not of conservation concern.

## LITERATURE CITED

- 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. 2009. Summary of Alaska Board of Game Arctic/Western region meeting. Nome, AK. November 13-16, 2009. <http://www.adfg.alaska.gov/index.cfm?adfg=gameboard.meetinginfo&date=11-13-2009&meeting=arctic>. Retrieved: May 31, 2021.
- ADF&G. 2017a. Board of Game Arctic and Western Region Meeting Materials. January 6-9, 2017. Bethel, AK.
- ADF&G. 2017b. 2016-2017 draw supplement. [https://www.adfg.alaska.gov/static/license/huntlicense/pdfs/2016-2017\\_draw\\_supplement.pdf](https://www.adfg.alaska.gov/static/license/huntlicense/pdfs/2016-2017_draw_supplement.pdf). Retrieved: February 1, 2017.
- ADF&G 2017c. Region V caribou overview. Alaska Board of Game. Arctic and western region. Jan. 6-9, 2017. Bethel, AK. [http://www.adfg.alaska.gov/static/regulations/regprocess/gameboard/pdfs/2016-2017/aw/Tab\\_1.3\\_RegionV\\_Caribou\\_Overview.pdf](http://www.adfg.alaska.gov/static/regulations/regprocess/gameboard/pdfs/2016-2017/aw/Tab_1.3_RegionV_Caribou_Overview.pdf). Accessed January 20, 2017.
- Anderson, D. D. 1968. A stone age campsite at the gateway to America. *Scientific American* 218(6): 24–33.
- Anderson, D. D. 1988. Onion Portage: the archaeology of a stratified site from the Kobuk River, Northwest Alaska. *Anthropological papers of the University of Alaska*. 22 (1-2): 1-163.
- Atkinson, H. 2021. Anthropologist: Personal communication: email. Western Arctic National Parklands. National Park Service. Kotzebue, AK.
- Baltensperger, A.P. and K. Joly. 2019. Using seasonal landscape models to predict space use and migratory patterns of an arctic ungulate. *Movement ecology* 7(1): 1-19.
- Betchkal, D. 2015. Acoustic monitoring report, Noatak National Preserve – 2013 and 2014. National Park Service. <https://science.nature.nps.gov/im/units/cakn/vitalsign.cfm?vssid=71>. Retrieved: February 1, 2017.
- Brown, C. L., N. M. Braem, M. L Kostick et al. 2016. Harvests and uses of wild resources in 4 interior Alaska communities and 3 arctic Alaska communities, 2014. ADF&G, Div. of Subsistence Tech. Paper No. 426. Fairbanks, AK.
- Brown, C.L., R. Walker, S.B. Vanek. 2004. The 2002-2003 Harvest of Moose, caribou, and Bear in Middle Yukon and Koyukuk River Communities. Alaska Department of the Fish and Game, Division of the Subsistence Technical Paper No 280, ADF&G, Juneau, AK.
- Burch, Jr., E.S. 1972. The caribou/wild reindeer as a human resource. *American Antiquity* 37(3): 339–68.
- 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 Park Service, Alaska Region. Anchorage, AK.
- Burch, E.S. 1998. The Inupiaq Eskimo nations of Northwest Alaska. University of Alaska Press. Fairbanks, AK.

*WP24-28/29 - Units 21D, 22, 23, 24, and 26A, Reduce harvest limit to four caribou per year only one of which may be a cow*

Burch Jr, E.S. 2012. Caribou herds of northwest Alaska, 1850-2000. University of Alaska Press. Fairbanks, AK.

Buvit, I, Rasic, JT, Kuehn, SR, Hedman. 2019. WH. Fluted projectile points in a stratified context at the Raven Bluff site document a late arrival of Paleoindian technology in northwest Alaska. *Geoarchaeology*. 34: 3– 14.

Cameron, M.D, J.M., Eisaguirre, G.A., Breed, J., Joly, and K., Kielland. 2021. Mechanistic movement models identify continuously updated autumn migration cues in Arctic caribou. *Movement Ecology* 9(54). 1-12

Cameron, M.D., K. Joly, G.A. Breed, C.P.H Mulder, and K. Kielland. 2020. Pronounced Fidelity and Selection for Average Conditions of Calving Area Suggestive of Spatial Memory in a Highly Migratory Ungulate. *Front. Ecol. Evol.* 8:564567. doi: 10.3389/fevo.2020.564567.

Cameron, M. D., K. Joly, G. A. Breed, L. S. Parrett, and K. Kielland. 2018. Movement-based methods to infer parturition events in migratory ungulates. *Canadian Journal of Zoology* 96: 1187-1195. DOI: 10.1139/cjz-2017-0314.

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.

Cold, H. 2021. Alaska Department of Fish and Game Subsistence Division: review of arctic areas Subsistence Division projects. Presentation to the Northwest Arctic Regional Advisory Council, November 1-2.

CSIS. 2023. Community Subsistence Information System. <http://www.adfg.alaska.gov/sb/CSIS/>. Retrieved June 9, 2023.

Daggett, C. 2023. Wildlife Biologist. Personal communication: e-mail. ADF&G. Utqiagvik, 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 (WACH) Working Group Meeting, December 17-18, 2014. Anchorage, Alaska. ADF&G. Nome, AK.

Dau, J. 2015. 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, eds. Caribou management report of survey and inventory activities 1 July 2012–30 June 2014. ADF&G, Species Management Report ADF&G/DWC/SMR-2015-4, Juneau, 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.

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.

WP24-28/29 - Units 21D, 22, 23, 24, and 26A, Reduce harvest limit to four caribou per year only one of which may be a cow

Davis, J. L., C. A. Grauvogel, and P. Valkenburg. 1985. Changes in subsistence harvest of Alaska's Western Arctic caribou herd, 1940–1984. Pages 105–118 in T. C. Meredith, and A. M. Martell, eds. Caribou management: census techniques, status in eastern Canada: Proceedings of the 2nd North American Caribou Workshop, 17-20 October 1984, Van Morin, Quebec. McGill Subarctic Research Paper no. 40, Center for Northern Studies and Research, Schefferville, Quebec, Canada.

Fix, P.J. and A. Ackerman. 2015. Noatak National Preserve sport hunter survey: caribou hunters from 2010-2013. Natural resources report. National Park Service.

Fullman, T.J., K. Joly, A. Ackerman. 2017. Effects of environmental features and sport hunting on caribou migration in Northwest Alaska. *Movement Ecology* 5: 1-11.

Georgette, S., and H. Loon. 1993. Subsistence use of fish and wildlife in Kotzebue, a Northwest Alaska regional center. ADF&G, Div. of Subsistence Tech. Paper No. 167. Fairbanks, AK.

Gonzalez, D., E. H. Mikow, and M. L Kostick. 2018. Subsistence wildlife harvests in Buckland, Koyuk, and Noatak, Alaska 2016-2017. ADF&G, Div. of Subsistence Special Publication SP2018-05. Fairbanks, AK.

Gunn, A. 2003. Voles, lemmings and caribou – population cycles revisited? *Rangifer*, Special Issue 14: 105-111.

Gurarie, E., P.R. Thompson, A.P. Kelly, N.C. Larter, W.F. Fagan, and K. Joly. 2020. For everything there is a season: estimating periodic hazard functions with the cyclomort R package. *Methods in Ecology and Evolution* 11 (1): 129-138. DOI: 10.1111/2041-210X.13305.

Halas, G. 2015. Caribou migration, subsistence hunting, and user group conflicts in Northwest Alaska: A traditional knowledge perspective. University of Fairbanks-Alaska. Fairbanks, AK.

Hansen, D.A. 2019a. 2019 Western Arctic Caribou Herd – herd population status, other metrics. Presentation to Western Arctic Caribou Herd Working Group Technical Committee. December 10, 2019. <https://westernarcticcaribou.net/>.

Hansen, D.A. 2020. Wildlife Biologist. Personal communication: e-mail. ADF&G. Kotzebue, AK.

Hansen, D.A. 2021a. Wildlife Biologist. Personal communication: e-mail. ADF&G. Kotzebue, AK.

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.

Joly, K. 2015. Wildlife Biologist, Gates of the Arctic National Park and Preserve. Personal communication: e-mail NPS. Fairbanks, 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., and M. D. Cameron. 2018. Early fall and late winter diets of migratory caribou in northwest Alaska. *Rangifer* 38 (1): 27-38. DOI: 10.7557/2.38.1.4107.

Joly, K., and M.D. Cameron. 2020. Caribou vital sign annual report for the Arctic Network Inventory and Monitoring Program, September 2019-August 2020. Natural resource report. National Park Service.

WP24-28/29 - Units 21D, 22, 23, 24, and 26A, Reduce harvest limit to four caribou per year only one of which may be a cow

Joly, K., and M.D. Cameron. 2021. Caribou vital sign annual report for the Arctic Network Inventory and Monitoring Program, September 2019-August 2020. Natural resource report. National Park Service.

Joly, K., E. Gurarie, D.A. Hansen, M.D. Cameron. 2021. Seasonal patterns of spatial fidelity and temporal consistency in the distribution and movements of a migratory ungulate. *Ecology and Evolution*. 2021;11:8183–8200.

Joly, K., A. Gunn, S. D. Côté, M. Panzacchi, J. Adamczewski, M. J. Sutor, and E. Gurarie. 2021b. Caribou and reindeer migrations in the changing Arctic. *Animal Migrations* 8: 156-167. DOI: 10.1515/ami-2020-0110.

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., D.R. Klein, D.L. Verbyla, T.S. Rupp, and F.S. Chapin, III. 2011. Linkages between large-scale climate patterns and the dynamics of Arctic caribou populations. *Ecography* 34: 345-352.

Lenart, E. A. 2011. Units 26B and 26C caribou. Pages 315-345 in P. Harper, ed. Caribou management report of survey and inventory activities 1 July 2008–30 June 2010. ADF&G. Project 3.0. Juneau, AK.

Magdanz, J., E. Trigg, A. Ahmasuk, P. Nanouk, D. Koster, and K. Kamletz. 2005. Patterns and trends in subsistence salmon harvests Norton Sound and Port Clarence, 1994-2003. ADF&G, Div. of Subsistence Tech Paper No. 294. Juneau, AK. 134 pp.

Mikow, E.H., N. M. Braem, and M. Kostick. 2014. Subsistence Wildlife Harvests in Brevig Mission, Deering, Noatak, and Teller, Alaska, 2011-2012. ADF&G, Div. of Subsistence Special Publication No. 2014-02. Fairbanks, AK.

Mikow, E.H., and M.L. Kostick. 2016. Subsistence wildlife harvests in Kotzebue, Alaska, 2013-2014. ADF&G, Div. of Subsistence Special Publication No. 2016-02. Fairbanks, AK.

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.

Nicholson, K.L., S.M. Arthur, J.S. Horne, E.O. Garton, and P.A. Del Vecchio. 2016. Modeling caribou movements: seasonal ranges and migration routes of the Central Arctic Herd. *PLoS ONE* 11(4): e0150333. <https://doi.org/10.1371/journal.pone.0150333>.

NPS. 2020. Commercial use authorization stipulations: 2020 park specific regulations—Western Arctic Parklands. <https://www.nps.gov/locations/alaska/stips-wear.htm>. Retrieved April 2, 2021.

NWARAC. 2016. Transcripts of the Northwest Arctic Subsistence Regional Advisory Council proceedings, October 5-6, 2016 in Selawik, AK. Office of Subsistence Management, USFWS. Anchorage, AK.

NWARAC. 2019. Transcripts of the Northwest Arctic Subsistence Regional Advisory Council proceedings, April 9-10, 2019 in Kotzebue, AK. Office of Subsistence Management, USFWS. Anchorage, AK.

NWARAC. 2020. Transcripts of the Northwest Arctic Subsistence Regional Advisory Council proceedings, November 3, 2020. Teleconference. Office of Subsistence Management, USFWS. Anchorage, AK.



*WP24-28/29 - Units 21D, 22, 23, 24, and 26A, Reduce harvest limit to four caribou per year only one of which may be a cow*

NWARAC. 2021a. Transcripts of the Northwest Arctic Subsistence Regional Advisory Council proceedings, February 18, 2021. Teleconference. Office of Subsistence Management, USFWS. Anchorage, AK.

NWARAC 2021b. Transcripts of the Northwest Arctic Subsistence Regional Advisory Council proceedings, November 1 and 2, 2021. Teleconference. Office of Subsistence Management, USFWS. Anchorage, AK.

NWARAC. 2022. Transcripts of the Northwest Arctic Subsistence Regional Advisory Council proceedings, October 31 and November 1, 2022 in Kotzebue, AK. Office of Subsistence Management, USFWS. Anchorage, AK.

NWARAC 2023. Transcripts of the Northwest Arctic Subsistence Regional Advisory Council proceedings, March 7-8, 2023.

Parrett, L.S. 2011. Units 26A, Teshekpuk caribou herd. Pages 283-314 *in* P. Harper, ed. Caribou management report of survey and inventory activities 1 July 2008–30 June 2010. ADF&G. Project 3.0. Juneau, AK.

Parrett, L.S. 2015b. 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.

Parrett, L.S., 2015c. Unit 26A, Teshekpuk caribou herd. Chapter 17, pages 17-1 through 17-28 *in* P. Harper and L.A. McCarthy, eds. Caribou management report of survey and inventory activities 1 July 2012-30 June 2014. ADF&G, Species Management Report ADF&G /DWC?SMR-2015-4, Juneau, AK.

Parrett, L.S. 2015d. Memorandum to P. Bente, Management Coordinator, dated December 31, 2015. Summary of Teshekpuk Caribou Herd photocensus conducted July 6, 2015. ADF&G Division of Wildlife Conservation. Fairbanks, AK.

Parrett, L.S. 2016. 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.

Parrett, L.S. 2017a. WAH Caribou Overview. Western Arctic Caribou Herd Working Group Meeting. December 2017. <https://westernarcticcaribounet.files.wordpress.com/2017/12/2017-complete-wg-meeting-binder-dec-13-14-2017-for-webpost.pdf>. Retrieved December 20, 2017.

Parrett, L.S. 2017b. Wildlife Biologist IV. Personal communication: phone and e-mail. ADF&G. Fairbanks, AK.

Parrett, L. S. 2021. Teshekpuk caribou herd management report and plan, Game Management Units 23, 24, and 26: Report period 1 July 2012–30 June 2017, and plan period 1 July 2017–30 June 2022. Alaska Department of Fish and Game, Species Management Report and Plan ADF&G/DWC/SMR&P-2021-43, Juneau, AK.

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

Prichard, A.K., K. Joly and J. Dau. 2012. Quantifying telemetry collar bias when age is unknown: a simulation study with a long-lived ungulate. *Journal of Wildlife Management* 76 (7): 1441-1449. DOI: 10.1002/jwmg.394.

Prichard, A.K, L.S. Parrett, E.A. Lenart, J.R. Caikoski, K. Joly, B.T. Person. 2020. Interchange and overlap among four adjacent arctic caribou herd. *Journal of Wildlife Management* 84 (8): 1500-1514. DOI: 10.1002/jwmg.21934.

WP24-28/29 - Units 21D, 22, 23, 24, and 26A, Reduce harvest limit to four caribou per year only one of which may be a cow

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.

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.

Satterthwaite-Phillips, D.A., C. Krenz, G. Gray, and L. Dodd. 2016. Chapter 3: Age, gender, and village variation in subsistence. Pages 394-412 in: *Iñuuniaḷ iḡput ilīḷḡu nunanḡuanun (Documenting our way of life with maps): Northwest Arctic Borough subsistence mapping project*.

SPRAC 2021. Transcripts of the Seward Peninsula Subsistence Regional Advisory Council proceedings, October 26, 2021.

SPRAC 2022. Transcripts of the Seward Peninsula Subsistence Regional Advisory Council proceedings, October 4, 2022.

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. May 4-6, 2004. *Rangifer* special issue 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.

USFWS. 2014. FY2014 annual report reply to the Norwest Arctic Subsistence Regional Advisory Council. Office of Subsistence Management, USFWS. Anchorage, AK.

WACH (Western Arctic Caribou Herd) Working Group. 2011. Western Arctic Caribou Herd Cooperative Management Plan – Revised December 2011. Nome, AK.

WACH (Western Arctic Caribou Herd) Working Group. 2015. Western Arctic Caribou Herd Cooperative Management Plan. Table 1 Revision – Dec. 2015. <https://westernarcticcaribou.net/herd-management/>. Accessed June 1, 2017.

WACH (Western Arctic Caribou Herd) Working Group. 2019a. Western Arctic Caribou Herd Working Group Meeting. December 10-12, 2019. Anchorage, AK.

WACH (Western Arctic Caribou Herd) Working Group. 2019b. Western Arctic Caribou Herd Cooperative Management. December 2019. <https://westernarcticcaribou.net/herd-management/>. Accessed March 31, 2023.

WACH (Western Arctic Caribou Herd) Working Group. 2020. Western Arctic Caribou Herd Working Group Meeting December 9, 2020. Teleconference.

WACH (Western Arctic Caribou Herd) Working Group. 2021. Western Arctic Caribou Herd Working Group Meeting December 16, 2021. Teleconference.

WACH (Western Arctic Caribou Herd) Working Group. 2022. Western Arctic Caribou Herd Working Group Meeting December 14-15, 2022. Anchorage, AK.

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(2016):2-8.

*WP24-28/29 - Units 21D, 22, 23, 24, and 26A, Reduce harvest limit to four caribou per year only one of which may be a cow*

WINFONET. 2018. Wildlife information network. ADF&G. Anchorage, AK. <https://winfonet.alaska.gov/>. Retrieved: November 2018.

WINFONET. 2019. Wildlife information network. ADF&G. Anchorage, AK. <https://winfonet.alaska.gov/>. Retrieved: July 2019.

Wolfe, R. J. 1987. The Super-Household: Specialization in Subsistence Economies, Paper presented at the 14th Annual Meeting of the Alaska Anthropological Association, March 12-13, 1987, Anchorage, Alaska.

Wolfe, Robert J., Cheryl L. Scott, William E. Simeone, Charles J. Utermohle, and Mary C. Pete. 2010. "The 'super-household' in Alaska Native subsistence economies." Final report to the National Science Foundation, project ARC 0352611.

## **Appendix 1**

### **Regulatory History**

In 2013, an aerial photo census indicated significant declines in the TCH (Caribou Trails 2014), WACH (Dau 2011), and possibly the Central Arctic Caribou Herd (CACH) populations. In response, the Alaska Board of Game (BOG) adopted modified Proposal 202 (RC76) in March 2015 to reduce harvest opportunities for both residents and nonresidents within the range of the WACH and the TCH. These regulation changes – which included lowering bag limits, changing harvest seasons, modifying the hunt area descriptors, and restricting bull and cow harvest and prohibiting calf harvest – were adopted to slow or reverse the population decline. These regulatory changes took effect on July 1, 2015.

Four Special Actions, WSA15-03/04/05/06, submitted by the North Slope Regional Subsistence Advisory Council (North Slope Council) requested changes to caribou regulations in Units 23, 24, and 26. Temporary Special Action WSA15-03, requested designation of a new hunt area for caribou in Unit 23 where the harvest limit would be reduced from 15 caribou per day to 5 caribou per day, the harvest season be reduced for bulls and cows, and the take of calves would be prohibited. Temporary Special Action WSA15-04 requested designation of a new hunt area for caribou in Unit 24, the harvest seasons be reduced for bulls and cows, and the take of calves be prohibited.

Temporary Special Action WSA15-05 requested that bull caribou harvest limit in Unit 26A be reduced from 10 caribou per day to 5 caribou per day, the cow harvest limit be reduced to 3 per day, the harvest seasons for bulls and cows be reduced, and the take of calves and cows with calves be prohibited. Compared to the new State caribou regulations, it requested 3 additional weeks to the bull harvest season (Dec. 6- Dec. 31). Temporary Special Action WSA15-06 requested designation of a new hunt area for caribou in Unit 26B where the harvest limit would be reduced from 10 caribou per day to 5 caribou per day, the harvest season would be shortened, and the take of calves would be prohibited.

The Federal Subsistence Board (Board) approved Temporary Special Actions WSA15-03/04/05/06 with modification to simplify and clarify the regulatory language; maintain the current hunt areas in Units 23 and 24; decrease the harvest limit from 15 to 5 caribou per day and shorten the cow and bull seasons throughout Unit 23; prohibit the harvest of cows with calves throughout the affected units; and reduce the harvest limit in Unit 26B remainder from 10 to 5 caribou per day and shorten the season. These special actions took effect on July 1, 2015.

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

In 2016, six proposals (WP16-37, WP16-48, WP16-49/52, WP16-61, and WP16-63) concerning WACH caribou regulations were submitted to the Board. The Board adopted WP16-48 with modification to allow

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

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

These State and Federal regulatory changes were the first time that harvest restrictions had been implemented for the WACH and TCH in over 30 years and were the result of extensive discussion and compromise among a variety of stakeholders. The requested restrictions were also supported by management recommendations outlined in the Western Arctic Herd Management Plan (WACH Working Group 2011).

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

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

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

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modification a reasonable compromise for all users, and that closure of the specified area was warranted in order to continue subsistence use. The Board rejected WSA17-04 due to recent changes to State regulations that should reduce caribou harvest.

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

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

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

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

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

In March 2022, the Board approved WSA21-01a (for caribou; WSA21-01b applied to moose) with modification to close Noatak National Preserve (including the Nigu River portion of the Preserve in Unit 26A) and BLM managed lands between the Noatak and Kobuk rivers in Unit 23 to caribou hunting by

non-federally qualified users from August 1 through September 30 during the 2022-2023 and 2023-2024 regulatory years. The Board stated this modification was a reasonable compromise that provides for the continuation of subsistence uses and the conservation of the Western Arctic Caribou Herd, while precluding unnecessary restrictions on non-federally qualified users. The partial closure targets the areas of highest user conflicts and minimizes potential disruptions to caribou migration. The Board also expressed concern over the 24% WACH population decline over the past two years, which prompted the WACH Working Group to change the herd's management level to preservative declining.

In April 2022, the Board rejected Proposal WP22-47, which requested that caribou calf harvest be permitted in Unit 22 because four members of the Board felt this would supply new opportunity for federally qualified subsistence users and would align Federal and State regulations. The remaining four Board members opposed the proposal and felt with the herd in decline that it would be unwise to allow the harvest of caribou calves.

In June 2023, the Board voted to reject Wildlife Special Action requests WSA22-05 and WSA22-06. The Board stated that an immediate reduction to four caribou per year would be detrimental to subsistence needs. The Board acknowledged the need to focus on caribou conservation and that reductions in harvest limits may be needed in the future. Additionally, the Board suggested a more robust discussion of potential alternatives to the harvest reductions is essential. The Board stated that the Federal regulatory proposal process is the more appropriate avenue to allow an analysis to be written and reviewed by the public, all of the affected Councils, and our Federal and State agency partners in the range of the Western Arctic Caribou Herd, resulting in formal recommendations.

### Controlled Use Areas

#### *Noatak Controlled Use Area*

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

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

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Controlled Use Area to start at the mouth of the Agashashok River and end at the mouth of the Nimiuktuk River with approximately 105 miles within Noatak NP (**Map 5**, ADF&G 2017a).

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

In 2008, Proposals WP08-50 and 51 requested modifications to the Noatak Controlled Use Area dates. These proposals were submitted in response to caribou migration occurring later in the season, to improve caribou harvest for subsistence users, and to decrease conflicts between local and nonlocal hunters. The Board deferred these proposals to the next regulatory cycle. In 2010, Proposals WP10-82, 83, and 85 requested similar date changes. The Board adopted WP10-85 to expand the time period during which aircraft are restricted in the Noatak Controlled Use Area to August 15-September 30, which aligned with the current State regulations.

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

In 2011, Selawik National Wildlife Refuge (NWR) designated refuge lands in the northwest portion of the refuge as closed to big game hunting by commercial guides and transporters through their comprehensive conservation plan (USFWS 2011, 2014). These refuge lands are intermingled with private lands near the villages of Noorvik and Selawik (**Map 3**). The purpose of this closure was to minimize trespass on private lands and to reduce user conflicts (USFWS 2011).

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

#### *Noatak National Preserve Delayed Entry Controlled Use Area*

In 2012, the NPS established a Special Commercial Use Area or “delayed entry zone” in the western portion of the Noatak NP (Halas 2015, Fix and Ackerman 2015). Within this zone, transporters can only transport nonlocal caribou hunters after a pre-determined date unless otherwise specified by the Western Arctic Parklands (WEAR) Superintendent in consultation with commercial operators, other agencies and local villages (Halas 2015). In 2020, the delayed entry end date was changed from September 15 to September 22 (NPS 2020) in response to requests from the Cape Krusenstern National Monument and Kobuk Valley National Park SRCs and the Native Village of Noatak (Atkinson 2021, pers. comm.). The purpose of this zone is to allow a sufficient number of caribou to cross the Noatak River and establish migration routes, to limit interactions between local and nonlocal hunters, and to allow local hunters the first opportunity to harvest caribou in that area (**Map 5**, USFWS 2014; Halas 2015).



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#### *Aircraft in National Parks and Monuments*

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

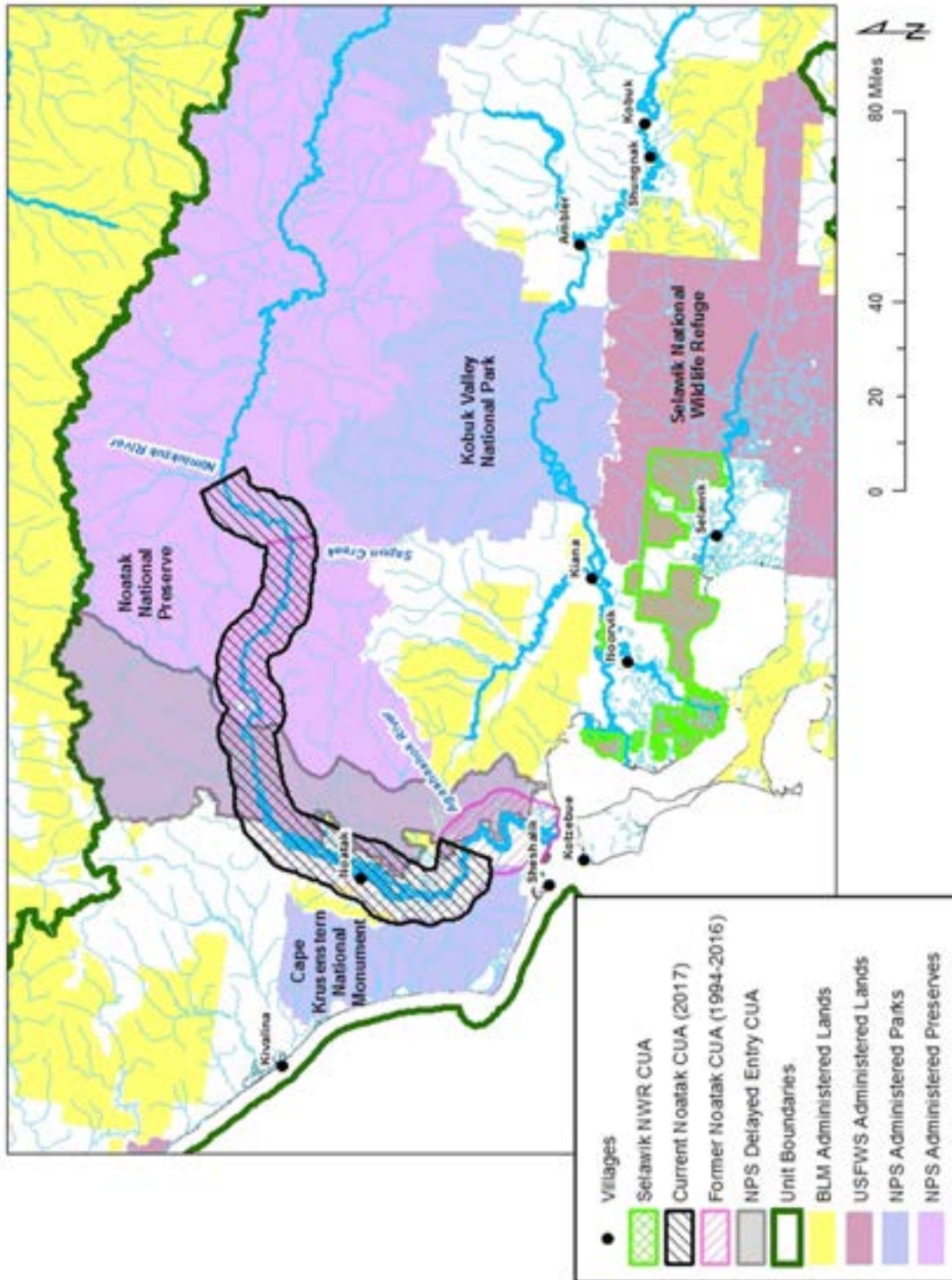
#### *Anaktuvuk Pass Controlled Use Area*

That portion of Unit 26A bounded by a line beginning at 153° 30' W. long. on the game management boundary between Units 24 and 26A, north along 153° 30' W. long. to 69° N. lat., east along 69° N. lat. to 152° 10' W. long., south along 152° 10' W. long. to 68° 30' N. lat., east along 68° 30' N. lat. to 150° 40' W. long., south along 150° 40' W. long. to the game management boundary between Units 24 and 26A, and westerly along the game management unit boundary to the point of origin at 153° 30' W. long. From Aug 15 - Oct 15, the area is closed to the use of aircraft for caribou hunting, including transportation of caribou hunters, their hunting gear, and/or parts of caribou. However, this does not apply to transportation of caribou hunters, their gear, or caribou parts by aircraft between publicly owned airports in the controlled use area

#### *Dalton Highway Corridor Management Area (DHCMA)*

Units 20 and 24-26 extending five miles from each side of the Dalton Highway, including the drivable surface of the Dalton Highway, from the Yukon River to the Arctic Ocean, and including the Prudhoe Bay Closed Area. The area within the Prudhoe Bay Closed Area is closed to the taking of big game; the remainder of the DHCMA is closed to hunting; however, big game, small game, and fur animals may be taken in the area by bow and arrow only, and small game may be taken by falconry. Any hunter traveling on the Dalton Highway must stop at any check station operated by the department within the DHCMA.

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Map 5. Federal and State controlled use areas in Unit 23.

## Appendix 2

For survey years in which the sex of harvested caribou was documented, this table shows the percentage of male, female, and sex unknown caribou harvested in Unit 23 (CSIS 2023).

Community	Year	Estimated total number of caribou harvested	% Male	% Female	% Unknown
Ambler	2009	455	76%	24%	0%
	2012	685	69%	28%	2%
Buckland	2009	535	39%	35%	26%
	2016	693	56%	38%	6%
	2018	949	31%	48%	22%
Deering	2007	182	27%	31%	42%
	2013	404	19%	44%	38%
	2017	342	51%	44%	5%
Kiana	1999	487	84%	10%	6%
	2009	414	87%	5%	8%
Kivalina	2007	268	57%	37%	5%
	1964	256	50%	29%	21%
	1965	1010	28%	30%	42%
	1982	346	41%	47%	12%
	1983	564	29%	55%	15%
Kobuk	2004	134	76%	24%	0%
	2009	210	78%	17%	5%
	2012	119	73%	19%	8%
Kotzebue	2012	1804	61%	20%	20%
	2013	1680	76%	20%	4%
	2014	1286	75%	17%	8%
Noatak	1999	683	66%	30%	4%
	2002	410	88%	12%	0%
	2007	442	73%	23%	4%
	2016	337	64%	34%	2%
Noorvik	2002	987	71%	23%	6%
	2008	767	73%	15%	12%
	2012	851	64%	24%	12%
	2017	250	41%	56%	3%
Point Hope	2014	185	62%	24%	14%
Selawik	1999	1289	62%	37%	1%
	2006	933	73%	26%	1%
	2011	683	60%	39%	1%
Shungnak	1998	561	50%	49%	1%

WP24-28/29 - Units 21D, 22, 23, 24, and 26A, Reduce harvest limit to four caribou per year only one of which may be a cow

Community	Year	Estimated total number of caribou harvested	% Male	% Female	% Unknown
	2008	407	43%	50%	7%
	2012	395	71%	27%	2%
<b>Average</b>		611	<b>60%</b>	<b>30%</b>	<b>10%</b>

For survey years in which the sex of harvested caribou was documented, this table shows the percentage of male, female, and sex unknown caribou harvested in Unit 26A and Anaktuvuk Pass (CSIS 2023). No data on the sex of harvested caribou is available for Wainwright.

Community	Year	Estimated total number of caribou harvested	% Male	% Female	% Unknown
Anaktuvuk Pass	2014	770	51%	39%	10%
	2011	616	57%	43%	0%
	2006	695	68%	32%	0%
	1993	574	55%	45%	0%
	1991	545	77%	23%	0%
	1990	591	55%	43%	2%
Atqasuk	2006	170	96%	4%	0%
	2005	202	84%	15%	1%
	2004	313	79%	17%	4%
	2003	189	79%	17%	4%
Kaktovik	1994	79	77%	23%	0%
	1992	159	69%	29%	3%
	1991	181	73%	24%	2%
	1990	114	52%	37%	11%
	1987	186	64%	33%	3%
	1986	178	59%	35%	6%
	1985	235	53%	33%	14%
Nuiqsut	2014	774	73%	21%	6%
	2006	363	93%	5%	3%
	2005	436	96%	4%	0%
	2004	429	83%	11%	6%
	2003	293	87%	7%	5%
	1994	258	73%	13%	14%
	1993	672	71%	22%	7%
Point Lay	2012	356	57%	42%	1%
Utqiagvik	2014	4323	46%	29%	25%

WP24-28/29 - Units 21D, 22, 23, 24, and 26A, Reduce harvest limit to four caribou per year only one of which may be a cow

<b>Community</b>	<b>Year</b>	<b>Estimated total number of caribou harvested</b>	<b>% Male</b>	<b>% Female</b>	<b>% Unknown</b>
<b>Average</b>		527	70%	25%	5%

<b>WP24-01 Executive Summary</b>	
<b>General Description</b>	Proposal WP24-01 is a request to allow the sale of brown bear hides. <i>Submitted by: Kaleb Rowland</i>
<b>Proposed Regulation</b>	<p><b>§___.25 Subsistence taking of fish, wildlife, and shellfish: general regulations</b></p> <p><i>(j) Utilization of fish, wildlife, or shellfish</i></p> <p>...</p> <p><i>(13) You may sell the raw/untanned and tanned hide or cape from a legally harvested <b>brown bear</b>, caribou, deer, elk, goat, moose, musk ox, and sheep.</i></p>
<b>OSM Preliminary Conclusion</b>	<p><b>Support</b> Proposal WP24-01 <b>with modification</b> to allow the sale of brown bear hides with claws attached in areas where the Federal harvest limit is two bears every regulatory year and after first obtaining a permit available at the time of sealing from an ADF&amp;G sealing officer.</p> <p>The modified regulation should read:</p> <p><b>§___.25 Subsistence taking of fish, wildlife, and shellfish: general regulations</b></p> <p><i>(j) Utilization of fish, wildlife, or shellfish</i></p> <p>...</p> <p><i>(13) You may sell the raw/untanned and tanned hide or cape from a legally harvested caribou, deer, elk, goat, moose, musk ox, sheep, and brown bear with claws attached harvested in an area with a two brown bear limit per regulatory year in Federal regulations only after first obtaining a permit at the time of sealing from the Alaska Department of Fish and Game.</i></p>
<b>Southeast Alaska Subsistence Regional Advisory Council Recommendation</b>	
<b>Southcentral Alaska Subsistence Regional Advisory Council Recommendation</b>	

<b>WP24-01 Executive Summary</b>	
<b>Kodiak/Aleutians Subsistence Regional Advisory Council Recommendation</b>	
<b>Bristol Bay Subsistence Regional Advisory Council Recommendation</b>	
<b>Yukon-Kuskokwim Delta Subsistence Regional Advisory Council Recommendation</b>	
<b>Western Interior Alaska Subsistence Regional Advisory Council Recommendation</b>	
<b>Seward Peninsula Subsistence Regional Advisory Council Recommendation</b>	
<b>Northwest Arctic Subsistence Regional Advisory Council Recommendation</b>	
<b>Eastern Interior Alaska Subsistence Regional Advisory Council Recommendation</b>	
<b>North Slope Subsistence Regional Advisory Council Recommendation</b>	
<b>Interagency Staff Committee Comments</b>	
<b>ADF&amp;G Comments</b>	

<b>WP24-01 Executive Summary</b>	
<b>Written Public Comments</b>	<b>None</b>



**DRAFT STAFF ANALYSIS  
WP24-01**

**ISSUE**

Proposal WP24-01, submitted by Kaleb Rowland of McCarthy, Alaska, is a request to allow the sale of brown bear hides.

**DISCUSSION**

The proponent states federally qualified subsistence users in many areas of Alaska must salvage the hides of brown bears, however, the hides must not be sold. The proponent continues that the hides of many other legally harvested big game species may be sold, and brown bears should be added to this regulation.

**Existing Federal Regulation**

**§ \_\_.25 Subsistence taking of fish, wildlife, and shellfish: general regulations<sup>1</sup>**

*(j) Utilization of fish, wildlife, or shellfish*

...

*(13) You may sell the raw/untanned and tanned hide or cape from a legally harvested caribou, deer, elk, goat, moose, musk ox, and sheep.*

**Proposed Federal Regulation**

**§ \_\_.25 Subsistence taking of fish, wildlife, and shellfish: general regulations**

*(j) Utilization of fish, wildlife, or shellfish*

...

*(13) You may sell the raw/untanned and tanned hide or cape from a legally harvested **brown bear**, caribou, deer, elk, goat, moose, musk ox, and sheep.*

**Existing State Regulation**

**5 AAC 92.200—Purchase and sale of game**

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<sup>1</sup> Sections of the regulatory booklet produced for the public that describe legal utilization of brown bears are incorrect. The Code of Federal Regulations regarding the utilization of brown bears are correctly reflected in the **Appendix**.

...

*(b) Except as provided in 5 AAC 92.031, a person may not purchase, sell, advertise, or otherwise offer for sale:*

*(1) any part of a brown bear, except an article of handicraft made from the fur of a brown bear, and except skulls and hides with claws attached of brown bears harvested in areas where the bag limit is two bears per regulatory year\* by permit issued under 5 AAC 92.031;*

**\*Note:** The harvest limit for a resident hunting in Units 16B, 17, 19A, 19D, 20E, 21, 22A, 22B, 22D, 22E, 23, 24B, 25D, and 26A is two brown bears per regulatory year. A person may not take more than one brown bear, statewide, in any regulatory year, except that in these units, a person may take two brown bears per regulatory year (5 AAC 92.132 Bag limit for brown bears).

### **5 AAC 92.031 - Permit for selling skins, skulls, and trophies**

...

*(g) A person may sell, advertise, or otherwise offer for sale a skull or hide with claws attached of a brown bear harvested in an area where the bag limit is two brown bears per regulatory year only after first obtaining a permit\* from the department. Any advertisement must include the permit number assigned by the department, and the department will permanently mark all hides and skulls intended for sale. All bears sold under this permit must be reported to the department within the time frame specified on the permit.*

**\*Note:** A "Permit to Sell a Brown/Grizzly Bear Hide and/or Skull" is available at the time of sealing from the sealing officer.

### **Extent of Federal Public Lands**

Federal public lands comprise approximately 54% of Alaska and consist of 20% U.S. Fish and Wildlife Service managed lands, 15% Bureau of Land Management managed lands, 14% National Park Service managed lands, and 6% U.S. Forest Service managed lands.

### **Customary and Traditional Use Determinations**

This is a statewide proposal. For more information refer to the customary and traditional use determinations at § \_\_.24 Customary and traditional use determinations.

## **Background**

### Convention on International Trade in Endangered Species of Wild Fauna and Flora

All Alaskan brown/grizzly bears are classified as the same species, *Ursus arctos*, but are referred to differently depending on where they are found and their diet. In general, the common name “brown bear” refers to those *Ursus arctos* found in the coastal regions, and the common name “grizzly bear” refers to those found in the interior. The brown bear conservation environment in the lower 48 is related but very different than in Alaska, which is the only remaining state with an abundant brown bear population. Brown bears once ranged from northern Alaska and western Canada south to Mexico, and from the west coast east across the great plains of the United States. Over the last 200 years, the number and range of brown bears south of Canada has declined by more than 95% largely as a result of excessive human caused mortality and habitat loss (ADF&G 2000). In 1990, fewer than 1,000 brown bears remained in the states south of the Canadian border (Schoen 1990). Today, Alaska is home to more than 98% of the brown bear population in the United States and 70% of the brown bears in North America (ADF&G 2000). With the demise of brown bears in other areas, Alaska has become a premier locale for trophy bear hunting.

In 1975 the North American brown bear was listed by the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) as an Appendix II species, which means it may become threatened by extinction if trade is not strictly regulated and monitored. This listing is designed to protect threatened populations elsewhere in North America, outside of Alaska. Commercial trade, in Appendix II species is allowed only if the state of export issues permits reporting that the trade will not be detrimental to the survival of the species in the wild. The transport of brown bear parts between states or countries is subject to both State and Federal consideration and permitting (USFWS 2023).

Licensed hunting of brown bears occurs in four provinces and territories in Canada (Yukon, Northwest Territories, Nunavut, and British Columbia). In Canada, almost all trade in brown bear parts, including gall bladders and paws, is prohibited (some exceptions apply to Aboriginal groups for personal or ceremonial use). Some manufactured, non-food items, such as tanned hides, may be sold, but such trade in brown bear parts is low. In Canada, brown bears are mainly traded as hunting trophies (skins, rugs, or taxidermy mounts). A provincial or territorial permit is needed to legally possess, sell, and export brown bear parts, including those killed by accident or for defense of life and property. A CITES export permit is required for international export (Government of Canada 2012, 2014).

### Sale of Hides

People have sold and exported brown bear pelts from Alaska for centuries. During the Russian Period in Alaska, the Russian American Company exported large numbers of brown bear skins to St. Petersburg and Asia (Bockstoce 2009).

Conservation efforts, led by Eastern conservationists, began with the passage of the Game Law of 1908 that implemented hunting seasons and a licensing system for brown bear parts that were being shipped out of Alaska, and limited exports to three brown bear hides annually per person and a \$5 dollar fee on

each hide. The primary deterrent to the sale and export of brown bear hides was the export limit and fee (Holzworth 1930).

In 1925 a new game law was passed that eliminated market hunting of big game, including brown bears, and established the Alaska Game Commission, the predecessor to the Alaska Department of Fish and Game (ADF&G), that was responsible for imposing and revising seasons and harvest limits in Alaska. However, lack of enforcement and increases in sport and trophy hunting, especially for big coastal bears, continued to threaten brown bear populations in some areas of Alaska. Alaska Natives were exempted under the new law and were still permitted to hunt game at any time of year for food and to sell game hides within the state unless otherwise restricted (Dufresne 1965).

Beginning in 1961 after Alaska statehood, the purchase, sale, or barter of brown bears or brown bear parts was prohibited by the State of Alaska (State of Alaska 1961). Salvage and sealing requirements, introduced in 1961, mandated that a hunter retrieve the hide with claws attached and skull so that scientific information regarding the sex, age, and hide quality of harvested bears could be obtained by biologists. Beginning in 1968, the harvest limit in all units open to brown bear hunting was one bear every four regulatory years. Beginning in 1977, all hunters were required to purchase a tag before hunting a brown bear. However, in rural western Alaska, participation by subsistence users was very limited, and few subsistence harvests were reported through this system (Thornton 1992).

The issue of claw retention was examined extensively by the Brown Bear Claw Handicraft Working Group. The group was formed by the Federal Subsistence Board in 2009 to discuss a range of issues relating to brown bear claws including their use in handicrafts, the feasibility of tracking, and potential changes to regulations. Of particular concern to this group was preventing the illegal harvest and sale of brown bear parts that can garner significant monetary value in worldwide markets, and which may incentivize illegal harvest of brown bear populations elsewhere in North America where conservation concerns are prevalent. Brown bear claws, paws, and gall bladders are the primary illegal items sought for these markets (OSM 2010).

Sealing requirements help to track the sale of wildlife parts, to validate that an animal was legally harvested, and to provide documentation to allow individuals traveling to another country to obtain a CITES permit for the item to be legally transported across international borders (OSM 2010). For example, during Alaska Board of Game deliberations on Proposal 57 (sale of brown bear hides with claws attached and/or skulls, see Regulatory History, below) in March 2016, Alaska Wildlife Troopers testified that law enforcement tracks internet activity for hides and attempts to verify permit and sealing records when bear products are encountered. Very few brown bear hides had been encountered. At the time of the testimony, all bear hides sold by Alaska residents were appropriately harvested under a predation control permit. These permits are for the purpose of predation control to recover depleted prey populations such as moose and caribou (ADF&G 2023a).

#### Western/Northwestern Alaska Brown Bear Management Areas

In 1992, the Alaska Board of Game adopted the Western Alaska and Northwestern Alaska brown bear management areas and more liberal subsistence harvesting regulations. Brown bear subsistence harvest

seasons in most of these areas were lengthened to September 1–May 31, and harvest limits were increased to one brown bear every regulatory year. Under subsistence regulations, Alaska residents did not have to seal brown bears unless the hide or skull was being removed from the area or presented for commercial tanning. For brown bears, sealing means taking the skull and hide (with claws and evidence of sex attached) of the bear you killed to an officially designated “sealing officer.” The skull must be skinned from the hide (*5 AAC 92.165 - Sealing of bear skins and skulls*). Hides and skulls are permanently marked by ADF&G (*5 AAC 92.990 – Definitions*).

An Alaska resident hunting in these management areas was required to have a State subsistence registration permit and to salvage the meat, but the hide and skull need not be salvaged. Over time the Alaska Board of Game has further modified these regulations. Currently, State subsistence registration hunts in which the hide and skull need not be sealed, unless removed from the area or presented for commercial tanning, occur in Unit 9B, all drainages in Unit 9E that drain into the Pacific Ocean between Cape Kumliun and the border of Unit 9D and Unit 9E, Unit 17, Unit 18, that portion of Units 19A and 19B downstream of and including the Aniak River drainage, Unit 21D, Unit 22, Unit 23, Unit 24, and Unit 26A (*5 AAC 92.165 Sealing of bear skins and skulls*).

## Regulatory History

### Customary Trade

In 1992, the Federal Subsistence Board adopted final Federal subsistence regulations in which it defined customary trade to be the following: “*Customary trade means cash sale of fish and wildlife resources regulated herein, not otherwise prohibited by Federal law or regulation, to support personal and family needs; and does not include trade which constitutes a significant commercial enterprise*” (§ \_\_\_\_.4 *Definitions*). The Board said it would continue to refine the definition of customary trade (57 Fed. Reg. 104, 22941 [May 29, 1992]). Customary trade is part of the definition of subsistence uses in Federal regulations.<sup>2</sup>

The Federal Subsistence Board’s customary-trade focus has been refining regulations to address two issues on a region-by-region basis. One is the sale of salmon and the second is the sale of handicrafts that incorporate brown bear claws. The Board appointed working groups to propose regulations with input from Regional Advisory Councils. In 2003, the Board adopted regulations defining a significant commercial enterprise of salmon in some regions of the state and requiring a permit and reporting of customary trades of salmon in other regions of the state (§ \_\_\_\_.27(b)(11)(i) and (ii); § \_\_\_\_.27(b)(12)) and allowing the sale of handicrafts that incorporate brown bear claws in 2012 (§ \_\_\_\_.25(j)(7)(ii)). To allow the sale of handicrafts incorporating brown claws, a modification to the sealing certificate, which is managed by the State of Alaska, was required to include a place on the certificate indicating that the

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<sup>2</sup> *Subsistence means the customary and traditional uses by rural Alaska residents of wild, renewable resources for direct personal or family consumption as food, shelter, fuel, clothing, tools, or transportation; for the making and selling of handicraft articles out of nonedible byproducts of fish and wildlife resources taken for personal or family consumption; for barter, or sharing for personal or family consumption; and for **customary trade** (§ \_\_\_\_.4 *Definitions*)*

bear was harvested by a Federally qualified subsistence user (§ \_\_.25(j) *Utilization of fish, wildlife, or shellfish*, see regulations in the **Appendix**) (68 Fed. Reg. 81, 22309, [April 28, 2003]; 77 Fed. Reg. 114, 35498 [June 13, 2012]).

### Sale of Brown Bear Hides

In 2002, Proposal WP02-01, submitted by a resident of Fort Yukon, requested the Federal Subsistence Board to classify black bears and brown bears as furbearers, which opened up the possibility that bear hides may be sold (*If you are a Federally qualified subsistence user, you may sell the raw fur or tanned pelt with or without claws attached from legally harvested furbearers* (\_\_25(j)(8)).

Regional Advisory Councils differed in their recommendations. The Southeast Alaska Council was the only one that supported legalizing the sale of brown bear and black bear hides. The Southeast Alaska Council justification read,

The Council was in favor of full use of subsistence resources and did not believe that allowing sale of bear parts would increase bear harvests, promote illegal trade, or cause conservation concerns. The Council noted that hunting regulations for bear limit the number of bears that can be taken and that sale of parts of legally taken bears would provide only a minor financial return to the harvester. There were no conservation concerns for the brown bear population under existing management; the southeast population is healthy, and fewer bears are taken than the harvest guideline would allow. This change in classification would not affect other users and could be positive for subsistence users (OSM 2002: 23).

One Council supported the sale of black bear pelts only, and five other Councils supported allowing the sale of only handicrafts that incorporate black bear fur (thereby aligning Federal and State regulations). One Council said the sale of bear parts could threaten bear populations and was not a customary and traditional use in the region. A Western Interior Alaska Council member abstained from voting on the proposal because of a cultural taboo that women do not talk about bears. Two Councils said that such decisions should be made on a region-by-region basis and not statewide (OSM 2002). The Board adopted a motion to only allow the sale of handicrafts incorporating black bear fur: *If you are a Federally qualified subsistence user, you may sell handicraft articles made from the skin, hide, pelt, or fur, including claws, of a black bear* (§ \_\_.25(j)(6)) (67 Fed. Reg. 125, 43711 [June 28, 2002]).

In 2006, the Alaska Board of Game adopted regulations to allow the sale of raw brown bear hides, with claws attached, harvested in specific predator control management areas under a State permit: *“After the skin and skull is sealed as required under 5 AAC 92.165(a), a person may sell the untanned skin, with claws attached, and skull of a brown bear taken in an active brown bear predator control area listed in 5 AAC 92.125 only under a permit issued by the department”* (5 AAC 92.031(d)). The purpose of predation control is to recover depleted prey populations such as moose and caribou (ADF&G 2006a, 2006b:5, 2023a).

In 2016, the Alaska Board of Game adopted Proposal 57 to allow the sale of brown bear hides and/or skulls by Alaska residents in units where the harvest limit is two bears annually: *A person may sell, advertise, or otherwise offer for sale a skull or hide with claws attached of a brown bear harvested in an area where the bag limit is two brown bears per regulatory year. . . . (5 AAC 92.031(g)).* Currently, these units with two-bear harvest limits in State regulations are 16B, 17, 19A, 19D, 20E, 21, 22A, 22B, 22D, 22E, 23, 24B, 25D, and 26A (*5 AAC 92.132 Bag limit for brown bears*) (ADF&G 2016a, 2016b:32, 2016c:5).

In 2018, the Federal Subsistence Board rejected the recommendations of affected Councils on Proposal WP18-44 to allow the sale of brown bear hides with claws attached and/or skulls in Unit 23. The Board said black markets for illegally acquired brown bear parts are known to encourage poaching and increasing market availability for brown bear parts may intensify illegal harvest. The Board also noted there is insufficient evidence that residents of Unit 23 have an established pattern of customary trade involving brown bear hides and skulls, and few residents of Unit 23 harvest brown bears under the Federal subsistence regulation due to meat salvage and sealing requirements. The lack of a component to the proposal that would require a permit for sale in line with State regulations was also a factor in the Board's justification for rejecting the proposal (OSM 2018).

#### Current General Regulations

Federal subsistence regulations prohibit the sale of wildlife or their parts unless specifically allowed under Federal subsistence regulations: *"You may not exchange in customary trade or sell fish or wildlife or their parts, taken pursuant to the regulations in this part, unless provided for in this part"* (§ \_\_\_\_.7(b) *Restriction on use*).

One specific authorization in Federal subsistence regulations for the sale of the non-edible byproducts of brown bears harvested for subsistence is for handicrafts: *"If you are a Federally qualified subsistence user, you may sell handicraft articles made from the skin, hide, pelt, or fur, including claws, of a brown bear taken from Units 1–5, 9A–C, 9E, 12, 17, 20, 22, 23, 24B (only that portion within Gates of the Arctic National Park), 25, or 26"* (§ \_\_\_\_.23(j) *Utilization of fish, wildlife, or shellfish*).

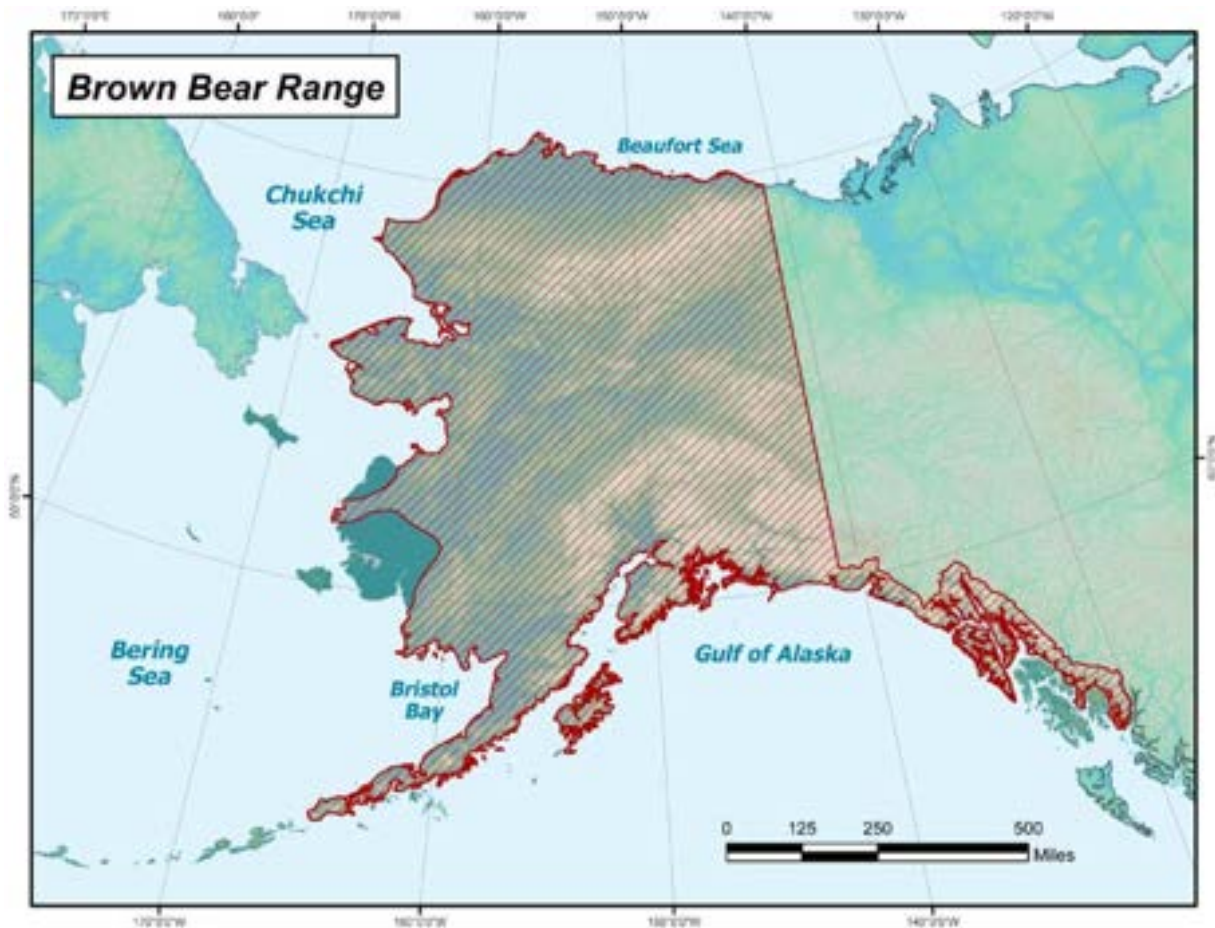
Federal subsistence regulations define a brown bear hide as having claws attached: *. . . skin, hide, or pelt of a bear shall mean the entire external covering with claws attached"* (§ \_\_\_\_.23(a) *Definitions*).

Additionally, customary trade shall not constitute a significant commercial enterprise: *Customary trade means exchange for cash of fish and wildlife resources regulated in this part, not otherwise prohibited by Federal law or regulation, to support personal and family needs; and does not include trade which constitutes a significant commercial enterprise* (§ \_\_\_\_.4 *Definitions*). Sales that rise to the level of a significant commercial enterprise are not defined on a statewide basis and instead may be defined on a region-by-region basis by placing monetary caps on sales and/or requiring permits for and reporting of customary trades (see examples of these regulations in the **Appendix** at § \_\_\_\_.27 *Subsistence taking of fish*).

## Biological Background

Brown bears on Kodiak Island are the only distinct subspecies (*Ursus arctos middendorffi*) because they are genetically and physically isolated from other *Ursus arctos*. However, all “grizzly bears” and “brown bears” are considered “brown bears” for purposes of harvest in Alaska.

Alaska has an estimated 30,000 brown bears statewide (ADF&G 2023b). Brown bears range throughout most of Alaska, except the islands of the Aleutian Chain west of Unimak and in Southeast Alaska south of Frederick Sound (**Figure 1**). High densities of brown bears occur on Kodiak Island, the Alaska Peninsula, and the Admiralty, Baranof, and Chichagof Islands of Southeast Alaska. The density of brown bears in Alaska varies considerably with habitat and ranges anywhere from 2.6 bears/1,000 km<sup>2</sup> on the North Slope (Lenart 2021) to 275 bears/1,000 km<sup>2</sup> in Southeast Alaska (Bethune 2021), although these estimates are extrapolated from an estimate derived from a reanalysis of 20-year-old data. Except for breeding pairs and females with offspring, brown bears are typically solitary creatures and avoid the company of other bears.



**Figure 1.** Map showing the range of brown bears in Alaska (ADF&G 2023c).



Brown bear populations are extremely sensitive to disruption. This is because brown bears exhibit the lowest reproduction rate of any North American mammal. In some areas with low population densities, such as in northern Alaska, brown bear populations are often managed conservatively for several reasons: large home ranges are required to meet resource needs (McLoughlin et al. 2002); female brown bears generally do not successfully reproduce until they are more than five years old and have low reproductive rates, small litters, and long intervals between litters. Sows exhibit high fidelity to home ranges with little emigration or immigration, and monitoring methods are imprecise and expensive (USFWS 1982, Reynolds 1989, Miller et al. 2011)

Brown bears are difficult to survey precisely due to their solitary nature and their sensitivity to disturbance, as is evident from the lack of current population data. Statewide, population estimates are sometimes based on surveys conducted in the 1990s or early 2000s and extrapolated to arrive at a current estimate. In Unit 4 in Southeast Alaska, there has not been a population estimate for brown bears for almost two decades (Bethune 2021). Historically, ADF&G estimated densities of between 227 and 275 bears/1000 km<sup>2</sup>, with population estimated for Unit 4 of 4,303 bears. In Unit 13, there is currently no population monitoring (Hatcher 2023). The last population estimate was in 1998 and it estimated 1,260 bears in the unit, with a density of 21.3 bears/1,000 km<sup>2</sup>. In Units 25 and 26 current population estimates are based on models using population data from 1999. These calculations give an estimated density of 2.6 bears/1,000 km<sup>2</sup>, with a non-statistically derived estimate of 333 bears for Unit 26B (Lenart 2021).

Most population data collected is from sealing records of harvested brown bears. In some areas, brown bears harvested under Federal or State subsistence regulations are not required to be sealed except under certain conditions. Where sealing is not required, a Federal or a State hunting permit is required that sometimes allows for the collection of similar data to sealing records. The data collected from each is used to assess trends in harvest and to inform in-season management actions (Bethune 2021).

### Harvest History

Harvests levels of brown bears have generally increased over the last 40 years with harvest peaking in the early 2010s followed by a downward trend to the current year (ADF&G 2022).

Concerning the sale of the hides with claws attached of legally harvested brown bears in State regulations since 2016, ADF&G has not detected increased harvest. Although brown bear harvest increased slightly (then decreased right back to “normal” levels) when brown bears were first allowed to be taken over bait, hunting seasons were also being lengthened that might have contributed to this slight increase in harvest around the same time. Staff have been instructed to issue sale permits to anyone that harvests a brown bear in a two-bear harvest limit area that might possibly be interested in selling it down the road (Bogle 2023, pers. comm.; Weber 2023, pers. comm.). As of August 2022, ADF&G had distributed 38 sale permits for hunts across 10 subunits and has received seven sale notifications from permit holders (Paragi 2023, pers. comm.).

In addition to a State tag or permit, a Federal subsistence permit has been available in some areas of Alaska to harvest brown bears since 1995. In the 20 years from 2002 to 2021, 158 subsistence hunters

have reported harvesting a total of 40 brown bears by Federal permit cumulatively from Units 5, 8, 9, and in the Southcentral Alaska Region (OSM 2023). Subsistence hunters use these Federal permits because it allows them to hunt in areas where there is competition in the State system to obtain permits (for example draw hunts in Units 8), where there formerly was competition in the State system to obtain permits (for example in Unit 15), the hunt area is on National Park or Monument lands (such as in Unit 9), which are closed to the harvest of brown bears except by subsistence users, or in areas with more liberal Federal harvest limits (in Unit 5 for example).

### **Cultural Knowledge and Traditional Practices**

Alaska Natives have harvested bears and competed with them for subsistence resources for at least 14,000 years (Birkedal 2001). Brown bears have traditionally been a very important part of the Alaska Native cultures. Because of their powerful senses and ability to hear through the ground, brown bears are usually referred to indirectly” and respectfully so that they will continue to give themselves to hunters. For this reason, the Yup’ik call them *carayak* (terrible fearsome thing), *ungungssiq* (land animal, quadruped), *naparngali* (one who stands upright) or *kavirluq* (red thing, as opposed to *tan’gerliq*, black bear)” (Fienup-Riordan 2007:164). Athabaskans call the brown bear *ghonoy*, *ghonoy tlaaga* or *dlil ta bahoolaanee*. Tlingits call it *yats’inEt* or *ya’Et’gu tutw’adi’at*. The Iñupiat call it *aklaq*.

Brown bears have been hunted for their meat and hides, and other parts of the bear have been used for traditional medicine or fashioned into such things as tools, amulets, ceremonial regalia, and art (Thornton 1992, Nelson 1983, Fall and Hutchinson-Scarborough 1996, Loon and Georgette 1989, Behnke 1981, ADF&G 1990). Nelson (1983) reports that the brown bear takes an apex of power among Koyukon Athabaskan spirits of the natural world, perhaps below only the wolverine. People’s behavior toward the brown bear is subject to a number of culturally based requirements. Nelson (1983) reports that disregard or violation of these cultural requirements is sharply punished. Traditionally, when Koyukon men hunted brown bears, they followed prescribed rituals. For example, a man is not to openly discuss the brown bear hunt before or after it occurs, and care must be taken to prevent the hide from coming in contact with women. The Koyukon Athabascans have a taboo against women eating brown bear meat or young men eating meat from a brown bear’s head (Nelson 1983). Dena’ina Athabascans in the Lake Clark and Katmai areas competed directly with brown bears for subsistence resources; it is thought that the Dena’ina likely displaced brown bear from the very best salmon fishing sites on certain rivers (Birkedal 2001). The Dena’ina reserved some secondary stream drainages for the exclusive use of bears and for bear hunting. It is reported that Alutiiq residents of the Alaska Peninsula believed that bears are human ancestors that must be shown respect (Sherwonit 1998). In the Chignik Bay, Chignik Lagoon, Chignik Lake, Ivanof Bay and Perryville area, brown bear hunting is governed by a system of traditional Alutiiq beliefs that emphasize respectful treatment of the bear and protection of the hunters (Fall and Hutchinson-Scarborough 1996). According to these traditions, the skull and hide of the bear are left at the kill site; the skull is placed facing in a southern or southeastern direction. Traditional Southeast Alaska, brown bear hunting by Alaska Natives was surrounded by numerous behavioral prescriptions that were considered vital to the success of the hunt. Brown bears are an important symbol of Tlingit social and ceremonial life, and there is emphasis on the close relationship

between humans and bears (Thornton 1992). Bear hides were used for ceremonial robes, clothing, rugs and bedding. Thornton (1992) reported that the Tlingit traditionally preferred brown bear hides for children's bedding, as the hides provided not only warmth, but also were thought to prevent illnesses. Loon and Georgette (1989) and Georgette (2001) described the widespread respect of the Iñupiat for bears and the belief that the bears must be treated appropriately. An Iñupiat man is not to openly discuss the bear hunt before or after it occurs. Traditionally, the bear's head is given to the eldest member of the community or hung on a tree or pole in camp. The Iñupiat give the bear hide to an elder or use it for bedding and clothing. It has been customary practice of some Yup'ik villagers to use bear hides for mattresses, trimming on clothing and skin for boats and to bury the bear's skull facing east at the kill site. Brown bear harvesting is a specialized pursuit that is concentrated in certain villages and certain families (Coffing 1991).

### **Effects of the Proposal**

If Proposal WP23-01 is adopted, the sale of the hide of a brown bear legally harvested from Federal public lands under Federal regulations will be legal as long as the edible meat is salvaged for human consumption, claws are attached to the hide, and the hide is sealed by a representative of ADF&G.

However, this outcome might conflict with CITES and State regulations implementing CITES. CITES provides for the commercial trade of hides of legally harvested brown bears only if the state of export issues permits reporting that the trade will not be detrimental to the survival of the species in the wild. The State of Alaska currently issues these permits but only for the sale of the hides of brown bears legally harvested in areas with a two-brown bear harvest limit (in Units 16B, 17, 19A, 19D, 20E, 21, 22A, 22B, 22D, 22E, 23, 24B, 25D, and 26A).

It is already legal under State regulations to sell the hide of brown bears legally harvested in areas of Alaska where the harvest limit is two brown bears per year except for lands designated as National Park or Monument, which are only open to hunting under Federal subsistence regulations. Effects on nonsubsistence users are not anticipated. Effects on the resource, specifically whether, or how much, the harvest of brown bears will increase is anticipated to be minimal.

If Proposal WP23-01 is not adopted, the sale of brown bear hides will not be legal under Federal regulations but will remain legal in areas of Alaska under State regulations where the harvest limit is two brown bears per year including on most Federal public lands, except for lands designated as National Park or Monument. No effects on nonsubsistence users or the resource are anticipated.

### **OSM PRELIMINARY CONCLUSION**

**Support** Proposal WP24-01 **with modification** to allow the sale of brown bear hides with claws attached in areas where the Federal harvest limit is two bears every regulatory year and after first obtaining a permit available at the time of sealing from an ADF&G sealing officer.

The modified regulation should read:

**§ \_\_.25 Subsistence taking of fish, wildlife, and shellfish: general regulations**

*(j) Utilization of fish, wildlife, or shellfish*

...

*(13) You may sell the raw/untanned and tanned hide or cape from a legally harvested caribou, deer, elk, goat, moose, musk ox, sheep, and brown bear with claws attached harvested in an area with a two brown bear limit per regulatory year\* in Federal regulations only after first obtaining a permit\* at the time of sealing from the Alaska Department of Fish and Game.*

**\*Note:** Harvest limits of two brown bears per regulatory year in 2022/24 Federal regulations include all or portions of Units 22B, 22D, 23, 24B, 25D, and 26A. A "Permit to Sell a Brown/Grizzly Bear Hide and/or Skull" is available at the time of sealing from the sealing officer.

**Justification**

Conservation is a concern regarding brown bear populations in Alaska for several reasons including their low productivity rates, their solitary nature, difficulty obtaining population estimates, and high sport use in some areas. The OSM modification to the proposal puts limits on sales of brown bear hides. The sale of brown bear hides could only occur for brown bears shown to be legally harvested from Federal public lands under Federal regulations, and only in areas where there is a two brown bear harvest limit in Federal regulations. Currently, such areas are all or portions of Units 22B, 22D, 23, 24B, 25D, and 26A. Further, the edible meat must be salvaged (§ \_\_.25(j)(2)(ii)), the hide must have the claws attached (§ \_\_.25(a)), and the hide must be sealed by ADF&G before it can be removed from the area (§ \_\_.26(j)).

The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) provides for the commercial trade of hides of legally harvested brown bears only if the state of export issues permits reporting that the trade will not be detrimental to the survival of the species in the wild. Therefore, a permit from ADF&G is required. The Alaska Department of Fish and Game issues this type of permit before selling the hide of a brown bear legally harvested under State regulations but only in areas with a two brown bear harvest limit (in Units 16B, 17, 19A, 19D, 20E, 21, 22A, 22B, 22D, 22E, 23, 24B, 25D, and 26A). Allowing the sale of the hide of a brown bear harvested from other areas would require negotiation with the State over the use of its permitting system.

These requirements would limit from where and how many hides would be sold by federally qualified subsistence users. Limiting legal sales to only brown bears taken from areas with two-bear harvest limits would be a protection from over harvest. Other tools exist for the Board to use if harvests were to rise above sustainable yields in an area. These tools include reducing seasons and harvest limits, placing monetary caps on sales on a region-by-region bases, and requiring permits for and reporting of customary trades.

This is a statewide proposal that will be reviewed by all 10 Regional Advisory Councils. Each Council can inform the Board whether the regulation is culturally appropriate for their region.

## **LITERATURE CITED**

ADF&G. 1990. Determining customary and traditional uses of selected populations of goat, black bear, brown bear, mountain goat and moose in Southeast Alaska. Report to the Board of Game. Subsistence Div. Juneau, AK. 45 pages.

ADF&G. 2000. Kenai Peninsula brown bear conservation strategy. ADF&G Div. of Wildlife Conservation. Juneau, AK. 84 pages.

ADF&G. 2006a. Meeting Summary, Statewide Cycle A. January 27–30, 2006, meeting of the Alaska Board of Game in Anchorage. Juneau, AK.

<https://www.adfg.alaska.gov/index.cfm?adfg=gameboard.meetinginfo&date=01-01-2007&meeting=all>

ADF&G. 2006b. 2006–2007 Alaska hunting regulations governing general, subsistence, commercial uses of Alaska’s wildlife. Juneau, AK. 112 pages.

ADF&G. 2015. Alaska Board of Game meeting information.

<http://www.adfg.alaska.gov/index.cfm?adfg=gameboard.meetinginfo&date=01-08-2015&meeting=juneau>, accessed May 19. Board Support Section, Juneau, AK.

ADF&G. 2016a. Alaska Board of Game meeting information. Statewide Regulations Cycle A&B, March 18-28, 2016. Fairbanks, AK. Meeting audio.

[http://www.adfg.alaska.gov/static/regulations/regprocess/gameboard/swf/2015-2016/20160318\\_statewide/indexlan](http://www.adfg.alaska.gov/static/regulations/regprocess/gameboard/swf/2015-2016/20160318_statewide/indexlan), accessed August 23, 2017.

ADF&G. 2016b. Analysis and recommendations. Alaska Board of Game statewide regulations meeting March 18–26, 2016 in Fairbanks, AK. Juneau, AK. 10 pages.

ADF&G. 2016c. Meeting summary. Alaska Board of Game statewide regulations meeting March 18–26, 2016 in Fairbanks, AK. Juneau, AK. 10 pages.

ADF&G. 2022. Intensive management briefing. Alaska Board of Game meeting, March 4–12, 2022, in Fairbanks. Department Reports and Recommendations. Table 1.1 Intensive Management. 12 pages.

<https://www.adfg.alaska.gov/index.cfm?adfg=gameboard.meetinginfo&date=03-04-2022&meeting=fairbanks>, retrieved July 31, 2023.

ADF&G. 2023a. Intensive management in Alaska: Alaska’s predator control programs. Juneau, AK.

<https://www.adfg.alaska.gov/index.cfm?adfg=intensivemanagement.programs>

ADF&G. 2023b. Brown/grizzly bear hunting in Alaska: life history.

<http://www.adfg.alaska.gov/index.cfm?adfg=brownbearhunting.main>, accessed May 3, 2023. Juneau, AK.

ADF&G. 2023c. Important information for all bear hunters: tag requirements, salvage and evidence of sex, sealing. requirements. <http://www.adfg.alaska.gov/index.cfm?adfg=brownbearhunting.resources>, accessed May 3, 2023.

*WP24-01 - Allow sale of brown bear hides*

Behnke, S. 1981. Subsistence use of brown bear in the Bristol Bay Area: a review of available information. ADF&G, Div. of Subsistence Tech. Paper No. 46. Juneau, AK.

Bethune, S. W. 2021. Brown bear management report and plan, Game Management Unit 4: Report period 1 July 2014–30 June 2019, and plan period 1 July 2019–30 June 2024. ADF&G Div. of Wildlife Conservation, Species Management Report and Plan ADF&G/DWC/SMR&P-2021-13, Juneau, AK.

Birkedal, T. 2001. Ancient hunters in the Alaskan wilderness: human predators and their role and effect on wildlife populations and the implications for resource management. pages 228-234. in W. E. Brown and S. D. Veirs, editors. 7th Conf. on Resources and Resource Man. in Parks and on Public Lands. 479 pages.

Bockstoce, J.R. 2009. Furs and frontiers in the far North: the contest among Native and foreign nations for the Bering Strait fur trade. Yale University Press. 475 pages.

Bogle, S. Wildlife biologist. Personal communication: email. ADF&G Division of Wildlife Conservation, Juneau, AK.

Coffing, M. W. 1991. Kwethluk subsistence: contemporary land use patterns, wild resource harvest and use and the subsistence economy of a lower Kuskokwim River area community. ADF&G, Div. of Subsistence Tech. Paper No. 157. Juneau, AK. 244 pages.

Courtright, A.M. 1968. Game harvests in Alaska. Federal Aid in Wildlife Restoration Report. Juneau, Ak. 70 pages.

Dufresne, F. 1965. No room for bears. Holt Rinehart and Winston, New York.

Fall, J. A. and L B. Hutchinson-Scarborough. 1996. Subsistence uses of brown bears in communities of Game Management Unit 9E, Alaska Peninsula, Southwest Alaska. ADF&G, Div. of Subsistence Tech. Paper No. 235. Juneau, AK. 17 pages.

Fienup-Riordan, A. 2007. *Yuungnaqpiallerput*, the way we genuinely live: masterworks of Yup'ik science and survival. University of Washington Press, Seattle, WA.

Georgette, S. 2001. Brown bears on the northern Seward Peninsula, Alaska: traditional knowledge and subsistence uses in Deering and Shishmaref. ADF&G, Div. of Subsistence Tech. Paper No. 248. Juneau, AK. 48 pages.

Government of Canada. 2012. Grizzly bear (*Ursus arctos*): COSEWIC assessment and status report 2012. Ottawa, Ontario. [https://www.canada.ca/en/environment-climate-change/services/species-risk-public-registry/cosewic-assessments-status-reports/grizzly-bear-2012.html#\\_Toc330973003](https://www.canada.ca/en/environment-climate-change/services/species-risk-public-registry/cosewic-assessments-status-reports/grizzly-bear-2012.html#_Toc330973003).

Government of Canada. 2014. Grizzly bear: non-detriment finding. Ottawa, Ontario. <https://www.canada.ca/en/environment-climate-change/services/convention-international-trade-endangered-species/non-detriment-findings/gizzly-bear.html>

Harper, P. and L.A. McCarthy, editors. 2015. Brown bear management report of survey-inventory activities 1 July 2012–30 June 2014. ADF&G Div. of Wildlife Conservation, Species Management Report ADF&G/DWC/SMR-2015-1, Juneau, AK.

*WP24-01 - Allow sale of brown bear hides*

Hatcher, H. L. 2023. Brown bear management report and plan, Game Management Unit 13: Report period 1 July 2014–30 June 2019, and plan period 1 July 2019–30 June 2024. ADF&G Div. of Wildlife Conservation, Species Management Report and Plan ADF&G/DWC/SMR&P-2023-8, Juneau, AK.

Holzworth, J.M. 1930. The wild grizzlies of Alaska. G.P. Putnam's Sons, New York.

Lenart, E. A. 2021. Brown bear management report and plan, Game Management Units 25A, 25B, 25D, 26B, and 26C: Report period 1 July 2014–30 June 2019, and plan period 1 July 2019–30 June 2024. ADF&G Div. of Wildlife Conservation, Species Management Report and Plan ADF&G/DWC/SMR&P-2021-17, Juneau, AK.

Loon, H. and S. Georgette. 1989. Contemporary brown bear use in Northwest Alaska. ADF&G, Div. of Subsistence Tech. Paper No. 163. Juneau, AK. 58 pages.

Miller, S.D. 1993. Brown bears in Alaska: a statewide management overview. Wildlife Technical Bulletin No. 11. ADF&G, Div. of Wildlife Conservation. Juneau, AK. 40 pages.

Miller, S.D. and J. W. Schoen. 1999. Status of management of the brown bear in Alaska. Pages 40–46. *in* C. Servheen, S. Herrero, and B. Peyton, editors. Bears-Status survey and conservation action plan. IUCN/SSC Bear and Polar Bear Specialist Group, IUCN, Gland, Switzerland and Cambridge, UK. 309 pages.

Nelson, R. K. 1983. Making prayers to the raven: a Koyukon view of the northern forest. Univ. of Chicago Press, Chicago, IL. 292 pages.

OSM. 2002. Staff analysis WP02-01. Pages 1–24 *in* Federal Subsistence Board Meeting Materials. May 13–15, 2002, in Anchorage. Office of Subsistence Management, USFWS. Anchorage, AK.

OSM. 2004. Staff analysis Proposal WP04-01. Pages 15–20 *in* Federal Subsistence Board Meeting Materials. May 18–24 in Anchorage. Office of Subsistence Management, USFWS. Anchorage, AK.

OSM. 2010. Minutes of the Brown Bear Claw Handicraft Working Group meeting on July 29, 2010. Unpublished document. Meeting held at USFWS Regional Office in Anchorage, AK.

OSM. 2018. Enclosure, 805(c) letter to the Chair of the Northwest Arctic Subsistence Regional Advisory Council from the Chair of the Federal Subsistence Board. On file, USFWS, Anchorage, AK.

OSM 2023. Federal Subsistence Permit System. Online database, accessed May 2, 2023. USFWS, Anchorage, AK.

Paragi, T. 2023. Wildlife biologist. Personal communication: by email. Alaska Department of Fish and Game, Division of Wildlife Conservation, Fairbanks, AK.

Reynolds, H.V. 1987. Populations dynamics of a hunted grizzly bear population in the northcentral Alaska Range. ADF&G Div. of Wildlife Conservation. Juneau, AK.

Reynolds, H. 2001. Wildlife Biologist. Personal communication: email. ADF&G Div. of Wildlife Conservation, Fairbanks, AK.

Robison, H.L. 2017. Wildlife Biologist. Personal communication: e-mail. Western Arctic National Parklands, National Park Service. Kotzebue, AK.

*WP24-01 - Allow sale of brown bear hides*

Servheen C. 1999. The trade in bear and bear parts. Pages 33-46 *in* C. Servheen, S. Herrero, and B. Peyton, editors. Bears status survey and conservation action plan. IUCN/SSC Bear and Polar Bear Specialist Group, IUCN, Gland, Switzerland and Cambridge, UK. 309 pages.

Sherwonit, B. 1998. Alaska bears: grizzlies, black bears, and polar bears. Alaska Northwest Books, Portland, OR. 108 pages.

Sherwood, M. 1979. Specious speciation in the political history of the Alaska brown bear. Pages 49–60 *in* Western Historical Quarterly 10 (January).

State of Alaska. 1961. Alaska Game Regulations, No. 2. ADF&G, Juneau, AK. 33 pages.

Suring, L. and G. Del Frate. 2002. Spatial analysis of locations of brown bears killed in defense of life or property on the Kenai Peninsula, Alaska. *Ursus*, 13.

Thornton, T. G. 1992. Subsistence use of brown bear in Southeast Alaska. ADF&G Div. of Subsistence Tech. Paper No. 214. Juneau, AK. 95 pages.

USFWS. 2023. ECOS Environmental Conservation Online System. Grizzly bear.  
<https://ecos.fws.gov/ecp/species/7642>

Weber, N. 2023. Regulations Program Coordinator. Personal communication: email. ADF&G Division of Wildlife Conservation. Juneau, AK.



## Appendix

### Relevant Federal Regulations

#### § \_\_.4 Definitions

*The following definitions apply to all regulations contained in this part:*

...

*Customary trade means exchange for cash of fish and wildlife resources regulated in this part, not otherwise prohibited by Federal law or regulation, to support personal and family needs; and does not include trade which constitutes a significant commercial enterprise.*

...

*Subsistence means the customary and traditional uses by rural Alaska residents of wild, renewable resources for direct personal or family consumption as food, shelter, fuel, clothing, tools, or transportation; for the making and selling of handicraft articles out of nonedible byproducts of fish and wildlife resources taken for personal or family consumption; for barter, or sharing for personal or family consumption; and for customary trade.*

#### § \_\_.25 Subsistence taking of fish, wildlife, and shellfish: general regulations

##### *(a) Definitions*

...

*Bear means black bear, or brown or grizzly bear*

...

*Big game means black bear, brown bear, bison, caribou, Sitka black-tailed deer, elk, mountain goat, moose, musk ox, Dall sheep, wolf, and wolverine.*

...

*Edible meat means . . . For black bear, brown and grizzly bear, “edible meat” means the meat of the front quarter and hindquarters and meat along the backbone (backstrap).*

...

*Handicraft means a finished product made by a rural Alaskan resident from the nonedible byproducts of fish or wildlife and is composed wholly or in some significant respect of natural materials. The shape and appearance of the natural material must be substantially changed by the skillful use of hands, such as sewing, weaving, drilling, lacing, beading, carving, etching, scrimshawing, painting, or other means, and incorporated into a work of art, regalia, clothing, or other creative expression, and can be either traditional or contemporary in design. The handicraft must have substantially greater monetary and aesthetic value than the unaltered natural material alone.*

...

Sealing means placing a mark or tag on a portion of a harvested animal by an authorized representative of the ADF&G; sealing includes collecting and recording information about the conditions under which the animal was harvested, and measurements of the specimen submitted for sealing, or surrendering a specific portion of the animal for biological information.

...

Skin, hide, pelt, or fur means any tanned or untanned external covering of an animal's body. However, for bear, the skin, hide, pelt, or fur means the external covering with claws attached.

...

Trophy means a mount of a big game animal, including the skin of the head (cape) or the entire skin, in a lifelike representation of the animal, including a lifelike representation made from any part of a big game animal; "trophy" also includes a "European mount" in which the horns or antlers and the skull or a portion of the skull are mounted for display

...

**(j) Utilization of fish, wildlife, or shellfish.**

...

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

...

(ii) The hide and edible meat of a brown bear, except that the hide of brown bears taken in Units 5, 9B, 17, 18, portions of 19A and 19B, 21D, 22, 23, 24, and 26A need not be salvaged;

...

(7) If you are a Federally qualified subsistence user, you may sell handicraft articles made from the skin, hide, pelt, or fur, including claws, of a brown bear taken from Units 1–5, 9A–C, 9E, 12, 17, 20, 22, 23, 24B (only that portion within Gates of the Arctic National Park), 25, or 26.

(i) In Units 1, 2, 3, 4, and 5, you may sell handicraft articles made from the skin, hide, pelt, fur, claws, bones, teeth, sinew, or skulls of a brown bear taken from Units 1, 4, or 5.

(ii) Prior to selling a handicraft incorporating a brown bear claw(s), the hide or claw(s) not attached to a hide must be sealed by an authorized Alaska Department of Fish and Game representative. Old claws may be sealed if an affidavit is signed indicating that the claws came from a brown bear harvested on Federal public lands by a Federally qualified user. A copy of the Alaska Department of Fish and Game sealing certificate must accompany the handicraft when sold.

...

(13) You may sell the raw/untanned and tanned hide or cape from a legally harvested caribou, deer, elk, goat, moose, musk ox, and sheep.

**§ \_\_.27 Subsistence taking of fish.**

...

*(b) Methods, means, and general restrictions.*

...

*(11) Transactions between rural residents. Rural residents may exchange in customary trade subsistence-harvested fish, their parts, or their eggs, legally taken under the regulations in this part, for cash from other rural residents. The Board may recognize regional differences and regulates customary trade differently for separate regions of the State.*

*(i) Bristol Bay Fishery Management Area—The total cash value per household of salmon taken within Federal jurisdiction in the Bristol Bay Fishery Management Area and exchanged in customary trade to rural residents may not exceed \$500.00 annually.*

*(ii) Upper Copper River District—The total number of salmon per household taken within the Upper Copper River District and exchanged in customary trade to rural residents may not exceed 50 percent of the annual harvest of salmon by the household. No more than 50 percent of the annual household limit may be sold under paragraphs (b)(11) and (12) of this section when taken together. These customary trade sales must be immediately recorded on a customary trade recordkeeping form. The recording requirement and the responsibility to ensure the household limit is not exceeded rests with the seller.*

*(iii) Customary trade of Yukon River Chinook salmon may only occur between Federally qualified rural residents with a current customary and traditional use determination for Yukon River Chinook salmon.*

*(12) Transactions between a rural resident and others. In customary trade, a rural resident may exchange fish, their parts, or their eggs, legally taken under the regulations in this part, for cash from individuals other than rural residents if the individual who purchases the fish, their parts, or their eggs uses them for personal or family consumption. If you are not a rural resident, you may not sell fish, their parts, or their eggs taken under the regulations in this part. The Board may recognize regional differences and regulates customary trade differently for separate regions of the State.*

*(i) Bristol Bay Fishery Management Area—The total cash value per household of salmon taken within Federal jurisdiction in the Bristol Bay Fishery Management Area and exchanged in customary trade between rural residents and individuals other than rural residents may not exceed \$400.00 annually. These customary trade sales must be*

*immediately recorded on a customary trade recordkeeping form. The recording requirement and the responsibility to ensure the household limit is not exceeded rest with the seller.*

*(ii) Upper Copper River District—The total cash value of salmon per household taken within the Upper Copper River District and exchanged in customary trade between rural residents and individuals other than rural residents may not exceed \$500.00 annually. No more than 50 percent of the annual household limit may be sold under paragraphs (b)(11) and (12) of this section when taken together. These customary trade sales must be immediately recorded on a customary trade recordkeeping form. The recording requirement and the responsibility to ensure the household limit is not exceeded rest with the seller.*

*(iii) Customary trade of Yukon River Chinook salmon may only occur between Federally qualified rural residents with a current customary and traditional use determination for Yukon River Chinook salmon.*

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<b>WP24 07 Executive Summary</b>	
<b>General Description</b>	Proposal WP24-07 requests clarification of Federal trapping regulations that exempt Federally qualified subsistence users from Municipality of Anchorage trapping closures on Federal public lands in Units 7 and 14C. <i>Submitted by: Tom Lessard of Cooper Landing</i>
<b>Proposed Regulation</b>	<p><i>§100.26(n)(7)(iii)(B) &amp; §100.26(n)(14)(iii)(A)</i></p> <p><b><i>Federally qualified subsistence users trapping under these regulations are exempt from Municipality of Anchorage Ordinance AO 2019-050(S) while on Federal public lands which are open to trapping.</i></b></p>
<b>OSM Preliminary Conclusion</b>	<b>Oppose</b> Proposal WP24-07.
<b>Southeast Alaska Subsistence Regional Advisory Council Recommendation</b>	
<b>Southcentral Alaska Subsistence Regional Advisory Council Recommendation</b>	
<b>Kodiak/Aleutians Subsistence Regional Advisory Council Recommendation</b>	
<b>Bristol Bay Subsistence Regional Advisory Council Recommendation</b>	
<b>Yukon-Kuskokwim Delta Subsistence Regional</b>	

<b>WP24 07 Executive Summary</b>	
<b>Advisory Council Recommendation</b>	
<b>Western Interior Alaska Subsistence Regional Advisory Council Recommendation</b>	
<b>Seward Peninsula Subsistence Regional Advisory Council Recommendation</b>	
<b>Northwest Arctic Subsistence Regional Advisory Council Recommendation</b>	
<b>Eastern Interior Alaska Subsistence Regional Advisory Council Recommendation</b>	
<b>North Slope Subsistence Regional Advisory Council Recommendation</b>	
<b>Interagency Staff Committee Comments</b>	
<b>ADF&amp;G Comments</b>	
<b>Written Public Comments</b>	<b>None.</b>

**DRAFT STAFF ANALYSIS**  
**WP24-07**

**ISSUES**

Wildlife Proposal WP24-07, submitted by Tom Lessard of Cooper Landing, requests clarification of Federal trapping regulations that exempt Federally qualified subsistence users from Municipality of Anchorage trapping closures on Federal public lands in Units 7 and 14C.

**DISCUSSION**

The proponent states that Municipality of Anchorage Ordinance Number 2019-50(S) prohibits otherwise legal Federal subsistence trapping on Federal public lands within the Municipality of Anchorage in the Turnagain Arm and Portage Valley areas. The Anchorage Assembly created “Prohibited Trapping Zones” for safe trails within 50 yards of developed trails, excluding off-shoots; and within one-quarter mile of established trailheads, campgrounds, and permanent dwellings. The proponent states that the Municipal ordinance prohibits trapping, punishable by fines, on approximately 20 square miles within Portage Valley, which is mostly Federal public land.

**Existing Federal Regulation**

*None*

**Proposed Federal Regulation**

*§100.26(n)(7)(iii)(B) & §100.26(n)(14)(iii)(A)*

*Federally qualified subsistence users trapping under these regulations are exempt from Municipality of Anchorage Ordinance AO 2019-050(S) while on Federal public lands which are open to trapping.*

**Existing State Regulation**

*5 AAC 92.510 Areas Closed to Trapping*

*(3) Unit 14(C) (Anchorage Area):*



*(A) the drainages into Eklutna River and Eklutna Lake, within Chugach State Park except Thunderbird Creek and those drainages flowing into the East Fork of the Eklutna River upstream from the bridge above the lake;*

*(B) the Eagle River Management Area;*

*(C) that portion of Chugach State Park outside of the Eagle River, Anchorage, and Eklutna management areas is open to trapping under Unit 14(C) seasons and bag limits, except that trapping of wolf, wolverine, land otter, and beaver is not allowed; killer style steel traps with an inside jaw spread seven inches or greater are prohibited; a person using traps or snares in the area must register with the Department of Natural Resources Chugach State Park area office and provide a trapper identification; all traps and snares in the area must be marked with the selected identification; the use of traps or snares is prohibited within*

*(i) 50 yards of developed trails;*

*(ii) one-quarter mile of trailheads, campground, and permanent dwellings;*

*(iii) repealed 7/1/2009;*

*(D) all land and water within the Anchorage Management Area as described in 5 AAC 92.530(3);*

*(E) in the Anchorage Coastal Wildlife Refuge in Unit 14(C), described in AS 16.20.031: all land and water south and west of and adjacent to the toe of the bluff that extends from Point Woronzof southeasterly to Potter Creek;*

*(F) the Joint Base Elmendorf-Richardson (JBER) Management Area, except for beaver, muskrat, mink, weasel, marten, otter, fox, and coyote in areas designated by the commander;*

### **Extent of Federal Public Lands/Waters**

Unit 7 is comprised of 77% Federal public lands and consists of 52% U.S. Forest Service (USFS) managed lands, 23% National Park Service (NPS) managed lands, and 2% U.S. Fish and Wildlife Service (USFWS) managed lands.

Unit 14C is comprised of 16% Federal public lands and consists of 11% USFS managed lands and 5% Bureau of Land Management (BLM) managed lands.

### **Customary and Traditional Use Determinations**

The Federal Subsistence Board (Board) has not made a customary and traditional use determination for furbearers in Units 7 and 14C. Therefore, all rural residents of Alaska may harvest furbearers in these units.

## **Regulatory History**

In 2014, the Board rejected Proposal WP14-01, which requested Federal regulations requiring trapper identification tags on all traps and snares, the establishment of a maximum allowable time limit for checking traps, and establishment of a harvest/trapping report form to collect data on non-target species captured. The proposal analysis indicated statewide application would be unmanageable, would require substantial law enforcement and public education efforts, and could cause subsistence users to avoid the regulation by trapping under State regulations. The proposal was unanimously opposed by all ten Federal Subsistence Regional Advisory Councils, Alaska Department of Fish and Game (ADF&G), and the public as reflected in written public comments.

In 2015, the Alaska Board of Game (BOG) considered Proposal 180, to prohibit trapping within 250 feet of most public roads and trails in the Cooper Landing Area. They opposed the proposal, stating trappers and local residents need to work together to find a solution or compromise upon which all users can agree. BOG members also noted concerns about the enforceability of the proposal and loss of trapping opportunity by requiring trappers to travel 250 feet off trail and back to set and check traps (ADF&G 2015).

In 2016, the BOG considered Proposal 80, to restrict trapping in and around cities with populations over 1,000 people. Specifically, trapping within one-quarter mile of publicly maintained roads, 200 feet of publicly maintained trails, and one mile of permanent dwellings, schools, businesses, and campgrounds would be prohibited. ADF&G stated that proposals restricting trapping should be addressed at regional rather than statewide BOG meetings, so affected local communities can comment. ADF&G also referred to State regulations that limit trapping in management areas. The BOG opposed the proposal due to opposition by 26 Fish and Game Advisory Committees and concern for unintended consequences. The BOG also commented that these types of restrictions could be better handled through city or borough ordinances (ADF&G 2016).

In 2019, the Anchorage assembly passed Municipal ordinance AL No. 2019-50(S), which made it illegal to trap within a prohibited trapping zone. This ordinance established prohibited trapping zones within the Municipality of Anchorage boundaries on public lands owned by the municipality and any land within 50 yards of developed trails and one-quarter mile of trailheads, campgrounds, and permanent dwellings. It also required anyone trapping within the municipal boundary to mark each trap with trapper identification number or contact information of trapper. The Anchorage assembly passed this ordinance for the safety of trail users and pets in Anchorage (MOA 2019).

In 2020, Proposal WP20-20, submitted by Robert Gieringer, requested that hunting and trapping in Unit 7 be prohibited within one mile of roads and trails and that traps be marked with brightly colored tape. This proposal was on the consensus agenda but was removed at the Board meeting by request from a member of the public. The Board rejected the proposal. The Board stated Federal regulations would be more restrictive than State regulations, violating the rural subsistence priority mandated by the Alaska National Interest Land Conservation Act (ANILCA). Furthermore, all users would still be able to hunt and trap without restrictions under State regulations, decreasing the proposal's

effectiveness and increasing user confusion. The Board also stated marking traps with brightly colored tape could result in attracting more people to the trap and possibly pets (FSB 2020).

In March 2022, the BOG considered deferred Proposal 199 at their 2022 Statewide Regulations meeting. Proposal 199 requested 50-yard setbacks along certain multi-use trails and trailheads in Units 13, 14, and 16. This proposal was deferred from the January 2022 BOG meeting so a workshop could be held to reach a compromise on the proposal. The BOG attempted to modify the proposal several times with different amendments, including language created from the workshop. All versions of this proposal were rejected.

In April 2022, the Board considered Proposal WP22-15, submitted by the Cooper Landing Community Safe Trails Committee, requesting setbacks of 1,000 feet on both sides of certain trails; 1,000-foot setbacks on certain roads; and trapping moratoriums in campgrounds plus 1,000-foot setbacks around certain campgrounds. The Southcentral Alaska Subsistence Regional Advisory Council, ADF&G, Interagency Staff Committee and Office of Subsistence Management were all in opposition to this proposal due to potential of lost subsistence opportunity and regulatory confusion. While this proposal received 25 written public comments in support of the action, the Board rejected this proposal on the consensus agenda.

In March 2023, at the Southcentral Region BOG meeting in Soldotna, the BOG considered numerous trap setback proposals. Proposals 145–153 included trap setbacks at various locations throughout Units 7 and 15. While most of these proposals did not pass, three were adopted by the BOG. Amended Proposal 145 made it illegal to hunt and trap within one-quarter mile of wildlife crossings along the Sterling Highway. Amended Proposals 146 and 149 established trap setbacks along certain trails within Kachemak Bay State Park and along the perimeter of campgrounds in Unit 7, respectively. Setback distance was set at 50 yards unless the trap was elevated at least 3 feet above the ground, under water, under ice, or enclosed.

### **Effects of the Proposal**

If this proposal is adopted, clarification would be provided in codified Federal regulations that federally qualified subsistence users trapping under Federal regulations on Federal public lands in Units 7 and 14C are exempt from the trapping closures established by the Municipality of Anchorage Ordinance AO 2019-050(S). Functionally, this would have no effect on subsistence users or wildlife populations as State and municipal regulations do not apply to federally qualified subsistence users taking fish or wildlife on Federal public lands under Federal regulations. However, adoption of this proposal could reduce user confusion by explicitly clarifying this exemption.

### **OSM PRELIMINARY CONCLUSION**

**Oppose** Proposal WP24-07.

## **Justification**

OSM opposes this proposal because the ordinance passed by the Anchorage assembly does not apply to Federal public lands. Therefore, federally qualified subsistence users trapping under Federal regulations are currently exempt from this ordinance.

## **LITERATURE CITED**

ADF&G. 2015. Meeting audio. Alaska Board of Game Southcentral Region meeting, March 13-18, 2015. Alaska Department of Fish and Game. Alaska Board of Game meeting information.

<http://www.adfg.alaska.gov/index.cfm?adfg=gameboard.meetinginfo&date=03-13-2015&meeting=anchorage>.

Accessed June 2, 2021.

ADF&G. 2016. Meeting audio. Alaska Board of Game Statewide Regulations, Cycles A&B meeting, March 18-28, 2016. Alaska Department of Fish and Game. Alaska Board of Game meeting information.

<http://www.adfg.alaska.gov/index.cfm?adfg=gameboard.meetinginfo&date=03-18-2016&meeting=fairbanks>.

Accessed June 2, 2021.

FSB. 2020. Transcripts of Federal Subsistence Board proceedings. April 21, 2020. Office of Subsistence Management, USFWS. Anchorage, AK.

Municipality of Anchorage. 2019. Assembly Agenda. Regular Meeting, May 07, 2019. chrome-

extension://efaidnbmnnnibpcajpcglclefindmkaj/https://meetings.muni.org/AgendaOnline/Documents/ViewDocument/Assembly\_-

\_Regular\_822\_Agenda\_Packet\_5\_7\_2019\_5\_00\_00\_PM.pdf?meetingId=822&documentType=AgendaPacket&itemId=0&publishId=0&isSection=false. 480 pp. Retrieved May 18, 2023.

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## ANNUAL REPORTS

### **Background**

ANILCA established the Annual Reports as the way to bring regional subsistence uses and needs to the Secretaries' attention. The Secretaries delegated this responsibility to the Board. Section 805(c) deference includes matters brought forward in the Annual Report.

The Annual Report provides the Councils an opportunity to address the directors of each of the four Department of Interior agencies and the Department of Agriculture Forest Service in their capacity as members of the Federal Subsistence Board. The Board is required to discuss and reply to each issue in every Annual Report and to take action when within the Board's authority. In many cases, if the issue is outside of the Board's authority, the Board will provide information to the Council on how to contact personnel at the correct agency. As agency directors, the Board members have authority to implement most of the actions which would effect the changes recommended by the Councils, even those not covered in Section 805(c). The Councils are strongly encouraged to take advantage of this opportunity.

### **Report Content**

Both Title VIII Section 805 and 50 CFR §100.11 (Subpart B of the regulations) describe what may be contained in an Annual Report from the councils to the Board. This description includes issues that are not generally addressed by the normal regulatory process:

- an identification of current and anticipated subsistence uses of fish and wildlife populations within the region;
- an evaluation of current and anticipated subsistence needs for fish and wildlife populations from the public lands within the region;
- a recommended strategy for the management of fish and wildlife populations within the region to accommodate such subsistence uses and needs related to the public lands; and
- recommendations concerning policies, standards, guidelines, and regulations to implement the strategy.

Please avoid filler or fluff language that does not specifically raise an issue of concern or information to the Board.

### **Report Clarity**

In order for the Board to adequately respond to each Council's annual report, it is important for the annual report itself to state issues clearly.

- If addressing an existing Board policy, Councils should please state whether there is something unclear about the policy, if there is uncertainty about the reason for the policy, or if the Council needs information on how the policy is applied.
- Council members should discuss in detail at Council meetings the issues for the annual report and assist the Council Coordinator in understanding and stating the issues clearly.

## *Annual Report Briefing*

- Council Coordinators and OSM staff should assist the Council members during the meeting in ensuring that the issue is stated clearly.

Thus, if the Councils can be clear about their issues of concern and ensure that the Council Coordinator is relaying them sufficiently, then the Board and OSM staff will endeavor to provide as concise and responsive of a reply as is possible.

### **Report Format**

While no particular format is necessary for the Annual Reports, the report must clearly state the following for each item the Council wants the Board to address:

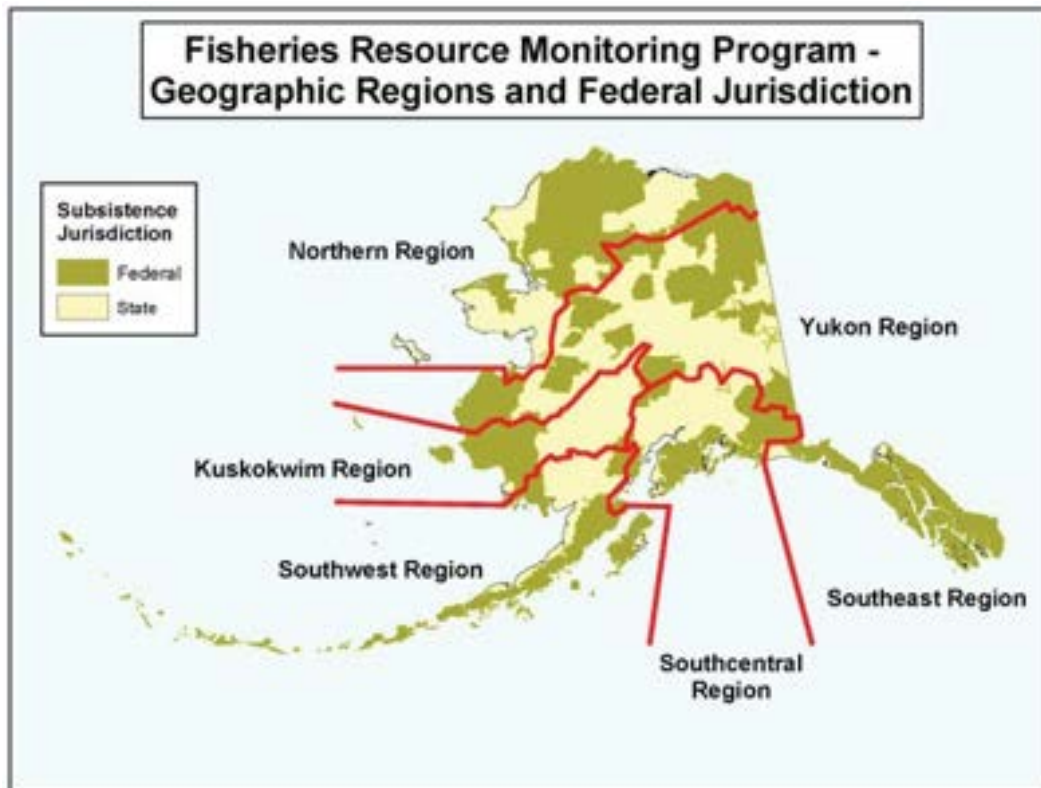
1. Numbering of the issues,
2. A description of each issue,
3. Whether the Council seeks Board action on the matter and, if so, what action the Council recommends, and
4. As much evidence or explanation as necessary to support the Council's request or statements relating to the item of interest.

## FISHERIES RESOURCE MONITORING PROGRAM

### INTRODUCTION

The Fisheries Resource Monitoring Program (Monitoring Program) is a collaborative, interagency, interdisciplinary approach to enhance fisheries research and data in Alaska and effectively communicate information needed for subsistence fisheries management on Federal public lands and waters. In 1999, the Federal government assumed responsibility for management of subsistence fisheries on Federal public lands and waters in Alaska. Section 812 of the Alaska National Interest Lands Conservation Act (ANILCA) directs the Departments of the Interior and Agriculture to research fish and wildlife subsistence uses on Federal public lands and waters and to seek data from, consult with, and incorporate knowledge of rural residents engaged in subsistence. The Secretaries of the Interior and Agriculture are committed to increasing the quantity and quality of information available to manage subsistence fisheries; meaningful involvement by federally-recognized tribes and Alaska Native and rural organizations; and, collaboration among Federal, State, Alaska Native, and rural organizations.

Every two years, the Office of Subsistence Management announces a notice of funding opportunity for investigation plans addressing subsistence fisheries on Federal public lands. The Monitoring Program is administered through regions to align with stock, harvest, and community issues common to a geographic area. There are six distinct Monitoring Program regions (**Figure 1**) as well as a multi-region category for projects that encompass more than one region.



**Figure 1.** Geographic regions of the Fisheries Resource Monitoring Program in Alaska.

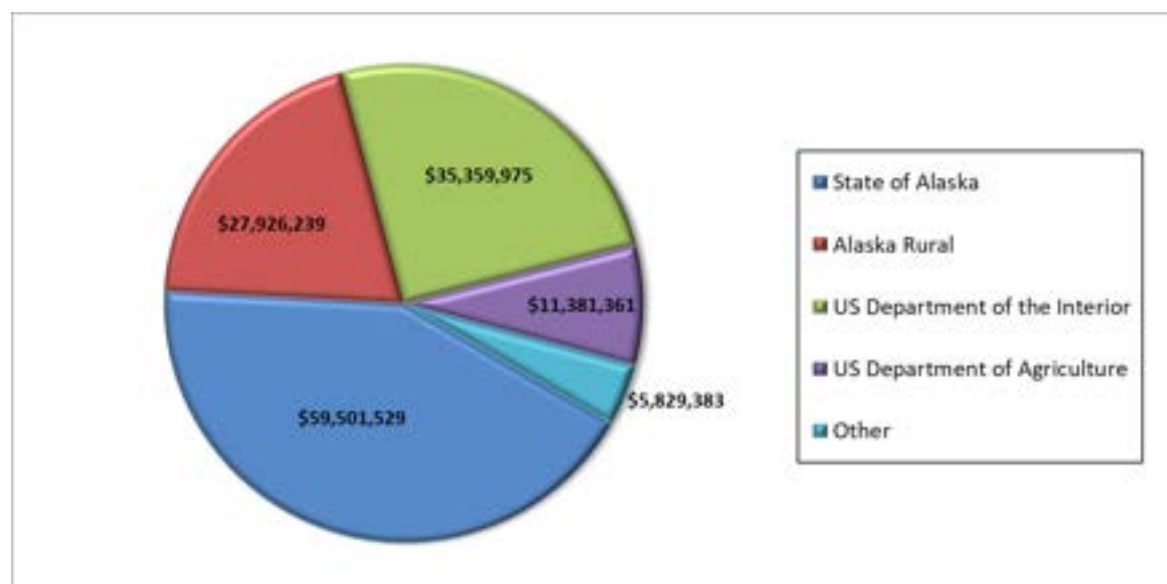


During each two-year funding cycle, the Monitoring Program funds ongoing projects from the previous cycle (projects may be 1–4 years in duration) as well as new projects. Funding allocation guidelines are established by geographic region (**Table 1**). The regional guidelines were developed using six criteria that included level of risk to species, level of threat to conservation units, amount of subsistence needs not being met, amount of information available to support subsistence management, importance of a species to subsistence harvest, and level of user concerns regarding subsistence harvest. Funding allocation guidelines provide an initial target for planning; however, they are not final and are adjusted annually as needed.

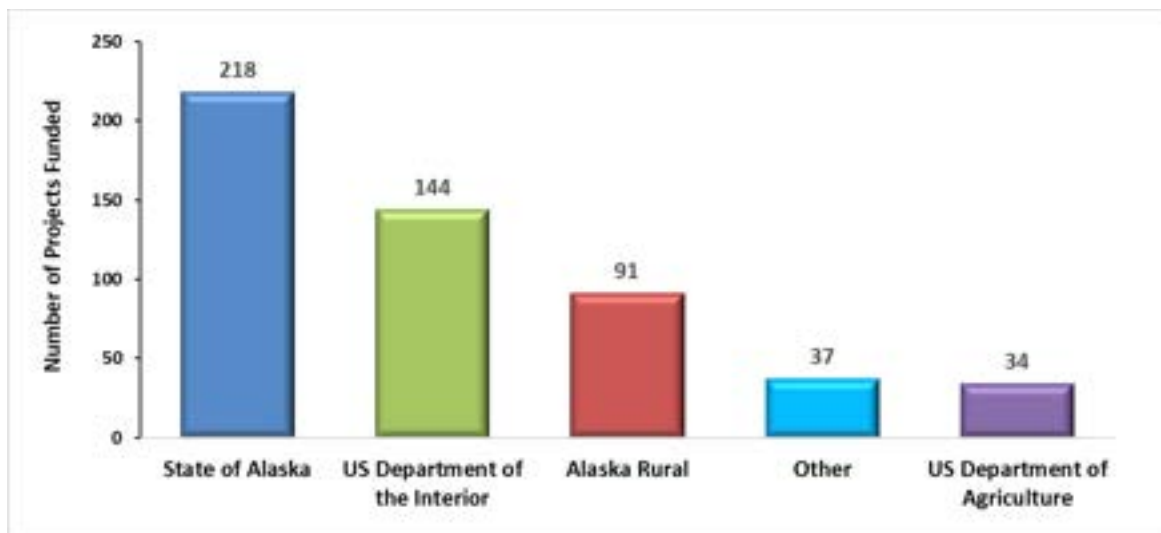
**Table 1.** Regional allocation guideline for Fisheries Resource Monitoring Program Funds.

Region	U.S. Department of the Interior Funds	U.S. Department of Agriculture Funds
Northern Alaska	17%	0%
Yukon Drainage	29%	0%
Kuskokwim Drainage	29%	0%
Southwest Alaska	15%	0%
Southcentral Alaska	5%	33%
Southeast Alaska	0%	67%
Multi-Regional	5%	0%

The Monitoring Program was first implemented in 2000 with an initial allocation of \$5 million. Since 2000, a total of \$139.9 million has been allocated for the Monitoring Program to fund a total of 524 projects (**Figure 2** and **Figure 3**).



**Figure 2.** Monitoring Program fund distribution since 2000, identified by primary recipient organization type.



**Figure 3.** Number of Monitoring Program projects funded since 2000, listed by primary recipient organization type.

The three broad categories of information solicited by the Monitoring Program are (1) harvest monitoring, (2) traditional ecological knowledge, and (3) stock status and trends. Projects that combine these approaches are encouraged.

**Harvest monitoring** studies provide information on numbers and species of fish harvested, locations of harvests, and gear types used. Methods used to gather information on subsistence harvest patterns may include harvest calendars, mail-in questionnaires, household interviews, subsistence permit reports, and telephone interviews.

**Traditional ecological knowledge** studies are investigations of local knowledge directed at collecting and analyzing information on a variety of topics such as the sociocultural aspects of subsistence, fish ecology, species identification, local names, life history, taxonomy, seasonal movements, harvests, spawning and rearing areas, population trends, environmental observations, and traditional management systems. Methods used to document traditional ecological knowledge include ethnographic fieldwork, key respondent interviews with local experts, place name mapping, and open-ended surveys.

**Stock status and trends** studies provide information on abundance and run timing, age-sex-length composition, migration and geographic distribution, survival of juveniles or adults, stock production, genetic stock identification, and mixed stock analyses. Methods used to gather information on stock status and trends include aerial and ground surveys, test fishing, towers, weirs, sonar, video, genetics, mark-recapture, and telemetry.

## PROJECT EVALUATION PROCESS

The Monitoring Program prioritizes high quality projects that address critical subsistence and conservation concerns. Projects are selected for funding through an evaluation and review process that is designed to advance projects that are strategically important for the Federal Subsistence Management Program, technically sound, administratively competent, promote partnerships and capacity building, and

are cost effective. Proposed projects are first evaluated by a panel called the Technical Review Committee. The Technical Review Committee's function is to provide evaluation, technical oversight, and strategic direction to the Monitoring Program. This committee is a standing interagency committee of senior technical experts that reviews, evaluates, and makes recommendations about proposed projects that are consistent with the mission of the Monitoring Program. Recommendations from the Technical Review Committee provide the basis for further comments from Subsistence Regional Advisory Councils, the public, the Interagency Staff Committee, and the Federal Subsistence Board, with final approval of the Monitoring Plan by the Assistant Regional Director of the Office of Subsistence Management.

To be considered for funding under the Monitoring Program, a proposed project must have a nexus to Federal subsistence fishery management. Proposed projects must have a direct association to a Federal subsistence fishery, and the subsistence fishery or fish stocks in question must occur in or pass-through waters within or adjacent to Federal public lands in Alaska (National Wildlife Refuges, National Forests, National Parks and Preserves, National Conservation Areas, National Wild and Scenic River Systems, National Petroleum Reserves, and National Recreation Areas). A complete project package must be submitted on time and must address the following five specific criteria.

1. **Strategic Priorities**—Studies should be responsive to information needs identified in the 2024 Priority Information Needs available at the Monitoring Program webpage at <https://www.doi.gov/subsistence/frmp/funding>. All projects must have a direct linkage to Federal public lands and/or waters to be eligible for funding under the Monitoring Program. Projects should address the following topics to demonstrate links to strategic priorities:

- Federal jurisdiction—The extent of Federal public waters in or nearby the project area
- Direct subsistence fisheries management implications
- Conservation mandate—Threat or risk to conservation of species and populations that support subsistence fisheries
- Potential impacts on the subsistence priority—Risk that subsistence harvest users' goals will not be met
- Data gaps—Amount of information available to support subsistence management and how a project answers specific questions related to these gaps
- Role of the resource—Contribution of a species to a subsistence harvest (number of villages affected, pounds of fish harvested, miles of river) and qualitative significance (cultural value, unique seasonal role)
- Local concern—Level of user concerns over subsistence harvests (upstream vs. downstream allocation, effects of recreational use, changes in fish abundance and population characteristics)

To assist in evaluation of submittals for projects previously funded under the Monitoring Program, investigators must summarize project findings in their investigation plans. This

summary should clearly and concisely document project performance, key findings, and uses of collected information for Federal subsistence management. It should also justify the continuation of the project, placing the proposed work in context with the ongoing work being accomplished.

2. **Technical-Scientific Merit**—Technical quality of the study design must meet accepted standards for information collection, compilation, analysis, and reporting. To demonstrate technical and scientific merit, applicants should describe how projects will:

- Advance science
- Answer immediate subsistence management or conservation concerns
- Have rigorous sampling and/or research designs
- Have specific, measurable, realistic, clearly stated, and achievable (attainable within the proposed project period) objectives
- Incorporate traditional knowledge and methods

Data collection, compilation, analysis, and reporting procedures should be clearly stated. Analytical procedures should be understandable to the non-scientific community.

3. **Investigator Ability and Resources**—Investigators must show they are capable of successfully completing the proposed project by providing information on the ability (training, education, experience, and letters of support) and resources (technical and administrative) they possess to conduct the work. Investigators that have received funding in the past, via the Monitoring Program or other sources, are evaluated and scored on their past performance, including fulfillment of meeting deliverable and financial accountability deadlines. A record of failure to submit reports or delinquent submittal of reports will be considered when rating investigator ability and resources.

4. **Partnership and Capacity Building**—Investigators must demonstrate that capacity building has already reached the communication or partnership development stage during proposal development and, ideally, include a strategy to develop capacity building to higher levels, recognizing, however, that in some situations higher level involvement may not be desired or feasible by local organizations.

Investigators are requested to include a strategy for integrating local capacity development in their study plans or research designs. Investigators should inform communities and regional organizations in the area where work is to be conducted about their project plans. They should also consult and communicate with local communities to ensure that local knowledge is used and concerns are addressed. Investigators and their organizations should demonstrate their ability to maintain effective local relationships and commitment to capacity building. This includes a plan to facilitate and develop partnerships so that investigators, communities, and regional organizations can pursue and achieve the most meaningful level of involvement. Proposals

demonstrating multiple, highly collaborative efforts with rural community members or Alaska Native Organizations are encouraged.

Successful capacity building requires developing trust and dialogue among investigators, local communities, and regional organizations. Investigators need to be flexible in modifying their work plan in response to local knowledge, issues, and concerns, and must also understand that capacity building is a reciprocal process in which all participants share and gain valuable knowledge. The reciprocal nature of the capacity building component(s) should be clearly demonstrated in proposals. Investigators are encouraged to develop the highest level of community and regional collaboration that is practical including joining as co-investigators.

Capacity can be built by increasing the technical capabilities of rural communities and Alaska Native organizations. This can be accomplished via several methods, including increased technical experience for individuals and the acquisition of necessary gear and equipment. Increased technical experience would include all areas of project management including logistics, financial accountability, implementation, and administration. Other examples may include internships or providing opportunities within the project for outreach, modeling, sampling design, or project specific training. Another would be the acquisition of equipment that could be transferred to rural communities and tribal organizations upon the conclusion of the project.

A “meaningful partner” is a partner that is actively engaged in one or more aspects of project design, logistics, implementation, and reporting requirements. Someone who simply agrees with the concept or provides a cursory look at the proposal is not a meaningful partner.

5. **Cost/Benefit**—This criterion evaluates the reasonableness (what a prudent person would pay) of the funding requested to provide benefits to the Federal Subsistence Management Program. Benefits could be tangible or intangible. Examples of tangible outcomes include data sets that directly inform management decisions or fill knowledge gaps and opportunities for youth or local resident involvement in monitoring, research, and/or resource management efforts. Examples of possible intangible goals and objectives include enhanced relationships and communications between managers and communities, partnerships and collaborations on critical resource issues, and potential for increased capacity within both communities and agencies.

Applicants should be aware that the Government shall perform a “best value analysis” and the selection for award shall be made to the applicant whose proposal is most advantageous to the Government. The Office of Subsistence Management strives to maximize program efficiency by encouraging cost sharing, partnerships, and collaboration.

## **POLICY AND FUNDING GUIDELINES**

Several policies have been developed to aid in implementing funding. These policies include:

- Projects of up to four years in duration may be considered

## *2024 Fisheries Resource Monitoring Program Overview*

- Proposals requesting Monitoring Program funding that exceeds \$235,000 in any one year are not eligible for funding
- Studies must not duplicate existing projects
- Long term projects will be considered on a case-by-case basis

Activities that are not eligible for funding include:

- Habitat protection, mitigation, restoration, and enhancement
- Hatchery propagation, restoration, enhancement, and supplementation
- Contaminant assessment, evaluation, and monitoring
- Projects where the primary or only objective is outreach and education (for example, science camps, technician training, and intern programs), rather than information collection

The rationale behind these policy and funding guidelines is to ensure that existing responsibilities and efforts by government agencies are not duplicated under the Monitoring Program. Land management or regulatory agencies already have direct responsibility, as well as specific programs, to address these activities. However, the Monitoring Program may fund research to determine how these activities affect Federal subsistence fisheries or fishery resources.

The Monitoring Program may fund assessments of key Federal subsistence fishery stocks in decline or that may decline due to climatological, environmental, habitat displacement, or other drivers; however, applicants must show how this knowledge would contribute to Federal subsistence fisheries management. Similarly, the Monitoring Program may legitimately fund projects that assess whether migratory barriers (e.g., falls, beaver dams) significantly affect spawning success or distribution; however, it would be inappropriate to fund projects to build fish passes, remove beaver dams, or otherwise alter or enhance habitat.

### **2024 NOTICE OF FUNDING OPPORTUNITY**

The 2024 Notice of Funding Opportunity focused on priority information needs developed by the Subsistence Regional Advisory Councils with input from subject matter specialists. Investigation plans were due in February 2023. Submitted plans were reviewed and evaluated by the Office of Subsistence Management and U.S. Forest Service staff, and then scored by the Technical Review Committee. Each investigation plan was scored on the following five criteria: strategic priority, technical and scientific merit, investigator ability and resources, partnership and capacity building, and cost/benefit.

### **2024 FISHERIES RESOURCE MONITORING PLAN**

A Fisheries Resource Monitoring Plan is developed during each Monitoring Program cycle that provides an overview of the process, the submitted materials, and the final list of funded projects. The 2024

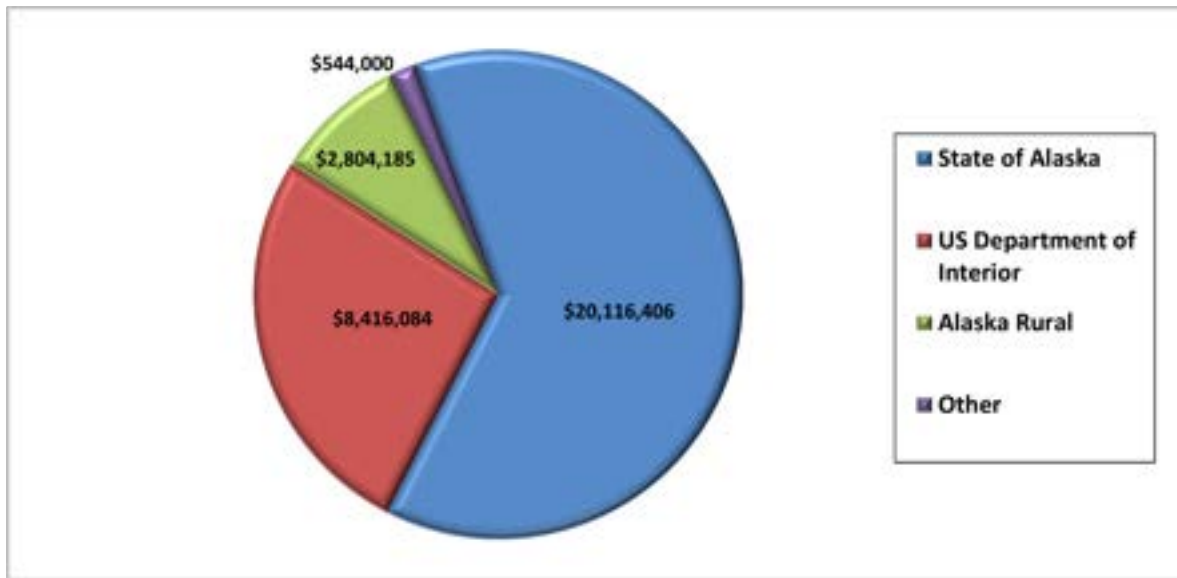
## *2024 Fisheries Resource Monitoring Program Overview*

Fisheries Resource Monitoring Plan will include regional overviews and comments from Regional Advisory Councils and the Interagency Staff Committee. Regional Overviews for each of the seven Monitoring Program regions contain area specific background information as well as the 2024 Technical Review Committee justifications and project executive summaries specific to those regions. The Regional Overviews are distributed for comment through Subsistence Regional Advisory Council meetings, beginning in September 2023. Regional Advisory Council comments are recorded and included in the draft 2024 Fisheries Resource Monitoring Plan that will be forwarded to the Interagency Staff Committee for their comments and finally to the Federal Subsistence Board.

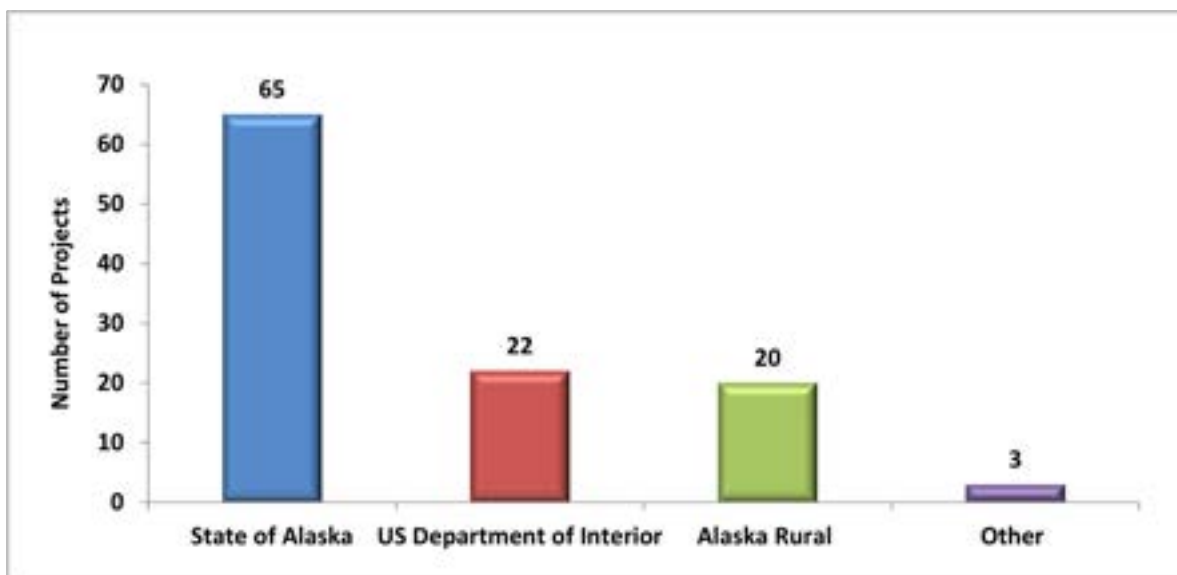
The draft 2024 Fisheries Resource Monitoring plan will be presented to the Federal Subsistence Board at their January/February 2024 public meeting. The Board will review the draft plan and will forward their comments and recommendations to the Assistant Regional Director of the Office of Subsistence Management. Final project selection and funding approval lie with the Assistant Regional Director of the Office of Subsistence Management. For this funding cycle, a total of 26 investigation plans were received and 25 were considered eligible for funding. Investigators are expected to be notified in writing of the status of their proposals by late spring or early summer 2024.

### FISHERIES RESOURCE MONITORING PROGRAM KUSKOKWIM REGION OVERVIEW

Since the inception of the Fisheries Resource Monitoring Program (Monitoring Program) in 2000, a total of 110 projects have been funded in the Kuskokwim Region at a cost of \$31.8 million (**Figure 1**). The State of Alaska has had the most projects funded in the region, followed by the U.S. Department of the Interior agencies, Alaska rural organizations, and other organizations (**Figure 2**). See **Appendix 1** for more information on Kuskokwim Region projects completed since 2000 and a list of all organizations that have received funding through the Monitoring Program.



**Figure 1.** Monitoring Program fund distribution since 2000 in the Kuskokwim Region.



**Figure 2.** Number of Monitoring Program projects funded since 2000 in the Kuskokwim Region.



## PRIORITY INFORMATION NEEDS

The 2024 Notice of Funding Opportunity for the Kuskokwim Region contained the following five priority information needs developed by the Yukon-Kuskokwim Delta and Western Interior Regional Advisory Councils:

- Impacts of climate change in continued harvest and use of fish and impacts of climate change on fish, for example migration, spawning, life cycle, and abundance.
- Knowledge of whitefish and Sheefish population abundance and distribution within the Kuskokwim River watershed (including in-season harvest and monitoring).
- Reliable quantitative and/or qualitative estimates of salmon run size, escapement, and harvest in the entire Kuskokwim River watershed including Kuskokwim Bay tributaries.
- Explore new and cost-effective methods for conducting in-season salmon run and harvest assessments in the Kuskokwim River drainage, with an emphasis on community-based monitoring.
- Distribution, abundance, condition, and survival of juvenile and out-migrating salmon in the Kuskokwim River drainage.

## 2024 MONITORING PLAN DEVELOPMENT FOR THE KUSKOKWIM REGION

For the 2024 Monitoring Plan, nine proposals were submitted for the Kuskokwim Region (**Table 1**).

**Table 1.** Projects submitted for the Kuskokwim Region, 2024 Monitoring Plan, including project duration in years and total funds requested.

Project Number	Title	Project Duration (Years)	Total Project Request
24-300	Goodnews River Salmon Escapement Monitoring	4	\$744,096
24-301	Kuskokwim River Coho Salmon and Whitefish Abundance Estimation using Sonar and Apportionment Fishing	4	\$537,939
24-302	Salmon River of the Pitka Fork Chinook Salmon Escapement Monitoring	4	\$430,453
24-303	Middle Kuskokwim Chinook and Chum Salmon In-season Assessment	4	\$459,109
24-304	Estimating Kuskokwim River Sockeye Salmon Abundance Using Genetic Mark-Recapture Methodology	1	\$81,145
24-305	Monitoring Salmon Abundance in the Salmon River, Southwestern Alaska	4	\$61,020

Project Number	Title	Project Duration (Years)	Total Project Request
24-308	Kwethluk River Run Timing and Abundance	4	\$897,248
24-350	Local and Indigenous Knowledge of Whitefishes, Including Sheefish, in a Changing Climate, Kuskokwim River	4	\$389,776
24-351	Climate Change and Impacts on Subsistence Fisheries in the Kuskokwim Management Area	4	\$294,300
<b>Total</b>			<b>\$3,600,786</b>

### EXECUTIVE SUMMARIES AND TECHNICAL REVIEW COMMITTEE JUSTIFICATIONS

The following executive summaries were written by the principal investigators and submitted to the Office of Subsistence Management as part of a proposal package. It may not reflect the opinions of the Office of Subsistence Management or the Technical Review Committee. The executive summaries may have been altered for length.

Technical Review Committee justifications are a general description of the committee’s assessment of proposals when examining them for strategic priority, technical and scientific merit, investigator ability and resources, partnership and capacity building, and cost/benefit. More in-depth reviews are provided to investigators following project selection.

#### Investigator Submitted Executive Summary:

<b>Project Number:</b>	24-300			
<b>Title:</b>	Goodnews River Salmon Escapement Monitoring			
<b>Geographic Region:</b>	Kuskokwim Region			
<b>Data Types:</b>	Stock Status and Trends			
<b>Principal Investigator:</b>	Nick Smith, Alaska Department of Fish and Game (ADF&G)			
<b>Co-investigator:</b>	Jonathan T. Cawfield, U.S. Fish and Wildlife Service, Togiak National Wildlife Refuge; Bobette R. Dickerson, ADF&G			
<b>Project Request:</b>	<b>2024:</b> \$234,791	<b>2025:</b> \$181,907	<b>2026:</b> \$189,724	<b>2027:</b> \$137,674
<b>Total Request:</b>	\$744,096			

**Issue:** This project relates to the following priority information need identified in the 2022 Office of Subsistence Management (OSM) Request for Proposals:

- *Reliable quantitative and/or qualitative estimates of salmon run size, escapement, and harvest in the entire Kuskokwim River watershed including Kuskokwim Bay tributaries.*

This project restores operations of a weir on the Middle Fork Goodnews River to index Chinook, Chum, Sockeye, and Coho salmon escapement to the Goodnews River drainage, while also conducting a school outreach program to build local capacity and interest in fisheries. This project would reinstate a 27-year dataset used to evaluate the size, composition and trends of Chinook, Chum, Sockeye, and Coho salmon escapement to a tributary of the Goodnews River. This project also includes a community outreach program with the Rocky Mountain School in the community of Goodnews Bay, AK, to foster community awareness, understating, interest, and involvement of students in the fisheries monitoring program on the Goodnews River.

**Objectives:** The goal is to resume operations of a ground-based monitoring project that will adequately index escapement to the Goodnews River. The following objectives will be executed to achieve this goal.

- 1) Estimate the daily and total annual Chinook, Sockeye, Chum, and Coho salmon escapements from 25 June to 18 September, annually from 2024–2027.
- 2) Collect age, sex, and length (ASL) data from Chinook, Sockeye, Chum, and Coho salmon using weir traps, such that the number of samples collected will allow for future estimates of age composition with 95% confidence intervals no wider than  $\pm 10\%$  ( $\alpha=0.05$ ,  $d=0.10$ ).
- 3) Foster local interest in natural resource management, field biology, and expose students to employment and post-secondary education possibilities.

**Methods:** We propose to restore operations of a weir on the Middle Fork Goodnews River to index Chinook, Chum, Sockeye, and Coho salmon escapement to the Goodnews River drainage from 25 June–18 September during all years of the project. Fish will be counted throughout the daytime by trained technicians. Visual counts will take place through a clear plastic viewing window placed on the stream surface. Age, sex, and length data will be collected in proportion to run timing using live fish trap that is integrated into the weir design. The crew will record daily fish passage numbers of each salmon species in field logs and report the information to ADF&G staff in Bethel. Data will be made publicly available through the Arctic Yukon Kuskokwim Database Management System, and inseason data summaries will be provided to ADF&G, U.S. Fish and Wildlife Service (USFWS), and stakeholder fishery management advisory groups. We will estimate any missed escapement of salmon that occurs within the target operational period (generally due to high water or scouring) using hierarchical Bayesian estimation technique. ADF&G staff will be responsible for maintaining the information physically and electronically in tabular and graphical formats for the use of various managers and advisory groups engaged in inseason management. In addition, escapement counts and estimates will be updated daily in the Arctic Yukon Kuskokwim Database Management System and ADF&G Fish Counts Page.

**Partnerships/Collaboration:** The Middle Fork Goodnews River weir project will be operated cooperatively by ADF&G and the USFWS Togiak National Wildlife Refuge (TNWR). The project will be staffed by two ADF&G Fish and Wildlife Technicians and one local hire USFWS Fisheries Technician throughout project operations. ADF&G is responsible for all aspects of weir operations, including staff support, logistical support, data processing, data analysis, and reporting. TNWR is responsible for providing staff to assist inseason at the project, logistical guidance, and insight, and assist with

community outreach. Working in collaboration will provide an avenue to improve community outreach and further engage Goodnews Bay communities. Planned outreach includes presentations on the purpose and operation of the weir at the Rocky Mountain School in Goodnews Bay, AK. In addition, an ADF&G biologist will present a hands-on exercise that walks students through the salmon life cycle.

**Technical Review Justification:** This project resurrects the Goodnews River weir project that has not operated since 2020. Operation of the weir will benefit management of salmon on the Goodnews River and serve as a regional monitoring site at a time of highly variable salmon returns along Western Alaska. This long-term weir operation will assess run strength and escapement monitoring that have proven challenging or unattainable under the current aerial assessments. This project will also collect age, sex, and length data with the intent to further estimate future estimates of age compositions. This project directly addresses a priority information need listed in the 2024 Notice of Funding Opportunity for the Kuskokwim Region. The investigators have the necessary background and experience operating weirs. A local hire will assist with the project on daily weir operation, as well as assist with educational and outreach efforts at the Rocky Mountain School. Letters of support from surrounding stakeholders indicated high support for the project. The cost of the project is reasonable considering the remoteness of the work to be conducted and staffing needed.

**Investigator Submitted Executive Summary:**

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<b>Project Number:</b>	24-301			
<b>Title:</b>	Kuskokwim River Coho Salmon and Whitefish Abundance Estimation Using Sonar and Apportionment Fishing			
<b>Geographic Region:</b>	Kuskokwim			
<b>Data Types:</b>	Stock Status and Trends			
<b>Principal Investigator:</b>	Keegan O. Birchfield, Alaska Department of Fish and Game (ADF&G)			
<b>Co-investigator:</b>	Vacant, Orutsararmiut Native Council, Sean D. Larson and Carl T. Pfisterer, ADF&G			
<b>Project Request:</b>	<b>2024:</b> \$128,705	<b>2025:</b> \$132,379	<b>2026:</b> \$136,479	<b>2027:</b> \$140,374
<b>Total Request:</b>	\$537,939			

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**Issue:** This project relates to the following priority information needs identified in the 2022 Office of Subsistence Management (OSM) Request for Proposals:

- *Reliable quantitative and/or qualitative estimates of salmon run size, escapement, and harvest in the entire Kuskokwim River watershed including Kuskokwim Bay.*
- *Knowledge of Whitefish and Sheefish population abundance and distribution within the Kuskokwim River watershed (including in-season harvest and monitoring).*

This project uses sonar and drift gillnet apportionment methods to estimate daily abundance of upriver migrating Coho Salmon and whitefish species in the Kuskokwim River during the month of August. In addition, we propose continuing drift gillnet apportionment operations through mid-September to estimate the proportion of the Coho Salmon and whitefish run that passes through the lower river after sonar operations end. Coho Salmon have suffered poor returns in the last 5 years with drainage

subsistence efforts falling short of amounts necessary for subsistence in 2018, 2021, and likely 2022 (a measure of subsistence need established by the State of Alaska Board of Fish in 1993 and last amended in 2013). Furthermore, 2022 marked one of the lowest Coho Salmon runs on record and triggered the first full river closure in August. Our proposal addresses multiple priority information needs and is consistent with ADF&G's strategic plan towards integrating a sonar-based assessment program within the current suite of Kuskokwim River assessment projects. Towards that goal, ADF&G has secured long-term funding for sonar operations, but the existing budget is only adequate to operate the project through the overlapping Chinook, Chum, and Sockeye salmon runs in June and July. Coho Salmon enter the Kuskokwim River beginning in late July, after the migration of other salmon species has all but ended. By the end of July, only a small portion of the Coho Salmon run has passed through the lower river, where most harvest occurs. Whitefish species including Least Cisco, Bering Cisco, Humpback Whitefish, Broad Whitefish, and Inconnu navigate the mainstem from mid-May to late September. This project was previously awarded a 4-year grant to conduct August sonar operations beginning in 2020. During this time, it was clear an unknown portion of Coho Salmon returned after the August 26 operational end date. To address the issue, ADF&G considered multiple scenarios and determined extending apportionment fishing to provide context for total run estimates was the most thorough method to describe coho salmon and whitefish species runs while remaining cost-effective and safe. Our request would continue annual sonar operation through August 26 to enumerate the Coho Salmon and whitefish run through most of August, then continue the apportionment fishery through September 17 annually to provide context for total run estimates and identify the full extent of the Coho Salmon and whitefish runs through the lower river. Coho Salmon escapement through August 26 is easily obtained by incorporating existing harvest estimate programs to sonar-based estimates of abundance.

**Objectives:** The primary goal of the Kuskokwim River sonar extension is to estimate daily passage of upriver migrating adult Coho Salmon and whitefish species near Bethel and provide those estimates to State fisheries managers inseason to inform sustainable fisheries management. The secondary goal of the Kuskokwim River sonar extension is to determine the proportion of Coho Salmon and whitefish passage that occurs after sonar operations ends to inform future efforts to expand sonar indices of coho salmon and whitefish abundance to estimates of total abundance. The State of Alaska already has long-term funding to operate the sonar program during June and July annually to assess the overlapping Chinook, Chum, and Sockeye salmon runs. This proposal seeks to continue project operations through August and apportionment fishing operations through mid-September, to meet the following specific objective:

1. Estimate the daily and total passage of Kuskokwim River Coho Salmon and whitefish species at rkm 130 between July 27 and August 26, 2024, 2025, 2026, and 2027 using sonar and an apportionment fishery.
2. Determine the proportion of Coho Salmon and whitefish species CPUE that occurs after sonar enumeration ends to inform future efforts to estimate total passage between August 27 and September 17, 2024, 2025, 2026, and 2027 using the apportionment fishery.

**Methods:** We propose to use sonar and drift gillnet apportionment methods on the mainstem Kuskokwim River just upriver from Bethel to estimate the daily number of adult Coho Salmon and whitefish species through August 26, then continue drift gillnet apportionment through September 17 to contextualize total passage estimates in 2024, 2025, 2026, and 2027. Sonar data files will be processed using software developed by ADF&G. A drift gillnet test fishery that overlaps the ensounded areas will be used to

apportion abundance estimates to species and provide ongoing CPUE estimates at the site. ADF&G Division of Commercial Fisheries staff will maintain all physical and electronic data to produce tabular and graphical summaries for use by State managers and the Kuskokwim River Salmon Management Working Group. Abundance estimates will be updated daily in the publicly accessible Arctic Yukon Kuskokwim Database Management System<sup>1</sup>.

Project results are expected to influence inseason management decisions by continuing to provide reliable daily estimates of coho salmon and whitefish abundance near the dominant fishery. In addition, extended apportionment fishing will likely provide context for passage estimates of migrating coho salmon and whitefish. This information will be used by managers within formal and informal decision-making frameworks to evaluate management options and execute the fishery. Final project results will be summarized in a written report.

**Partnerships/Capacity Building:** Staff from ADF&G and ONC will conduct this project in partnership. ADF&G is responsible for staff support, logistical support, data processing, reporting, and assisting with outreach opportunities. ONC is responsible for providing staff to assist inseason at the project, logistical insight, and assist with community outreach. Working in collaboration will provide an avenue to improve community outreach and further engage Kuskokwim River communities in Kuskokwim Area salmon research and management issues. This proposal seeks salary funds to facilitate this capacity building effort. From 2020–2022, outreach efforts were hampered by COVID-19, ONC technician availability due to school obligations, and ONC Partners Biologist availability. Despite these challenges, ONC technicians were able to present at two Kuskokwim River Salmon Monitoring Working Group meetings and one Regional Advisory Council meeting. In an attempt to improve ONC technician participation and presentation consistency, ONC technicians will be trained by ADF&G staff starting July 1 each year. ONC technicians will spend several days under the supervision of the PI or Fisheries Biologist 1 crew lead and joining ADF&G technicians to learn drift gillnet fishing, fish sampling, and sonar enumeration specific to this site. Once their training is complete, they will be incorporated into daily technician shifts to directly contribute to salmon and whitefish estimates of abundance. During the season, the PI will assist ONC technicians in adapting a sonar presentation to summarize their efforts for local stakeholder meetings. ONC has indicated participation in this partnership is contingent upon concurrent Partners Biologist Funding.

Fish harvested in the sonar apportionment fishery will be donated to local communities. From 2017 through 2022, ADF&G coordinated directly with community members near the test fish site and in the communities of Kwethluk and Bethel to distribute approximately 2,000 fish annually. Volunteers from local communities, enforcement officers, cooperative agencies, and the ADF&G Subsistence Division have delivered fish as far upriver as Tuluksak and as far downriver as Atmauhluak, but distant deliveries

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<sup>1</sup> Escapement Monitoring Inseason and Historical Data – Kuskokwim Management Area Commercial Salmon Fisheries. <https://www.adfg.alaska.gov/index.cfm?adfg=commercialbyareakuskokwim.emihd>

are extremely expensive and logistically difficult. We are continuing efforts to make more deliveries to the nearby communities of Akiachak and Akiak each year as well.

**Technical Review Justification:** Four years of funding are requested to continue operating the Kuskokwim River sonar project to provide a more complete assessment of Coho Salmon and whitefish in the drainage. Previous years of Monitoring Program funded sonar-based assessments have indicated the need for more coverage of the fall migrations of Coho Salmon and whitefish. This project extends the netting and apportionment methods beyond the time that the sonar is removed to provide a relative index of catch-per-unit-effort as well as run timing. This project directly addresses two priority information needs listed in the 2024 Notice of Funding Opportunity for the Kuskokwim Region and is consistent with Alaska Department of Fish and Game’s strategic plan towards integrating a sonar-based assessment program on the Kuskokwim River. The investigators have the necessary background, resources, and experience to successfully run and complete this project. Capacity is built through partnering with Orutsararmiut Native Council, who will provide a field technician to assist with daily sonar operation and gillnet apportionment. Project costs are considerable given the short duration of the field season. Letters of support were received from the manager of the Yukon Delta National Wildlife Refuge and the Orutsararmiut Native Council’s Natural Resource Director.

**Investigator Submitted Executive Summary:**

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<b>Project Number:</b>	24-302			
<b>Title:</b>	Salmon River of the Pitka Fork Chinook Salmon Escapement Monitoring			
<b>Geographic Region:</b>	Kuskokwim			
<b>Data Types:</b>	Stock Status and Trends			
<b>Principal Investigator:</b>	Bobette R. Dickerson, Alaska Department of Fish and Game (ADF&G)			
<b>Co-investigator:</b>	Sean Larson, ADF&G; Michele Christiansen, MTNT Energy LLC.; Timothy Barnum, MTNT Energy LLC.			
<b>Project Request:</b>	<b>2024:</b> \$148,876	<b>2025:</b> \$105,409	<b>2026:</b> \$108,061	<b>2027:</b> \$73,107
<b>Total Request:</b>	\$430,453			

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**Issue:** This project relates to the following priority information needs identified in the 2022 Office of Subsistence Management (OSM) Request for Proposals:

- *Reliable quantitative and/or qualitative estimates of salmon run size, escapement, and harvest in the entire Kuskokwim River watershed including Kuskokwim Bay.*

This project continues operations of a weir on the Salmon River of the Pitka Fork, hereafter referred to as Salmon (Pitka Fork) River, to index Chinook Salmon escapement to the headwaters of the Kuskokwim River, upriver from McGrath. The Salmon (Pitka Fork) River weir is currently the only ground-based salmon assessment project operated in the Kuskokwim River that indexes genetically distinct headwaters Chinook salmon.

**Objectives:** The goal is to continue operations of a ground-based monitoring project that will adequately index escapement to the headwaters of the Kuskokwim River. The following objectives will be executed to achieve this goal.

- 1) Estimate daily and total annual Chinook Salmon escapement to the Salmon (Pitka Fork) River using a fixed picket fish weir from 20 June–15 August.
- 2) Collect age, sex, length (ASL) data from 250 Chinook Salmon in proportion to abundance.
- 3) Coordinate with local schools in the communities of McGrath, Takotna and Nikolai to introduce salmon ecology concepts to rural students in grades K-12.

**Methods:** We propose to operate a weir on the Salmon River of the Pitka Fork to index Chinook Salmon escapement to the headwaters of the Kuskokwim River from 20 June–15 August throughout all years of the project. Fish will be counted throughout the daytime by trained technicians. Visual counts will take place through a clear plastic viewing window placed on the stream surface. Age, sex, and length data will be collected in proportion to run timing using live fish trap that is integrated into the weir design. The crew will record daily fish passage numbers of each salmon species in field logs and report the information to ADF&G staff in Bethel or Anchorage. We will estimate any missed escapement of Chinook salmon that occurs within the target operational period (generally due to high water or scouring) using hierarchical Bayesian estimation technique. ADF&G staff will be responsible for maintaining the information physically and electronically in tabular and graphical formats for the use of various managers and advisory groups engaged in inseason management. In addition, escapement counts, and estimates will be updated daily in the Arctic Yukon Kuskokwim Database Management System and ADF&G Fish Counts Page.

**Partnerships/Capacity Building:** Staff from ADF&G and MTNT will conduct this project in partnership. ADF&G will be responsible for staff support, logistical support, data processing, reporting, and assisting with outreach opportunities. MTNT will be responsible for providing staff to assist inseason at the project, logistical guidance, and insight, and assist with community outreach. Working in collaboration will provide an avenue to improve community outreach and further engage headwaters communities of McGrath, Takotna, and Nikolai in Kuskokwim Area salmon research and management issues. Planned outreach includes presentations on the purpose and operation of the weir to the schools in McGrath, Nikolai, and Takotna. In addition, the weir crew presents a hands-on exercise that walks students through the salmon life cycle.

**Technical Review Justification:** Four years of funding are requested to continue operating the Pitka Fork weir to index Chinook Salmon escapement to the upper Kuskokwim River drainage. The Federal nexus is clear, and the project addresses a 2024 Priority Information Need for the Kuskokwim Region. The weir monitors the most abundant headwater stock of Chinook Salmon, making it an important component of the tributary escapement monitoring program. Project data are not currently used in the run-reconstruction model but may be in the future if more years of data are collected. The project objectives are clear, measurable, and achievable, and the study design is technically sound. The investigators have the experience necessary to complete this project. Capacity will be built by hiring a local to help operate the weir and present about the project and salmon ecology to schools in McGrath, Nikolai, and Takotna. Project costs are reasonable for the proposed work. Letters of support were received from the Yukon Delta National Wildlife Refuge, Native Village of Napaimute, and Iditarod Area School District.

**Investigator Submitted Executive Summary:**



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<b>Project Number:</b>	24-303
<b>Title:</b>	Middle Kuskokwim River Chinook and Chum Salmon In-Season Assessment
<b>Geographic Region:</b>	Kuskokwim
<b>Data Types:</b>	Stock Status and Trends
<b>Principal Investigator:</b>	Dan Gillikin, Native Village of Napaimute
<b>Project Request:</b>	<b>2024:</b> \$120,631 <b>2025:</b> \$112,826 <b>2026:</b> \$112,826 <b>2027:</b> \$112,826
<b>Total Request:</b>	\$459,109

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**Issue:** This project relates to the following priority information needs identified in the 2022 Office of Subsistence Management (OSM) Request for Proposals:

- *Reliable quantitative and/or qualitative estimates of salmon run size, escapement, and harvest in the entire Kuskokwim River watershed including Kuskokwim Bay.*

The Kuskokwim River supports the largest subsistence salmon fishery in the state of Alaska, based on both the number of residents who participate in the fishery and the number of salmon harvested. Customary and traditional use determinations have been made for the 32 communities (comprised of 14,739 people living in 4,266 households) in the Kuskokwim River drainage.

Kuskokwim River Chinook Salmon stocks have been in a period of low productivity since 2007, requiring managers to enact significant fishing restrictions to meet established escapement goals. The proposed projects (Aniak Test Fishery and Salmon River Weir) will provide Fisheries Managers (State and Federal) with timely in-season information for determining the needed to restrict or liberalize harvest opportunity. Biological and escapement information will provide for the conservation and sustainability of Chinook and Chum salmon stocks.

**Objectives:** The following objectives will be executed to achieve this goal.

Specific primary objectives for the Aniak Test Fishery (ATF) are:

1. Calculate a daily catch per unit effort (CPUE) of adult salmon June 1–July 15.
2. Calculate cumulative CPUE as an index of run timing of adult salmon species.
3. Calculate a daily ratio of each salmon species as an index of relative abundance.
4. Build tribal capacity to participate in future fisheries assessment projects.

Specific primary objectives for the Salmon River Weir (SRW) operations are:

1. Operate and maintain an adult salmon counting weir and field camp on the Salmon River July 1–August 15.
2. Estimate daily and total season escapement of salmon into the Salmon River for Chinook and Chum salmon, within a 95% confidence interval.
3. Collect data on the age, sex, and length of salmon in the Salmon River.

4. Build tribal capacity to participate in future fisheries assessment projects.

Specific primary objectives related to Capacity Building (CAP) are:

1. Recruit, hire and train Tribal Members for the proposed assessment projects.
2. Provide at least one Internship opportunity annually for the ATF and or SRW projects.
3. Procure necessary supplies identified in the budget to implement the assessment projects.
4. Conduct outreach activities related to the projects with local stakeholders.

Methods: The Native Village of Napaimute is seeking funding from the FRMP Program to continue operating two critical in-season salmon fisheries assessment projects for the Middle Kuskokwim River Region. In partnership with the Alaska Department of Fish and Game Commercial Fisheries Division, Napaimute has been conducting the ATF and operating the Salmon River Weir since 2015. The ATF will provide daily information on relative abundance, species composition and run timing for Chinook and Chum salmon, on the main stem Kuskokwim River at Aniak to fisheries managers. The Salmon River weir will provide information like the ATF with the addition of age, sex, and length data, and estimations of Chinook and Chum salmon escapement for one of the major tributaries of the Aniak River. Chinook Salmon abundance estimates for the Salmon River may also be used postseason as a data point in the Kuskokwim River basin wide Chinook Salmon run reconstruction model which is used to evaluate achievement of the established basin wide escapement goal of 60,000–120,000 Chinook Salmon.

**Partnerships/Capacity Building:** Capacity building and workforce development has been identified as a specific component for each of the proposed project’s objectives. The Council places a stronger emphasis on the professional development of tribal members to achieve a sustainable community, while retaining respecting for the land, culture, and core values, accountability, integrity, respect, and responsibility. This proposal has been developed keeping Napaimute’s goals in mind with a focus on local workforce development.

Napaimute has identified subsistence issues, with a focus on salmon as a component of its EPA Tribal Environmental Plan. Funding provided by the FRMP program will deliver the necessary tools, training, and career opportunities to assist the Tribe with establishing a sustainable fisheries program at Napaimute and achieving its identified environmental objectives. The Tribe recognizes the critical role subsistence fisheries play in realizing its vision and is therefore committed to taking a more proactive, meaningful role in its management to protect the sustainability of this vital resource for future generations.

Napaimute has been conducting the ATF and operating the Salmon River Weir since 2015 in partnership with the Alaska Department of Fish and Game (ADF&G) Commercial Fisheries Division. We currently have a cooperative agreement in place with ADF&G to operate both projects as proposed. ADF&G has expressed its continued support for this project and if funded is willing to enter another agreement with NVN for the duration of the project.

**Technical Review Justification:** This proposal requests funds to continue monitoring Chinook and Chum salmon at the Aniak test fishery and the Salmon River (Aniak) weir in the Kuskokwim River drainage. This project addresses a priority information need identified by the Yukon-Kuskokwim Delta and Western Interior Alaska Subsistence Advisory Councils. Chinook and Chum salmon are harvested by federally qualified subsistence users throughout the Kuskokwim River drainage in one of the biggest subsistence salmon fisheries in the State. Subsistence salmon harvest has been severely restricted since salmon run declines began around 2010.

The project follows the same objectives and methods as in the previous Monitoring Program funding cycle which were adopted from the Alaska Department of Fish and Game. The objectives are clear, measurable, achievable, and there is a clear plan for data collection, compilation, analysis, and reporting. The principal investigator is employed by the Native Village of Napaimute who has a history of being successful in building capacity within the Partners and Monitoring Programs. The proposed project represents a State and Native Tribal Organization partnership with substantial resources available for completing the work. The total funding request is reasonable for the work and deliverables described.

**Investigator Submitted Executive Summary:**

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<b>Project Number:</b>	24-304			
<b>Title:</b>	Estimating Kuskokwim River Sockeye Salmon Abundance using Genetic Mark-Recapture			
<b>Geographic Region:</b>	Kuskokwim			
<b>Data Types:</b>	Stock Status and Trends			
<b>Principal Investigator:</b>	Sean Larson, Alaska Department of Fish and Game (ADF&G)			
<b>Co-investigator:</b>	Elizabeth Lee, ADF&G			
<b>Project Request:</b>	<b>2024:</b> \$81,145	<b>2025:</b> \$0	<b>2026:</b> \$0	<b>2027:</b> \$0
<b>Total Request:</b>	\$81,145			

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**Issue:** This project uses genetic mark-recapture (GMRC) methodology to estimate Sockeye Salmon abundance at the Kuskokwim River sonar site to verify Sockeye Salmon passage estimates produced at the sonar. Sonar projects are not without challenges, particularly regarding species apportionment. Challenges can arise when trying to apportion out a single species in a large river when most of the daily passage consists of other species. For example, at the Kuskokwim River sonar in 2022, approximately 615,000 Sockeye Salmon were counted, while total passage of all species was approximately 2,342,000 fish. While the sonar may provide accurate season total abundance estimates for Sockeye Salmon, independent verification of the estimates is needed.

The Kuskokwim River sonar has provided a platform for conducting genetic mixed stock analysis (MSA) projects to better understand Sockeye Salmon abundance at the sonar site. Given the strong level of genetic differentiation that exists between the Telaquana Lake populations and the other populations in the Kuskokwim River sockeye salmon baseline, it is possible to use genetic markers for mark-recapture abundance estimation. Genetic mark-recapture (GMRC) approaches require 1) total abundance estimates

for a genetically distinct stock, i.e., Sockeye Salmon returning to Telaquana Lake and 2) estimates of the relative contribution of the Telaquana Lake sockeye salmon stock to other stocks at the sonar site. This approach would provide estimates of Sockeye Salmon abundance at the sonar site that are independent of sonar passage estimates.

The GMRC study proposed here would provide a relatively simple and inexpensive way to verify Sockeye Salmon abundance estimates at the Kuskokwim River sonar. We would reconstruct Telaquana Lake Sockeye Salmon abundance using weir and harvest data and expand that to a total Sockeye Salmon abundance using GSI estimates from the sonar test fishery. We would utilize tissue samples already collected at the sonar site from 2019–2022. The size of the inriver Sockeye Salmon run is a key component for implementing management plans, setting escapement goals, and developing preseason forecasts. If GMRC results agree with passage estimates at the sonar, then managers and stakeholders could have confidence in the Sockeye Salmon passage estimates produced at the sonar going forward.

**Objectives:** The primary goal of this study is to estimate the abundance of Sockeye Salmon at the sonar site 2019 – 2022 using methods independent of sonar passage estimates. To achieve this goal, we plan to meet the following specific objectives:

1. Use genetic mixed stock analysis to estimate the relative contribution of Telaquana Lake Sockeye Salmon stock to other stocks at the Kuskokwim River sonar 2019–2022.
2. Use genetic mark-recapture methodology to estimate Sockeye Salmon abundance above the sonar site 2019–2022.

**Methods:** Sockeye Salmon tissue samples were collected during the Kuskokwim River sonar’s gillnet apportionment test fishery 2019 – 2022. Data collection occurred through the entirety of the sockeye salmon run. For each of the four years (2019–2022) during which data and samples were collected, 570 sockeye salmon samples will be proportionally selected to represent the sockeye salmon passage at the sonar. Selected genetic tissue samples will be genotyped following a well-established protocol, and the genotypes will be statistically compared to a Kuskokwim River genetic baseline to determine proportions of stocks within the mixture samples. The stock proportion estimates will be reported for Telaquana Lake and Other Kuskokwim stocks. Using the annual stock proportion estimates for Telaquana Lake sockeye salmon, sockeye salmon escapement estimates at the Telaquana River weir, and assumed harvest of Telaquana Lake sockeye salmon above the sonar site, we will reconstruct the total run of Telaquana Lake sockeye salmon and expand it based on GSI proportions at the Kuskokwim River sonar site from 2019–2022.

**Partnerships/Capacity Building:** All aspects of this project will be led and executed by ADF&G; however, ONC will assist in partnership. Data collection for this project has already been completed and only analysis is needed. While data collection was primarily conducted by ADF&G staff, ONC technicians assisted with tissue collections at the sonar site from 2019–2022. The work proposed here provides an opportunity to introduce a fisheries student to working in a genetics laboratory. We have identified an Alaska Native Science and Engineering Program (ANSEP) student who is affiliated with ONC and the Yukon-Kuskokwim Delta. The student will gain an understanding of laboratory work and

be trained on processing genetic samples. The student will work with ADF&G staff in Anchorage to help produce project results. ONC will work with the ADF&G to financially support the student for work completed at the ADF&G genetics laboratory. By assisting ADF&G staff, the ANSEP student will gain valuable experience with laboratory work which will contribute to their professional and academic development.

**Technical Review Justification:** This project proposes a novel approach to cross-validating sonar estimates using genetic mark-recapture and mixed stock analysis and directly addresses a priority information need identified by the Council. This project will benefit in-season management of Sockeye Salmon in the Kuskokwim drainage and is cost-effective because required Sockeye Salmon tissue samples are already collected and archived. The requested funding is for one year of work, however, yields four years of comparative results. The investigators and the Gene Conservation Lab have an extensive history of successfully completing Monitoring Program projects. The Gene Conservation Lab is well suited to administer this project which could provide additional assurance to in-season management as to the estimates derived from the sonar. While the project does list an Alaska Native Science and Engineering Student to assist with the lab work, the project could benefit by engaging with a rural partner or organization to broaden its partnerships and capacity.

**Investigator Submitted Executive Summary:**

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<b>Project Number:</b>	24-305			
<b>Title:</b>	Monitoring Salmon Abundance in the Salmon River, Southwest Alaska			
<b>Geographic Region:</b>	Kuskokwim			
<b>Data Types:</b>	Stock Status and Trends			
<b>Principal Investigator:</b>	Jonathan Truett Cawlfeld, U.S. Fish and Wildlife Service, Togiak National Wildlife Refuge (NWR)			
<b>Co-investigator:</b>	Patrick Walsh, U.S. Fish and Wildlife Service, Togiak NWR			
<b>Project Request:</b>	<b>2024:</b> \$19,280	<b>2025:</b> \$13,780	<b>2026:</b> \$14,180	<b>2027:</b> \$13,780
<b>Total Request:</b>	\$61,020			

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**Issue:** Populations of Chinook and Chum salmon had their lowest recorded escapement in many systems across Alaska including the Kuskokwim River in 2022. To manage fishery resources effectively it is essential to monitor fish populations across many systems. It is not logistically or financially feasible for managers to install and operate weirs in all the important systems on Togiak National Wildlife Refuge. To make up for logistical and financial limitation, managers have historically flown aerial surveys at the estimated peak run date to estimate salmon escapement. In this project we propose to fly weekly aerial surveys of the Salmon River and compare results with known escapement counts from a resistance board weir. After removal of the weir aerial surveys will continue with historic comparisons to known escapement counts and calculated observer efficiency. This could allow for a more accurate aerial escapement estimate, without requiring the cost of operating and manning a weir indefinitely.

This method moving forward can be utilized to monitor systems throughout the region and across Togiak National Wildlife Refuge, in a manner that is more cost effective, more efficient, and has greater accuracy and precision. Aerial surveys have been utilized in southwest Alaska for decades to monitor salmon

escapement. They are a relatively cheap and efficient method compared with the logistical and financial cost of monitoring escapement with weirs. Aerial surveys however are frequently biased low due to observer efficiency. Surveys are only flown on one occasion in many monitoring programs, at the expected peak of run to estimate escapement. This project will address the weaknesses in traditional aerial survey methods in two ways. Surveys will be flown weekly to monitor true timing and run size throughout the spawning season. A weir will be installed that will enumerate true escapement. The weir escapement numbers will be utilized to determine direction and magnitude of the observer bias. A more robust aerial survey method will emerge from this project that will allow for cheaper, more accurate, and more efficient long term escapement monitoring.

**Objectives:**

1. Estimate escapement using aerial survey data and compare the bias and precision of these estimates to known counts of fish obtained from a weir.
2. Estimate observer efficiency using aerial surveys to determine the relationship between aerial survey counts and known counts from the weir. We will also evaluate the direction and magnitude of the bias from independent aerial surveys.

**Methods:** The Kenai Fish and Wildlife Conservation Office will establish and operate a resistance board weir in the Salmon River for a five-year period 2023–2027. The weir will establish baselines in number and timing of anadromous salmon returning to spawn in the Salmon River. The timing and numbers determined from weir counts will be assumed to be true when used to determine accuracy and precision of aerial survey counts as described in this study plan.

We will conduct weekly aerial surveys from May 15 through September 30 of the runs of each of the five salmon species spawning in the Salmon River. Although the timing of anadromous fish runs in the Salmon River is currently not well understood, data gathered by five years of weir operation will establish the run timing for each of the major species. Accuracy and precision of the aerial surveys will be determined by comparison with the weir count data. The goal for aerial surveys is an estimate within 20% of the true count 90% of the time to provide a robust long term monitoring option.

**Partnerships/Capacity Building:** This project was designed in cooperation with the Bureau of Land Management, ADF&G, and U.S. Fish and Wildlife staff from multiple offices. The weir operation will be organized and funded through the Kenai Fish and Wildlife Conservation office. We are currently working with Togiak Refuge Resource Information Technician and Platinum Village locals to identify a Platinum Village resident to help staff the weir. The Bureau of Land Management will take the lead on communication between the mine owners and their staff and the conservation partners working on this project. ADF&G will help the project by lending their expertise in project design and training new observers in aerial surveys. Togiak National Wildlife Refuge will lead on coordinating aerial salmon surveys. This cooperative effort will increase interaction between local stakeholders and subsistence users, agencies, as well as increasing scientific knowledge. This project will result in increased capacity for collecting and sharing data on salmon monitoring throughout southwest Alaska.

**Technical Review Justification:** This proposal requests four years of funding to conduct a comparison of fixed-wing aerial surveys of salmon abundance to weir-based estimates at the Salmon River weir. Observer biases will be calculated as well as a determination of whether the aerial based surveys can be used reliably and accurately. Differentiation between all five species salmon species known to occur in the Salmon River could be problematic and result in unreliable survey data. Additionally, other cost-effective means such as using small unmanned aerial systems to conduct aerial surveys combined with partnering with the Platinum Village would have provided a meaningful capacity building, as well as a means for developing a community-based monitoring program. The cost of the project is reasonable considering the proposed work and the contributions from various agencies; however, additional costs to cover surveys in other nearby streams would not provide accurate counts without weirs to account for known observer bias and cross validation of survey estimates. This project has great partnerships among Federal and State entities, but the proposal could have benefited through engagement and partnerships with local rural organizations or Tribes to build capacity and conduct the proposed work together.

**Investigator Submitted Executive Summary:**

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<b>Project Number:</b>	24-308			
<b>Title:</b>	Kwethluk River Salmon Run Timing and Abundance			
<b>Geographic Region:</b>	Kuskokwim			
<b>Data Types:</b>	Stock Status and Trends			
<b>Principal Investigator:</b>	Frank Harris, U.S. Fish and Wildlife Service			
<b>Co-investigator:</b>	Jennifer Ephook, Organized Village of Kwethluk, Justin Leon, Kuskokwim River Inter-Tribal Fish Commission, Spencer Reardon, Yukon Delta National Wildlife Refuge			
<b>Project Request:</b>	<b>2024:</b> \$216,242	<b>2025:</b> \$221,257	<b>2026:</b> \$227,719	<b>2027:</b> \$232,030
<b>Total Request:</b>	\$897,248			

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**Issue:** This project relates to the following priority information needs identified in the 2022 Office of Subsistence Management (OSM) Request for Proposals:

*Reliable quantitative and/or qualitative estimates of salmon run size, escapement, and harvest in the entire Kuskokwim River watershed including Kuskokwim Bay.*

*Distribution, abundance, condition, and survival of juvenile and out-migrating salmon in the Kuskokwim River drainage.*

*Impacts of climate change to harvest and use of fish and impacts of climate change on fish, for example migration, spawning, life cycle, and abundance.*

**Objectives:** The overall goal of this project is to continue to collect long-term data of escapement and age, sex, and length data to be able to see trends overtime and provide this information to managers for pre-season and in-season management decisions affecting subsistence users. The following objectives will be executed to achieve this goal.

1. Enumerate the daily passage and characterize the run timing of Chinook, Chum, and Coho salmon through the weir.
2. Estimate the weekly sex, and age composition of Chinook, Chum, and Coho salmon such that the simultaneous 95% confidence intervals have a maximum width of 0.20.
3. Estimate the mean length of Chinook, Chum, and Coho salmon by sex and age such that the simultaneous 95% confidence intervals have a maximum width of 0.20.
4. Identify and count other fish species passing through the weir.
5. Continue to build local capacity to plan and operate a community-based stock assessment project and conduct community outreach.

**Methods:** The partners will operate a resistance board weir affixed with an underwater video system in the Kwethluk River approximately 88 river kilometers upstream from the confluence with the Kuskokwim River. Enumeration of salmon will occur between mid-June and September 10 each year. Daily escapement counts will be relayed to staff daily, thus contributing to daily in-season management decisions. Data on fish age, sex, and length will be collected weekly. Sampling consists of measuring length, determining sex, collecting scales, examining fish for gill net marks, and then releasing the fish upstream of the weir. Days with partial or zero counts will be considered incomplete, and estimates will be calculated for those dates.

**Partnerships/Capacity Building:** OVK, KRITFC, and the U.S. Fish and Wildlife Service (FWS) are committed co-investigators for this project in the development of a robust community capacity building effort to increase local expertise to manage this and future fish monitoring projects. OVK has been partnering with the FWS in operating fisheries monitoring and assessment projects since monitoring efforts on the Kwethluk River were initiated in 1992 and brings a long history of local knowledge to management discussions and suggestions for field operations.

A key aim of this project is to build capacity for Tribally-led fisheries research and monitoring by providing seasonal employment and professional mentorship and development. Project partners commit to working together to assist OVK in developing administrative capacity essential to assuming a more active role in overall project management.

Another key element of community capacity building is education. To raise awareness of weir operations among communities, the partners propose to have annual tours of the Kwethluk Weir to any who are interested and will provide direct invitations to elders from OVK to tour the weir. The Service's Refuge Information Technicians will provide transportation to and bilingual tours at the weir for residents of Kwethluk. The tour of the facility will allow residents to take part in Age-Sex-Length sampling so they can actively participate in salmon management. The partners want to promote awareness of weirs and weir operations among Elders and others in the villages to encourage active involvement by community members in salmon management. Additionally, the partners will strive to provide education opportunities in local schools with the goal of teaching young people about the importance of salmon management and how they can be engaged in managing their resource.



**Technical Review Justification:** The investigators propose to continue operating the Kwethluk River weir to monitor Chinook, Chum, and Coho salmon through 2027. This project addresses three priority information needs identified by the Yukon-Kuskokwim Delta and Western Interior Alaska Subsistence Advisory Councils. The Kwethluk River drainage is entirely within the exterior boundaries of the Yukon Delta and Togiak National Wildlife Refuges. Federally qualified subsistence users harvest Chinook, Chum, and Coho salmon in the Lower Kuskokwim and Kwethluk Rivers. Subsistence salmon harvest has been severely restricted since salmon run declines began around 2010. This project has been running for many years, the science and logistics have proven to be very effective, and the objectives are clear, measurable, and achievable. The principal investigator is a Federal agency and two of three co-investigators are local tribal organizations. The U.S. Fish and Wildlife Service has assumed a principal investigator role in response to challenges with plans to transition the project lead during the last cycle, with the intent to continue to develop capacity for a larger role by partners. The budget narrative indicates that there will be substantial in-kind staff contributions from U.S. Fish and Wildlife Service to ensure objectives and deliverables are met. This proposal maintains a partnership level with local tribal organizations that increases the probability of meeting project objectives. The funding request is reasonable considering the remote location of the project, but the overall cost of the project is very high when accounting for matching funds and in-kind contributions.

**Investigator Submitted Executive Summary:**

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<b>Project Number:</b>	24-350			
<b>Title:</b>	Local and Indigenous Knowledge of Whitefishes, Including Sheefish, in a Changing Climate, Kuskokwim River			
<b>Geographic Region:</b>	Kuskokwim			
<b>Data Types:</b>	Harvest Monitoring and Traditional Ecological Knowledge			
<b>Principal Investigators:</b>	Katie Hayden, Alaska Department of Fish and Game (ADF&G); David Koster, ADF&G			
<b>Co-investigator:</b>	None			
<b>Project Request:</b>	<b>2024:</b> \$ 144,308	<b>2025:</b> \$ 139,769	<b>2026:</b> \$ 105,698	<b>2027:</b> \$ 0
<b>Total Request:</b>	\$ 389,776			

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**Issue:** This project relates to the following priority information needs identified in the 2022 Office of Subsistence Management (OSM) Request for Proposals:

*Knowledge of whitefish and Sheefish population abundance and distribution within the Kuskokwim River watershed, including inseason harvest and monitoring.*

*Impacts of climate change to the harvest and use of fish and impacts of climate change on fish: for example, migration, spawning, life cycle, and abundance.*

Whitefishes and other nonsalmon fishes are extremely important in subsistence fisheries throughout the Kuskokwim River drainage. Despite their prolific use for subsistence, there is limited information about the reliance on whitefish and Sheefish resources by Kuskokwim Area residents as well as species-specific harvests as an index of abundance and distribution. This lack of information makes managing nonsalmon

fisheries extremely difficult for both federal and state managers, especially during the current moment of multi-species salmon declines in the Kuskokwim River.

Residents of the region are facing the combined stressors of climate change effects on whitefish fisheries and the increased pressure on whitefishes and other nonsalmon species due to less reliable access to salmon species resulting from reduced salmon abundance and more restrictive regulations to protect them. The proposed research will update the existing documentation of Traditional Ecological Knowledge (TEK) of whitefishes, including Sheefish, with a focus on local fishers' observations of abundance and distribution. It will also update harvest estimates of whitefishes, including Sheefish, for the communities of Tuntutuliak, Tuluksak, Aniak, Sleetmute, Crooked Creek, and Nikolai to explore shifting patterns of harvest.

Together, these data types will help managers to protect and sustainably manage this critical subsistence resource. This work will have multiple applications. First, updated harvest data will add to a growing body of harvest data for these important species and help managers assess changes in harvests for select communities in each region to further their understandings of the role of nonsalmon fish within a broader subsistence harvest context, especially considering declining salmon runs. Further, harvest data can provide an index of abundance and keys to understanding the geographic distribution of various species throughout the watershed. Critical assessments of local experiences of and adaptations to climate, landscape-based, and regulatory change in the fisheries are critical inputs to management and policy information about important nonsalmon populations and habitats (mapped data). TEK work will also result in spatialized depictions of local knowledge of whitefish habitats at a species-level resolution for use by other researchers, such as those with the ADF&G Alaska Freshwater Fish Inventory (AFFI) program and as indicators for more in-depth biological inquiry.

**Objectives:** This project has two main objectives:

1. Document and update local knowledge related to whitefish species, including sheefish, abundance and distribution based on harvesting patterns and observational knowledge of fish ecology in all six communities.
2. Estimate subsistence harvest levels and percentages of households using, harvesting, giving away, and receiving whitefishes, including sheefish for the calendar years 2024 and 2025 by species and season for the communities of Tuntutuliak and Tuluksak in the lower river; Aniak in the middle Kuskokwim; and Nikolai in the upper river. Researchers will also produce a reported harvest in Sleetmute and Crooked Creek based on a snowball sample.

The first objective will provide both an ethnographic basis for understanding the role of whitefishes in the lives of Kuskokwim River residents and contextual information for interpreting the quantitative data collected in harvest reports.

**Methods:** Methods for this project are defined by an ethnographic approach, including both qualitative and quantitative methods of data collection. The ethnographic research for this project will include anthropological methods of participant observation and semi-structured interviews. In each community, individuals considered to be knowledgeable about whitefish species will be identified with the assistance of tribal council and other community members using a snowball method to learn about other experts.

Researchers will attempt to interview 6–10 individuals per community, depending on size. Key respondent interviews will occur simultaneously with the first year of harvest data collection between January and March 2025 for the 2024 calendar year. Another set of interviews will occur after the second year of harvest data collection and initial analysis as a follow-up on any questions arising from the harvest data. Subsequent to the interviews, interview data will be downloaded into ATLAS.ti, a qualitative data analysis software, coded, and analyzed.

The primary harvest data collection method will be systematic household surveys utilizing a calendar approach to document harvest for each community over a 12-month period. The research will document two years of harvests to mitigate against the potential of a single year of data collection during an anomalous year for any community or region due to environmental conditions, fishing regulations, or other factors.

This project will follow the disciplinary standards of the National Academy of Science's *Principles for Conducting Research in the Arctic* (NSF 2018), research principles adopted by the Alaska Federation of Natives in its *Guidelines for Research* (ANKN 1993), as well as the Alaska confidentiality statute (AS 16.05.815). These principles stress community approval of research designs, informed consent, anonymity of study participants, community review of draft study findings, and the provision of study findings to each study community upon completion of the research.

**Partnerships/Capacity Building:** A primary goal of this project is to engage residents of the study communities throughout the research project to build capacity for fisheries research and to facilitate information sharing between local residents and resource management agencies. Project Investigators will consult with all tribal councils to implement this study. Tribal councils will be able to provide input into the project design and will be consulted to help interpret preliminary results. Additionally, the tribal councils will provide suggestions for local research assistants and ethnographic interview participants. During community scoping meetings, the PIs will present this project to the tribal councils of the study communities and request approval to conduct the proposed field research activities. Local research assistants will be trained in social science research methods and help with data collection. Working with local hires to collect data allows PIs to better understand local issues, and it can also help local residents further understand science and management issues. Local residents will have the opportunity to share their knowledge of nonsalmon fish in the Kuskokwim River drainage with researchers, and, in return, project staff will share what they learn through ethnographic and harvest-based research with the community. The PIs will also consult with agency and NGO fisheries biologists to inform them of the project's goals and data collection methods and will be encouraged to provide the PIs with their recommendations regarding information needs.

**Technical Review Justification:** The proposed research will update existing documentation of traditional ecological knowledge of whitefishes, including Sheefish, with a focus on local fishers' observations of abundance and distribution in six Kuskokwim River communities. Investigators responded to two priority information needs identified in the 2024 Notice of Funding Opportunity. The Federal nexus is clear: the project area is within the Yukon Delta National Wildlife Refuge. Objectives are clearly stated, and the investigation plan is well-written. Investigators appear qualified to do the work,

and the budget and timeline are reasonable for the work being proposed. Investigators provide descriptions of sampling designs including citations. Methods described are standard and consistently provide good results. Meaningful involvement of the communities in the research is planned. Investigators made a good case for the need of research into the harvest and use of whitefishes by the villages along the Kuskokwim River. Their harvests of salmon have been significantly reduced because of low run sizes and fishing restrictions, putting harvest pressure on other resources particularly whitefishes that are available year-round.

**Investigator Submitted Executive Summary:**

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<b>Project Number:</b>	24-351			
<b>Title:</b>	Climate Change and Impacts on Subsistence Fisheries in the Kuskokwim Management Area, Alaska			
<b>Geographic Region:</b>	Kuskokwim			
<b>Data Types:</b>	Harvest Monitoring and Traditional Ecological Knowledge			
<b>Principal Investigator:</b>	Alida Trainor, Alaska Department of Fish and Game (ADF&G)			
<b>Co-investigator:</b>	Timothy Bembenic, ADF&G			
<b>Project Request:</b>	<b>2024:</b> \$ 142,808	<b>2025:</b> \$ 133,446	<b>2026:</b> \$ 18,046	<b>2027:</b> \$ 0
<b>Total Request:</b>	\$ 294,300			

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**Issue:** Public comments from Kuskokwim Management Area (KMA) subsistence users identify a suite of environmental changes attributed to climate change that affect fish, fish habitats, and fishing activities. In recent years members of the Yukon-Kuskokwim Subsistence Regional Advisory Council (RAC) and the public have expressed concern regarding the effects of climate change to fisheries and wildlife throughout the Yukon-Kuskokwim Delta that their subsistence harvests rely on. A growing body of research supports these comments and concerns. Chinook and Chum salmon declines, rapid erosion and reduced fishing habitat were all linked to climate change. Climate change affects subsistence in many ways, including the ability to access, harvest and properly preserve harvested meat and fish for the winter. In 2019, the KMA faced extremely warm temperatures, leading to hundreds of dead Chum Salmon observed by local residents along the Kuskokwim River. RAC members also shared observations of dead whitefish and dead smolt they attributed to the warm and low water levels in 2019.

Kuskokwim salmon are in a period of decline and the decrease in abundance has significantly reduced subsistence salmon harvests, a primary source for food and cultural well-being. A directed, systematic, drainagewide effort to collect information is needed to better understand these changes and their effects on fish resources in the Kuskokwim Management Area. A growing consensus indicates that Traditional Ecological Knowledge (TEK)—the synthesis of observations made through lifetimes of interaction with the local environment—is particularly well suited for identifying environmental changes attributable to climate change at the local and regional levels. Understanding the potential effects of climate change on landscapes, fish and wildlife, and subsistence users from those users’ perspectives will help managers build flexibility into formal management structures to address a changing environment.

**Objectives:**

- 1) Conduct in-depth ethnographic interviews with local residents from Quinhagak, Sleetmute, and McGrath to document the TEK of climate change, focusing on themes related to subsistence fisheries and those that impact fish more generally. These themes will include:
  - a. Run timing
  - b. Salmon abundance
  - c. Natural indicators of salmon run timing and abundance
  - d. Migratory access to spawning grounds
  - e. Spawning behavior
  - f. Water quality
  - g. Streambed quality
  - h. Debris loads
  - i. Interactions with other riverine and terrestrial species (Beaver)
  - j. Erosion
- 2) Identify and map the specific areas associated with salmon spawning grounds or rearing habitats where local residents have personal experience through fishing or other activities and visually document where the impacts of climate change are observed.
- 3) Describe how observations of change may relate to management priorities or actions.
- 4) Contribute to local capacity building by utilizing a framework of community involvement in research.

**Methods:** This research proposes to document observations of climate change from life-long residents of the KMA communities of Quinhagak, Sleetmute, and McGrath. This proposal addresses the FRMP Priority Information Need that seeks to understand “impacts of climate change to harvest and use of fish and impacts of climate change on fish.” To address the Inter-regional Priority Information Needs outlined in the 2024 Request for Proposals, principal investigators have been in consultation with Chance Wilcox, Subsistence Resource Specialist for the Subsistence Division at the Alaska Department of Fish and Game in Anchorage regarding his inter-regional project proposal in Southeast Alaska. The currently funded FRMP project in Northwest Alaska, *Traditional ecological knowledge of salmon in the river drainages of Kotzebue Sound* [FRMP #20-150], also explores similar themes. In this way, the proposed work will contribute to a comprehensive understanding of climate change impacts throughout the entire Arctic-Yukon-Kuskokwim region and contribute to transregional comparisons of climate change impacts to salmon and subsistence salmon harvests across the state of Alaska. Continued communication between investigators on these three projects is planned throughout the various phases of research. Finally, tribal councils and community members will have the opportunity to review and discuss the work directly with investigators during data collection and analysis, and prior to final publication.

Methods for this project are defined by an ethnographic approach, focused on qualitative data collection. The ethnographic research for this project will include anthropological methods of semi-structured interviews, mapping, and participant observation. Specific participant-observation may include traveling with ethnographic respondents to observe and photograph landscape disturbances or salmon habitat changes. Researchers will attempt to interview 5–19 individuals per community, depending on size. Researchers will strive to include experts across a variety of demographics, including age, gender, and profession. Key respondent interviews will occur in the spring of 2025.

During the key respondent interviews, principal investigators will also map local use areas with specific attention to changes in the landscape or these use patterns. A mapping protocol will be developed to systematically document themes of change, fisheries habitat, fish related place names, and landscape disturbances that respondents attributed to climate change, across all respondents.

**Partnerships/Capacity Building:** The principal investigators will build on earlier research efforts to contribute capacity building in study communities through research partnerships with local tribal or village councils in the identified study communities and will seek to hire local research assistants to help select key respondents, assist the investigators in all aspects of fieldwork, and administer the mapping protocol. Investigators have also consulted with Chance Wilcox regarding his multiregional research proposal on the same topic in Southeast Alaska. Should both projects be funded, investigators from both projects will strive to work together in collecting comparable data sets for analysis that will facilitate inter-regional comparisons of climate change observations as they relate to subsistence fisheries.

**Technical Review Justification:** Investigators propose a method using traditional ecological knowledge to systematically document climate change observations in Alaska in response to two priority information needs identified in the 2024 Notice of Funding Opportunity. The Federal nexus is clear: the project area is within the Togiak National Wildlife Refuge and in communities upriver of the Yukon Delta National Wildlife Refuge. Objectives are clearly stated, and the investigation plan is well-written. Investigators are qualified to do the work, and the budget is reasonable for the work being proposed. Methods described are standard and consistently provide good results. Meaningful involvement of the communities in the research is planned. Objectives are informed by a review of previous research and the final report will include hypotheses to inform future research. Investigators structured the methodology to allow for cross-regional comparisons in current and future research. Objectives include describing how observations of change may relate to management priorities or actions. Investigators include a plan for reporting results through interactive maps to share with Councils, stakeholder groups, and communities.

**APPENDIX 1**  
**PROJECTS FUNDED IN THE KUSKOKWIM REGION SINCE 2000**

Project Number	Project Title	Investigators
<b>Salmon Projects</b>		
00-007	Tatlawiksuk River Salmon Weir	ADF&G, KNA
00-008	Bethel Inseason Subsistence Harvest Data	ONC
00-009	Bethel Postseason Harvest Monitoring	ADF&G, ONC
00-019	Kwethluk River Salmon Weir	USFWS, OVK
00-027	Goodnews River Salmon Weir	ADF&G
00-028	Kanektok River Salmon Weir	ADF&G, USFWS
00-029	Documentation/Communication on Floating Weirs	AVCP
00-030	Kuskokwim Salmon Project Site Surveys	ADF&G, USFWS
01-019	Planning Meetings in AVCP Region	AVCP, KNA
01-023	Upper Kuskokwim River Inseason Data	ADF&G, MNVC
01-024	Bethel Postseason Fishery Household Surveys	ADF&G, ONC
01-053	Tuluksak River Salmon Weir	USFWS, TNC
01-070	Kuskokwim River Chinook Salmon Genetic Diversity	ADF&G, USFWS
01-086	Kuskokwim River Escapement Project Technician	ONC
01-088	Natural Resource Internship Program	KNA
01-116	Kuskokwim River Salmon Work Group support	ADF&G
01-117	Kuskokwim Salmon Age-Sex-Length Assessment	ADF&G
01-118	Kanektok River Salmon Weir	ADF&G, BSFA
01-132	Bethel Inseason Subsistence Salmon Harvest Data	ONC, ADF&G
01-141	Holitna River Chinook, Chum, and Coho Telemetry	ADF&G
01-147	Aniak River Sport Fisheries Survey	ADF&G, KNA
01-225	Middle Kuskokwim River Inseason Salmon Harvest	KNA, ADF&G, USFWS
01-226	Subsistence Fisheries Research Capacity Building	ADF&G
02-036	Aniak Postseason Subsistence Fishery Surveys	ADF&G, KNA
02-046	Kuskokwim River Chinook Salmon Inriver Abundance	ADF&G
03-030	Kuskokwim River Salmon Mark-Recapture	ADF&G, KNA
03-041	Kuskokwim Coho Salmon Genetics	ADF&G, USFWS
03-931	Kuskokwim Science Plan	BSFA
04-301	Kwethluk River Salmon Weir	USFWS, OVK
04-302	Tuluksak River Salmon Weir	USFWS, TNC
04-305	Kanektok River Salmon Weir	ADF&G, BSFA
04-310	Tatlawiksuk River Salmon Weir	ADF&G, KNA
04-311	Kuskokwim Coho Salmon Genetic Mixed Stock Assessment	USFWS
04-312	Goodnews River Coho Salmon Weir	ADF&G
04-351	Kuskokwim Bay Traditional Ecological Knowledge and Oral History	USFWS

<b>Project Number</b>	<b>Project Title</b>	<b>Investigators</b>
04-353	Bethel Inseason Subsistence Salmon Data Collection	ADF&G, ONC
04-359	Kuskokwim Postseason Salmon Subsistence Harvest Surveys	ADF&G, KNA, ONC
05-302	Kuskokwim River Chinook Salmon Inriver Abundance	ADF&G
05-304	George and Takotna River Salmon Weirs	ADF&G
05-305	Kuskokwim Chinook Salmon Genetic Stock Identification	ADF&G
05-306	Kuskokwim River Inseason Subsistence Harvest Data Collection	ADF&G, ONC
05-307	Lower Kuskokwim Subsistence Fisheries Catch Monitoring	ONC
05-353	Nunivak Island Subsistence Cod Fisheries	NPT
05-356	Kuskokwim Area Postseason Subsistence Salmon Harvest Survey	ADF&G
06-306	Lower Kuskokwim Salmon Inseason Subsistence Catch Monitoring	ADF&G
06-307	Kuskokwim River Salmon Management Working Group	ADF&G
07-302	Kuskokwim River Chum Salmon Run Reconstruction	ADF&G, BC
07-303	Kuskokwim River Salmon Age-Sex-Length Assessment	ADF&G
07-304	Tatlawiksuk River Salmon Weir	ADF&G, KNA
07-305	Kanektok-Goodnews River Salmon and Dolly Varden Weirs	ADF&G
07-306	Kwethluk River Salmon Weir	USFWS, OVK
07-307	Tuluksak River Salmon Weir	USFWS, TNC
08-302	Lower Kuskokwim Subsistence Chinook Salmon Age-Sex-Length	ADF&G
08-303	George River Salmon Weir	ADF&G
08-304	Takotna River Salmon Weir	ADF&G
08-351	Tuluksak River Subsistence Chinook Salmon Age-Sex-Length	USFWS
08-352	Bethel and Aniak Postseason Subsistence Salmon Harvest Surveys	ADF&G
10-300	Kanektok and Goodnews River Salmon Assessment	ADF&G
10-303	Kuskokwim River Salmon Age Sex Length Assessment	ADF&G
10-304	Tatlawiksuk River Salmon Assessment	ADF&G
10-306	Kwethluk River Salmon Assessment	USFWS
10-307	Tuluksak River Salmon Assessment	USFWS
10-352	Kuskokwim Salmon Postseason Harvest Monitoring	ADF&G
10-353	Kuskokwim Salmon Working Group Support	ADF&G
10-354	Kuskokwim Salmon Inseason Harvest Monitoring	ADF&G
12-302	Lower Kuskokwim River Subsistence Chinook Salmon Harvest ASL	ADF&G, ONC
12-303	George River Salmon Weir	ADF&G, KNA
12-304	Takotna River Salmon Weir	ADF&G, TCA
12-309	Kwethluk River Salmon Weir	USFWS
14-302	Tatlawiksuk River Salmon Weir	ADF&G
14-303	George River Salmon Weir	ADF&G



<b>Project Number</b>	<b>Project Title</b>	<b>Investigators</b>
14-306	Tuluksak River Salmon Weir	USFWS
14-308	Kwethluk River Salmon Weir	USFWS
14-351	Kuskokwim Delta Chinook Salmon Non-local Harvesters	USFS
14-352	Kuskokwim Area Salmon Post-season Subsistence Harvest Surveys	ADF&G
14-353	Kuskokwim River Salmon Inseason Subsistence Survey	ADF&G
14-354	Kuskokwim River Support for Cooperative Management	ADF&G
16-301	Lower Kuskokwim River Subsistence Chinook Salmon Harvest ASL	ADF&G, ONC
16-302	Salmon River of the Pitka Fork Weir	ADF&G, MTNT
16-351	Middle Kuskokwim River In-season Subsistence Salmon Harvest Monitoring and estimation	ADF&G, NVN
18-304	George River Salmon Weir	ADF&G
18-350	Bethel Subsistence Harvest Surveys	ONC, ADF&G
18-351	Kuskokwim Area Salmon Post Season Subsistence Harvest Surveys	ADF&G, ONC
20-301	Kuskokwim River Coho Abundance Estimation and Whitefish Indices using Sonar	ADF&G, ONC
20-302	Salmon River of the Pitka Fork Chinook Salmon Escapement Monitoring	ADF&G, MTNT
20-303	Middle Kuskokwim River Chinook and Chum Salmon Inseason Assessment	NVN
20-308	Kwethluk River Salmon Run Timing and Abundance	USFWS, OVK, KRITFC, BSFA
22-300	Takotna River Salmon Run Timing and Abundance	KRITFC
22-304	George River Salmon Weir	ADF&G, NVN
22-350	Bethel Subsistence Harvest Survey	ONC
22-351	Kuskokwim Management Area Postseason Subsistence Salmon Harvest Survey (continuation of FRMP14-352)	ADF&G
22-352	Local and Traditional Knowledge of Subsistence Salmon Use in the Lower Kuskokwim River	ADF&G
22-353	Natural Indicators of Salmon in the Upper Kuskokwim River	ADF&G
22-354	Community-Based Harvest Monitoring Network for Kuskokwim River Chinook Salmon	KRITFC, Bechtol Research, USFWS
<b>Resident Species</b>		
01-052	Whitefish Lake Humpback & Broad Whitefish	USFWS, KNA
01-112	Aniak River Subsistence Fisheries Study	ADF&G, KNA
01-235	Upper Kuskokwim Community Use Profiles	ADF&G
04-304	Whitefish Lake Whitefish Telemetry	USFWS
05-301	Whitefish PIT Tags	USFWS
06-303	Kuskokwim River Whitefish Migratory Behavior	USFWS, KNA
06-305	Kuskokwim River Inconnu Spawning Distribution	ADF&G
06-351	Lower Kuskokwim Non-salmon Harvest and TEK	ADF&G, AVCP

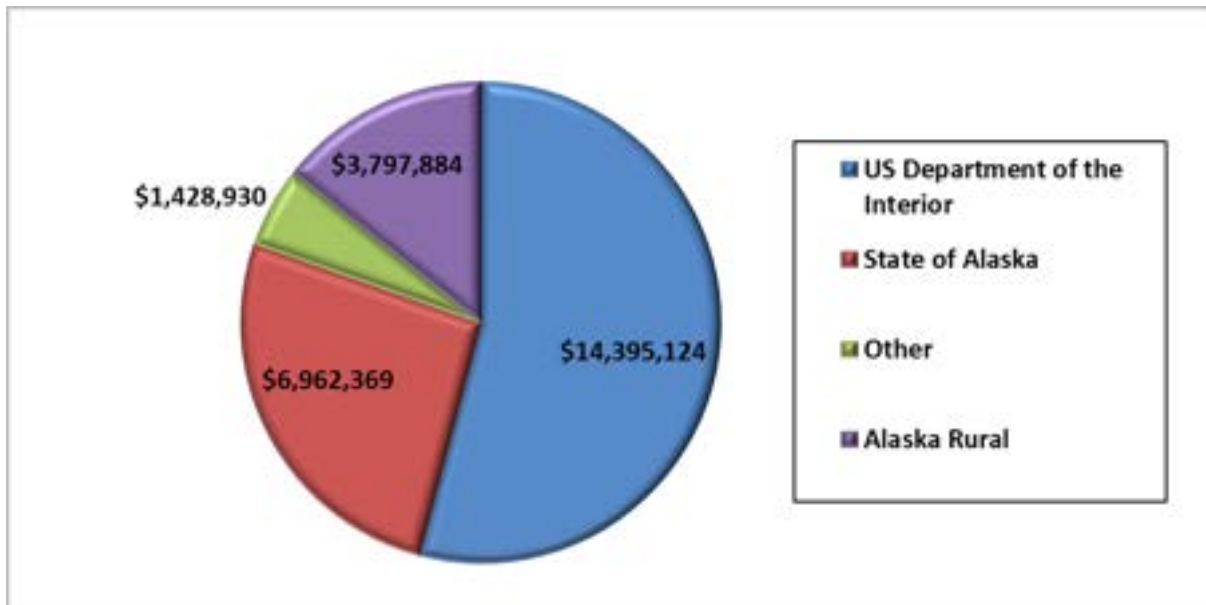
Project Number	Project Title	Investigators
08-300	Aniak River Rainbow Trout Seasonal Distribution	ADF&G
10-305	Kuskokwim River Sheefish Spawning, Distribution and Timing	ADF&G
12-312	Status of Sheefish in Highpower Creek and Upper Kuskokwim River	ADF&G
12-313	Location, Migration Timing, and Description of Kuskokwim River Bering Cisco Spawning Origins	KNA, USFWS
12-352	Whitefish Trends on the Upper Kuskokwim, Alaska	ADF&G
14-301	Kuskokwim River Broad Whitefish Spawning above McGrath	USFWS
14-307	Upper Kuskokwim River Sheefish Enumeration	USFWS
14-356	Lower Kuskokwim Villages Whitefish	CEC
16-303	Enumeration and Spawning Area Characterization of Sheefish in the Upper Kuskokwim River	ADF&G
22-301	Kuskokwim River Broad Whitefish Subsistence Harvest and Spawning Abundance	USFWS, NVN, ONC

Abbreviations: AC = Alaskan Connections, ADF&G = Alaska Department of Fish and Game, AVCP = Association of Village Council Presidents, AV = Arctic Village, BF = Bill Fliris, BUE = Bue Consulting, BLM = Bureau of Land Management, BSFA = Bering Sea Fisherman's Association, CATG = Council of Athabascan Tribal Governments, CEC = Calista Education and Culture, COK = City of Kaltag, DFO = Department of Fisheries and Oceans, EMV = Emmonak Village Council, KAL = City of Kaltag, KRIFTC = Kuskokwim River Intertribal Fish Commission, NPS = National Park Service, LTC = Louden Tribal Council, NVE = Native Village of Eagle, NVHB = Native Village of Hooper Bay, NVN = Native Village of Napaimute, NVV = Native Village of Venetie, ONC = Orutsararmiut Native Council, RN = Research North, RW = Robert Wolfe and Associates, SVNRC = Stevens Village, SZ=Stan Zuray, TCC = Tanana Chiefs Conference, TTC = Tanana Tribal Council, UAF = University of Alaska Fairbanks, USFWS = U.S. Fish and Wildlife Service, USGS = U.S. Geological Survey, UW = University of Washington, and YRDFFA = Yukon River Drainage Fisheries Association.

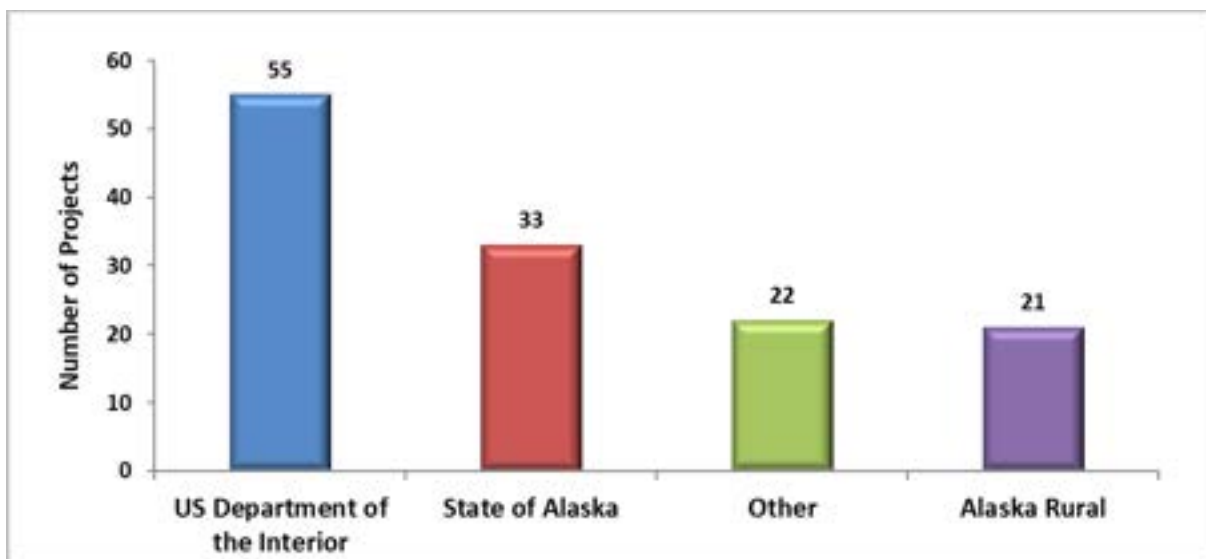
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### FISHERIES RESOURCE MONITORING PROGRAM YUKON REGION OVERVIEW

Since the inception of the Fisheries Resource Monitoring Program (Monitoring Program) in 2000, a total of 131 projects have been funded in the Yukon Region at a cost of \$26.5 million (**Figure 1**). The U.S. Department of the Interior agencies have had the most projects funded in the region, followed by the State of Alaska, other organizations, and Alaska rural organizations (**Figure 2**). See **Appendix 1** for more information on Yukon Region projects completed since 2000 and a list of all organizations that have received funding through the Monitoring Program.



**Figure 1.** Monitoring Program fund distribution since 2000 in the Yukon Region.



**Figure 2.** Number of Monitoring Program projects funded since 2000 in the Yukon Region.

## **PRIORITY INFORMATION NEEDS**

The 2024 Notice of Funding Opportunity for the Yukon Region contained the following 17 priority information needs developed by the Yukon-Kuskokwim Delta, Western Interior, and Eastern Interior Regional Advisory Councils:

- Impacts of climate change to harvest and use of fish; and impacts of climate change on fish, for example, impacts to fish migration, spawning, and life cycle.
- Knowledge of population, reproduction, and health of spawning habitat for Bering Cisco and Humpback Whitefish.
- Reliable estimates of Chinook, summer Chum, fall Chum, and Coho salmon escapements and/or harvests, particularly sub-stocks in District 5 that are large contributors to the total run, for example in the Chandalar, Sheenjek, and Porcupine rivers.
- Distribution, abundance, condition, and survival of juvenile and out-migrating salmon in the Yukon River drainage.
- Estimates of “quality of escapement” measures for Chinook Salmon, for example, potential egg deposition, age, sex, and size composition of spawners, percentage of females, percentage of jacks, and spawning habitat utilization, with an emphasis on Canadian-origin stocks.
- Reliable in-season estimates of salmon harvests in the lower, middle, and upper Yukon River subsistence fisheries.
- Reliable estimates of age-sex-length and genetic composition of salmon harvested in the subsistence fishery, with emphasis on Chinook and fall Chum salmon.
- In-season estimates of genetic stock composition of Chinook, summer Chum, and fall Chum salmon runs and harvests.
- Reliable methods of forecasting Chinook, summer Chum, fall Chum, and Coho salmon run abundance.
- Assessment of incidental mortality with gillnets, dip nets, and seines, with particular consideration for delayed mortality from entanglement, drop-outs, and live release of Chinook Salmon (for example, loss of Chinook Salmon from 6-inch mesh nets during Chum Salmon fisheries and the live release of Chinook Salmon from dip nets and seines).
- Traditional ecological knowledge of fishes.

- Advance genetic baselines for Chinook, summer Chum, fall Chum, and Coho salmon by screening additional populations and novel genetic markers to improve the accuracy, precision, and scale of stock composition estimates to inform stock assessment for Yukon River fisheries.
- Life-history patterns of resident species such as Sheefish, Northern Pike, and Arctic Grayling in relation to geographic distribution and seasonal migration.
- Funding to facilitate interagency and stakeholder forums for gathering and sharing input on fishery management issues.
- Community-based monitoring of fish presence and/or environmental variables in tributaries to better understand fish distribution.
- Seasonal salmon life-stage usage of tidal tributaries draining the Yukon Coastal District through an interdisciplinary approach documenting traditional ecological knowledge and biological surveys in order to update the Anadromous Waters Catalog and improve management's understanding of salmon in these streams.
- Meta-analysis of existing information and research examining the relative importance of freshwater (e.g., predation, stranding, heat stress) and marine (e.g., environmental conditions, bycatch, interception, competition) factors in causing declines of Yukon River Chinook and Chum salmon to present at relevant Regional Advisory Council meetings.

## 2024 MONITORING PLAN DEVELOPMENT FOR THE YUKON REGION

For the 2024 Monitoring Plan, seven proposals were submitted for the Yukon Region (**Table 1**).

**Table 1.** Projects submitted for the Yukon Region, 2024 Monitoring Plan, including project duration in years and total funds requested.

Project Number	Title	Project Duration (Years)	Total Project Request
24-201	Application of Mixed-Stock Analysis for Yukon River Chum Salmon	4	\$511,468
24-202	Gisasa River Chinook and Summer Chum Salmon Abundance and Run Timing Assessment, Koyukuk National Wildlife Refuge, Alaska	2	\$416,584
24-204	Henshaw Creek Chinook and Summer Chum Salmon Abundance and Run Timing Assessment, Kanuti National Wildlife Refuge, Alaska	4	\$877,444
24-250	Traditional Ecological Knowledge and Life Histories of Salmon in Tributaries of the Yukon Coastal District	2	\$318,472
24-251	Content Analysis of Yukon Area Salmon Stakeholder Meetings	2	\$108,229
24-252	In-season Yukon River Subsistence Salmon Survey Program	4	\$338,439
24-256	Yukon River In-Season Salmon Teleconferences	4	\$95,960

Project Number	Title	Project Duration (Years)	Total Project Request
<b>Total</b>			<b>\$2,666,596</b>

## EXECUTIVE SUMMARIES AND TECHNICAL REVIEW COMMITTEE JUSTIFICATIONS

The following executive summaries were written by the principal investigators and submitted to the Office of Subsistence Management as part of a proposal package. It may not reflect the opinions of the Office of Subsistence Management or the Technical Review Committee. The executive summaries may have been altered for length.

Technical Review Committee justifications are a general description of the committee’s assessment of proposals when examining them for strategic priority, technical and scientific merit, investigator ability and resources, partnership and capacity building, and cost/benefit. More in-depth reviews are provided to investigators following project selection.

### Investigator Submitted Executive Summary:

<b>Project Number:</b>	24-201			
<b>Title:</b>	Application of mixed-stock analysis for Yukon River chum salmon			
<b>Geographic Region:</b>	Yukon			
<b>Data Types:</b>	Stock Status and Trends			
<b>Principal Investigator:</b>	Blair Flannery, Conservation Genetics Laboratory, U.S. Fish and Wildlife Service			
<b>Co-investigator:</b>	John Wenburg, Conservation Genetics Laboratory, U.S. Fish and Wildlife Service			
<b>Project Request:</b>	<b>2024:</b> \$127,867	<b>2025:</b> \$127,867	<b>2026:</b> \$127,867	<b>2027:</b> \$127,867
<b>Total Request:</b>	\$511,468			

**Issue:** This project relates to the following priority information need identified in the 2020 Office of Subsistence Management (OSM) Request for Proposals:

- *In-season estimates of genetic stock composition of summer chum and fall chum salmon runs and harvests.*

This proposal is a continuation of Fisheries Resource Monitoring Program (FRMP) projects 04-228, 06-205, 10-205, 14-207, and 20-201, which have provided in-season stock composition estimates of chum salmon to fishery managers within 24 to 48 hours of receiving samples from the Pilot Station sonar test fishery. The disparate strength of individual stocks within and among years makes it clear that in-season stock return data assists management to meet escapement. It provides a real-time tool that allows for informed decisions on regulating fisheries to meet escapement and harvest allocations.

**Objective:** The goal is to provide fishery managers with data that will assist them in meeting escapement, passage, and harvest allocations to ensure that the fishery is managed in a sustainable and equitable manner. The following objective will be executed to achieve this goal.

- 1) Estimate the stock compositions of summer and fall chum salmon sampled from the Pilot Station test fishery each year (June 1 – September 7).

**Methods:** Genetic samples will be collected from every chum salmon caught in the Pilot Station sonar test fishery from June 1 – September 7, and sent to the CGL every week and at the conclusion of each run pulse. Samples will be stratified by time period or run pulse and a subsample of size 288, selected so that daily sample size is proportional to the daily sonar passage estimate within a stratum, will be genotyped for each stratum of the run. Stock composition will be estimated using Bayesian mixture modeling and reported to fishery managers as soon as practicable. Stock abundance estimates will be derived by combining the sonar passage estimates with the stock composition estimates.

**Partnerships/Collaboration:** We have worked with ADFG biologists to coordinate sample collection. We have contracted with the Association of Village Council Presidents (AVCP) to hire a local to collect the genetic samples. We completed the baseline in partnership with the DFOC. We have consulted, with ADFG, USFWS, and DFOC managers.

**Technical Review Committee Justification:** The investigation plan requests four years of funding to continue estimating in-season stock composition of Yukon River summer and fall Chum salmon. The Federal nexus is clear, and this project addresses a 2024 Priority Information Need for the Yukon Region. The data collected by this study will be provided to managers in near real-time and used to inform in-season management decisions. The project objective is clear, measurable, and achievable, and the study design is technically sound. The investigators have the experience necessary to complete this project. A limited partnership with the Alaska Department of Fish and Game is described, but very little detail about consultations with communities or other agencies is provided. The project does not build any meaningful capacity but does propose to hire a local to collect genetics samples. Project costs are reasonable for the proposed work. No letters of support were received.

**Investigator Submitted Executive Summary:**

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<b>Project Number:</b>	24-202			
<b>Title:</b>	Gisasa River Chinook and Summer Chum Salmon Abundance and Run Timing Assessment, Koyukuk National Wildlife Refuge, Alaska			
<b>Geographic Region:</b>	Yukon			
<b>Data Types:</b>	Stock Status and Trends			
<b>Principal Investigator:</b>	Nicole Farnham, Tanana Chiefs Conference			
<b>Co-investigator:</b>	Brian McKenna, Tanana Chiefs Conference			
<b>Project Request:</b>	<b>2024:</b> \$212,282	<b>2025:</b> \$204,302	<b>2026:</b> \$0	<b>2027:</b> \$0
<b>Total Request:</b>	\$416,584			

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**Issue:** Salmon from the Gisasa River contribute to subsistence fisheries in the lower Koyukuk River and in the Yukon River below the Koyukuk River. The Koyukuk River, which flows through the Koyukuk



National Wildlife Refuge (KNWR), is one of the largest tributaries to the middle-lower Yukon River and has substantial runs of Chinook and summer Chum salmon. Adult Chinook and summer Chum salmon returning to the Gisasa River directly contribute to the subsistence harvest of communities throughout the lower and middle Yukon River basin. The successful delivery and assessment of management actions, conservation, and utilization of these salmon stocks is difficult due to the complexity of the multiple salmon runs, the mixed stock fishery, and the limited number of escapement studies like the Gisasa River weir.

This fishery is exploited by over 40 households throughout the Koyukuk River drainage with set gillnets being the primary fishing technique. These fish also contribute to the hundreds of households that fish the Yukon River below the Koyukuk River, where the harvest of salmon for subsistence is of tremendous importance to area residents. These fisheries occur within the boundaries of the Koyukuk National Wildlife Refuge and other Federal Conservation System Units in the lower Yukon River. In 2015, there were at least 44 households from the communities of Huslia, Hughes, Allakaket, Alatna, and Bettles that reported harvests within the Koyukuk drainage. Recent average annual harvest (2015 – 2020) by villages within the Koyukuk drainage were reported as 383 Chinook salmon, and 8,049 summer Chum salmon.

Since 1997, Chinook and summer Chum salmon runs in the Yukon River Basin have demonstrated an overall decline in productivity. These declines have led to harvest restrictions, fishery closures, and spawning escapements below management goals. In 2000, the Alaska Board of Fisheries classified Yukon River Chinook salmon as a stock of yield concern in response to low returns. Federal fisheries resource disasters occurred in 2008-2012 characterized by low returns of Chinook salmon into the Yukon River. In 2014, Alaska Native communities and subsistence fishers throughout the Yukon River drainage passed a moratorium on the subsistence harvest of Chinook salmon in an attempt to conserve and protect their salmon resources. However, low returns of salmon have continued. In 2020 and 2021, federal fisheries resource disasters were declared for Yukon River salmon fisheries due to continued low returns of Chinook and summer Chum salmon.

Throughout these low return years, in-season management efforts to protect salmon have been enacted by fishery managers in an attempt to meet biological escapement goals and to comply with international treaty obligations including border passage goals. These management actions have included intensified gear restrictions on subsistence fishers, and most recently complete closures to the subsistence fisheries in the Yukon River drainage. Traditional summers in Athabaskan villages have historically been structured around Fish Camp. Recent closures to subsistence fisheries have left fish camps empty throughout much of the region, eroding a tradition where multiple generations of families camp together to harvest, cut, and dry salmon. These management actions have resulted in hardships for local Alaska Natives who rely heavily upon salmon as a subsistence food resource as well as a means to continue to practice their ancestral, cultural, and traditional way of life. With the subsistence fishery closures in 2021 and 2022, tribal communities who rely upon salmon resources for sustenance and wellness have endured extreme hardships (Associated Press 2021, ADF&G 2022b).

Because of the current state of the Yukon River salmon fisheries, and the complexity of mixed stock fisheries for both Chinook and summer chum salmon, responsible management of these resources is

paramount. In order to develop proper management strategies, managers need high quality data describing Chinook and summer chum salmon escapements, as well as population specific information such as age, sex, and length (ASL) data, all of which this project will supply. Without accurate escapement estimates from multiple Yukon River tributaries, managers are unable to determine stock specific spawner-recruit relationships (Labelle 1994), and will lack data to evaluate how these systems respond to management actions. Furthermore, quality escapement data from tributaries throughout the Yukon River drainage can help fishery managers to better understand population specific contributions to the overall salmon runs in the Yukon River.

**Objectives:**

- 1) Enumerate daily passage of all fish species passing through the weir;
- 2) Estimate seasonal escapement of adult Chinook and summer Chum salmon using the Sethi and Bradley (2016) modeling techniques as necessary, and to describe their run timing;
- 3) Estimate age, sex and length (ASL) composition of the adult Chinook and summer Chum salmon escapements, for which the 95% confidence intervals of age-sex proportions are no larger than  $\pm 0.1$ ;
- 4) Consult with the Koyukuk and Loudon Tribal Councils, and provide outreach and communication for the villages of Koyukuk and Galena.

**Methods:** A resistance board weir will be installed and operated on the Gisasa River from mid-June through early August each year. A live trap, installed near the thalweg and equipped with a video counting chute, will allow for age, sex, and length (ASL) sampling of adult salmon. All fish passing through the weir and live trap will be identified to the species taxonomic classification level, enumerated, and released alive. Salmon escapements and ASL data will be provided to managers and other interested parties daily. Scale samples from Chinook and summer Chum salmon will be sent to the Alaska Department of Fish and Game (ADF&G) for postseason age analyses.

**Partnerships/Capacity Building:** The partnerships TCC has developed with the USFWS, KNWR, ADF&G and the Koyukuk and Loudon Tribal Councils present a great opportunity to build capacity within the TCC region, especially with the local communities. This project enables TCC to provide information to fishery managers, local users, rural people, and the Regional Advisory Councils (RAC). The relationships TCC already has with federal and state resource management agencies will continue to be strengthened through the continuation of this project and will be an important asset to the fishery program at TCC. This project will provide an opportunity for local communities to engage with the research and management of their salmon resources. TCC plans to hire weir staff from within these communities, which will provide much needed employment opportunities, and further develop the skills of tribal members in fisheries management and assessment projects as well as increase fishery resource stakeholder engagement and expertise.

TCC has a longstanding partnership with the Alaska Native Science and Engineering Program (ANSEP), which supports a youth internship program aimed at growing stakeholder expertise in sustainable fishery management. TCC and ANSEP have enjoyed a mutually rewarding relationship in previous years, as TCC has hosted nine ANSEP student interns between 2016 and 2022. The goals of the internship program are to build educational capacity and expertise in fisheries science and management, expose interns to a variety of active fisheries research monitoring projects, and to educate interns in the federal subsistence management system. ANSEP interns will be able to visit the Gisasa River Weir project to learn about federal subsistence management and types of salmon monitoring projects such as a weir. This partnership has allowed youth starting their academic and career journeys to gain valuable field experience and exposure to research and management of Yukon River fisheries.

**Technical Review Committee Justification:** The investigation plan requests two years of funding to continue operating the Gisasa River weir. The principal goal of this project is to provide an accurate and reliable long-term data set for Chinook and summer Chum salmon escapements, run timing, and age-sex-length data. The Federal nexus is clear, and the project addresses or contributes information to multiple 2024 Priority Information Needs for the Yukon Region. The Gisasa River weir is the only lower Koyukuk River drainage escapement project. It provides data used to produce annual escapement estimates, assess the success of in-season management actions, and develop run reconstructions for the Yukon River basin. The project objectives are clear, measurable, and achievable, and the study design is technically sound. The investigators have the experience necessary to complete this project. This project exemplifies how capacity can be built through the Monitoring Program with the Tanana Chiefs Conference taking over project operations from the U.S. Fish and Wildlife Service. Additional capacity will be built by hosting Alaska Native Science and Engineering Program students and hiring local technicians to operate the weir. Project costs are higher than other regional weirs but seem reasonable for the proposed work. Letters of support were received from the U.S. Fish and Wildlife Service’s Northern Alaska Fish and Wildlife Field Office, Koyukuk/Nowitna/Innoko National Wildlife Refuge Complex, Alaska Department of Fish and Game, Loudon Tribal Council, and Ruby Tribal Council. Letters of support were not received from the Koyukuk or Nulato Tribal councils.

**Investigator Submitted Executive Summary:**

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<b>Project Number:</b>	24-204			
<b>Title:</b>	Henshaw Creek Chinook and Summer Chum Salmon Abundance and Run Timing Assessment, Kanuti National Wildlife Refuge, Alaska			
<b>Geographic Region:</b>	Yukon			
<b>Data Types:</b>	Stock Status and Trends			
<b>Principal Investigator:</b>	Brian McKenna, Tanana Chiefs Conference			
<b>Co-investigator:</b>	Nicole Farnham, Tanana Chiefs Conference			
<b>Project Request:</b>	<b>2024:</b> \$219,361	<b>2025:</b> \$219,361	<b>2026:</b> \$219,361	<b>2027:</b> \$219,361
<b>Total Request:</b>	\$877,444			

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**Issue:** Chinook and summer Chum salmon from Henshaw Creek contribute to the mixed-stock fisheries in the Yukon and Koyukuk rivers, including subsistence harvest for villages within the Kanuti National Wildlife Refuge (KNWR). Since 1997, Chinook and summer Chum salmon runs in the Yukon River

Basin have demonstrated an overall decline in productivity. These declines have led to harvest restrictions, fishery closures, and spawning escapements below management goals. In 2000, the Alaska Board of Fisheries classified Yukon River Chinook salmon as a stock of yield concern in response to low returns. A commercial fishery failure under the Magnuson-Stevens Fishery Conservation and Management Act (MSA) of 1976 was declared for Yukon River Chinook salmon in 2008 and 2009 due to a fisheries resource disaster characterized by low returns of Chinook salmon into the Yukon River. A second MSA fisheries resource disaster was declared for years 2010, 2011, and 2012 as low returns of Chinook salmon persisted. In 2014, Alaska Native communities and subsistence fishers throughout the Yukon River drainage passed a moratorium on the subsistence harvest of Chinook salmon in an attempt to conserve and protect their salmon resources. However, low returns of salmon have continued. Additionally, environmental factors such as increased water temperatures have exacerbated poor escapements in recent years. It is believed that en-route mortalities for summer chum salmon in 2019 were likely attributable to above average water temperatures. In 2020 and 2021, federal fisheries resource disasters were declared for Yukon River salmon fisheries due to continued low returns of Chinook and summer Chum salmon.

Throughout these low return years, in-season management efforts to protect salmon have been enacted by fishery managers in an attempt to meet biological escapement goals and to comply with international treaty obligations including border passage goals. These management actions have included intensified gear restrictions on subsistence fishers, and most recently complete closures to the subsistence fisheries in the Yukon River drainage. These management actions have resulted in hardships for Alaska Natives who rely heavily upon salmon as a subsistence food resource as well as a means to continue to practice their ancestral, cultural, and traditional way of life. The subsistence fishery was completely closed to all salmon fishing in 2021 and 2022, causing extreme hardships for communities who rely upon salmon resources for sustenance and wellness.

Because of the current state of the Yukon River salmon fisheries, and the complexity of mixed stock fisheries for both Chinook and summer Chum salmon, responsible management of these resources is paramount. In order to develop proper management strategies, managers need high quality data describing Chinook and summer Chum salmon escapements, as well as population specific information such as age, sex, and length (ASL) data, all of which this project will supply. Without accurate escapement estimates from multiple Yukon River tributaries, managers are unable to determine stock specific spawner-recruit relationships, and will lack data to evaluate how these systems respond to management actions. Furthermore, quality escapement data from tributaries throughout the Yukon River drainage can help fishery managers to better understand population specific contributions to the overall salmon runs in the Yukon River.

**Objectives:**

- 1) Enumerate daily passage of all fish species passing through the weir;
- 2) Estimate seasonal escapement of adult Chinook and summer Chum salmon using the Sethi and Bradley (2016) modeling techniques as necessary, and to describe their run timing;

- 3) Estimate age, sex and length (ASL) composition of the adult Chinook and summer Chum salmon escapements, for which the 95% confidence intervals of age-sex proportions are no larger than  $\pm 0.1$ ;
- 4) Consult with the Allakaket and Alatna Tribal Councils, and provide outreach and communication for the villages of Allakaket and Alatna;
- 5) Serve as an outreach platform for TCC and Kanuti National Wildlife Refuge staff to conduct a one-week culture and science camp for local youth.

**Methods:** A resistance board weir will be installed and operated on Henshaw Creek from mid-June through early August each year. A live trap, installed near the thalweg, will allow for age, sex, and length (ASL) sampling of adult salmon. All fish passing through the weir and live trap will be identified to the species taxonomic classification level, enumerated, and released alive. Salmon escapements and ASL data will be provided to managers and other interested parties daily. Scale samples from Chinook and summer Chum salmon will be sent to the Alaska Department of Fish and Game (ADF&G) for post-season age analyses.

**Partnerships/Capacity Building:** The partnerships TCC has developed with the USFWS, KNWR, ADF&G and the Allakaket and Alatna Tribal Councils present a great opportunity to build capacity within the TCC region and the local communities of the Upper Koyukuk River. This project enables TCC to provide information to fishery managers, local users, rural people, and the Regional Advisory Councils (RAC). The relationships TCC already has with federal and state resource management agencies will continue to be strengthened through the continuation of this project and are an important asset to the fishery program at TCC. This project has and will continue to provide an opportunity for the local communities of the Upper Koyukuk River to engage with the research and management of their salmon resources. TCC plans to continue to hire weir staff from these communities, which will provide much needed employment opportunities, and further develop the skills and investment of tribal members in fisheries management and assessment projects. Additionally, the annual culture and science camp will engage local youth with the issues facing fishery resource managers and provide Elders a chance to interact with the students and teach them traditional knowledge and skills. The involvement of youth in this project will help encourage them to consider fisheries management and conservation as a career, and pursue advanced education in fisheries science and management, ultimately building trust and increasing stakeholder resources and expertise to advocate for sustainable management of their regional fisheries.

This project has also allowed TCC to build and strengthen its partnership with the Alaska Native Science and Engineering Program (ANSEP). Through this project, TCC has been able to host nine ANSEP student interns between 2016 and 2022. TCC and ANSEP have developed a memorandum of understanding to continue this relationship for years 2024 – 2027. TCC will host one ANSEP student inter in each year. ANSEP interns will be able to visit the Henshaw Creek Weir project to learn about federal subsistence management and types of salmon monitoring projects such as a weir. This partnership has allowed youth starting their academic and career journey to gain valuable field experience and exposure to research and management of Yukon River fisheries.

**Technical Review Committee Justification:** The investigation plan requests four years of funding to continue operating the Henshaw Creek weir. The principal goal of this project is to provide long-term Chinook and summer Chum salmon escapement, run timing, and age, sex, and length data. The Federal nexus is clear, and the project addresses or contributes information to multiple 2024 Priority Information Needs for the Yukon Region. The Henshaw Creek weir is the only upper Koyukuk River drainage escapement project and provides valuable stock-specific population demographic information used to manage stocks throughout the drainage. The project objectives are clear, measurable, and achievable, and the study design is technically sound. The investigators have the experience necessary to complete this project. Capacity will be built by hiring local technicians to operate the weir, hosting Alaska Native Science and Engineering Program students, and conducting a culture and science camp that teaches local youth western science and traditional knowledge. Project costs are higher than other regional weirs but reasonable for the proposed work. Letters of support were received from the U.S. Fish and Wildlife Service’s Northern Alaska Fish and Wildlife Field Office, Kanuti National Wildlife Refuge, Alaska Department of Fish and Game, Evansville Tribal Council, Alatna Tribal Council, and Allakaket Village Council.

**Investigator Submitted Executive Summary:**

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<b>Project Number:</b>	24-250			
<b>Title:</b>	Traditional Ecological Knowledge and Life Histories of Salmon in Tributaries of the Yukon Coastal District			
<b>Geographic Region:</b>	Yukon			
<b>Data Types:</b>	Stock Status and Trends, Harvest Monitoring, and Traditional Ecological Knowledge			
<b>Principal Investigator:</b>	Dr. Jesse Coleman, Division of Subsistence, Alaska Department of Fish and Game			
<b>Co-investigator:</b>	Nate Cathcart, Division of Sport Fish, Alaska Department of Fish and Game			
<b>Project Request:</b>	<b>2024:</b> \$235,193	<b>2025:</b> \$83,279	<b>2026:</b> \$0	<b>2027:</b> \$0
<b>Total Request:</b>	\$318,472			

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**Issue:** Sustainable management of salmon fisheries requires accurate data about stock status and harvest. For several coastal systems located in the Yukon Delta National Wildlife Refuge, this information does not exist or is imprecise, outdated, or unsubstantiated. Managing these systems in season to conserve Chinook and chum salmon while providing opportunity for more abundant salmon species and nonsalmon fish species is not possible without accurate, up-to-date information about salmon life histories, run timing, and stock-of-origin. To address these information gaps, this study will combine biological observations with Traditional Ecological Knowledge and stream-specific harvest information for the Kun and Kashunuk rivers in the Coastal District of the Yukon Management Area.

**Objectives:**

- 1) Document traditional ecological knowledge held by Scammon Bay and Chevak residents about
  - a. the life histories of salmon in the Kun and Kashunuk rivers, respectively; and
  - b. the historical and contemporary uses of these river systems for subsistence fishing.

- 2) Document subsistence fish harvests and the locations of harvest in the Kun and Kashunuk rivers during the 2024 fishing season to build an understanding of patterns of harvest specific to these rivers, distinct from the total harvest within the Coastal District of the Yukon River.
- 3) Describe salmon life history patterns and stock-of-origin information for salmon species in the Kun and Kashunuk rivers. Specifically,
  - a. identify salmon and life stages present, along with associated species, with a focus on identifying adult spawning salmon and distributions throughout both rivers of adult spawning and juvenile rearing;
  - b. document run timing;
  - c. through genetic sampling, determine if stocks identify with Yukon River or other major stocks;
  - d. submit detailed nominations to the ADF&G Anadromous Waters Catalog for waterbodies supporting anadromous species, including seasonal efforts that document the fish assemblages present, including life stages of certain species;
  - e. share results publicly by the update of the online ADF&G Alaska Freshwater Fish Inventory mapper.

**Methods:** ADF&G researchers will work with the tribal councils in Chevak and Scammon Bay to identify local research assistants (LRAs) to help with ethnographic interviews and household surveys. Semi-structured interviews will be conducted with long-time residents in Chevak and Scammon Bay who have a history of fishing in the Kashunuk and Kun rivers, respectively. In 2024, researchers will administer a short salmon harvest survey to households who fished for subsistence in the Kun or Kashunuk rivers. The survey will document what species were harvested, the amounts, timing of harvest, gear types used, and location of harvest. These data will be the first attempt to quantify subsistence harvest information specific to these rivers. During interviews and surveys, maps of the Kun and Kashunuk rivers and nearby surrounding areas will be used as a visual reference. Fishing sites, observations of salmon and nonsalmon species, and other relevant information related to the topics of interest will be noted on the maps. Map data will later be digitized and formatted using ESRI ArcMap GIS software.

For biological data collection, ADF&G staff will also utilize the expertise of a LRA and local boat driver in each community. Staff and LRAs will reach sampling sites by boat and helicopter, conducting biological sampling throughout each drainage. Primary fish capture methods proposed to be used throughout the duration of field work include actively sampling with electrofishing in upper segments of the rivers and more passive sampling using gillnets in downstream reaches of each river. In each river, two 100' gillnets with 5.5" (for chum and pink salmon) and 7" (Chinook and chum) stretched mesh will be fished perpendicular to streambanks and set overnight and checked each day throughout the duration of the project. Researchers will also seek to rent fishing nets from local fishers to increase the mesh selectivity. Fishers in this area tend to use 6" or 7.5" stretched mesh to catch salmon. Opportunistic sampling methods include minnow trapping, aerial observations, and angling. Minnow traps will be set

opportunistically by boat or raft-electrofishing crews in habitats able to support juvenile salmon. Trapped juveniles will be visually identified, measured to fork length (mm), and will provide verification of rearing habitat. Aerial surveys will be performed opportunistically during helicopter travel to, from, and at raft-electrofishing sites with any observations georeferenced on a handheld GPS. If salmon are observed to be abundant, angling will be used as an alternative method of capture to reduce salmon mortality during sampling. Direct and indirect genetic sampling will be performed and then analyzed by the ADF&G genetics laboratory and Jonah Ventures Lab in Boulder, CO. Captured fishes from any method will be identified, measured to fork length, photographed when necessary (such as to document identity for verification of species), and recorded. Sex will be recorded for adult salmon. Any remarkable or informative notes (e.g., sex, spawning condition, disease) for other species will be noted. In addition, in each river, researchers will collect three water samples from six locations in each river for environmental DNA (eDNA) analysis, which will provide evidence of potential presence or absence of various salmon species to be detected. All captured adult salmon will be tissue sampled via clipping the axillary process, which will be saved for genetic analysis, and which will help determine if they are a unique stock from other Yukon River salmon. For observations of anadromous fishes, staff will generate nominations to the AWC.

**Partnerships/Capacity Building:** One of the objectives of this project is to facilitate information sharing between local residents and fisheries management agencies. Residents will have the opportunity to share their knowledge of salmon in their local rivers with researchers, and in return, project staff will share with the community what they learn through biological sampling. This two-way information exchange will help build a relationship between the community and managers to strengthen additional partnerships in the future.

Additionally, project staff will work with the tribal councils to hire LRAs, to select key respondents, and to facilitate community meetings. The LRAs will be trained in anthropological and biological sampling methods. This increases coordination between agencies, tribal entities, and community members: working together in data collection increases communication and leads to better understanding of local issues and local understanding of science and management issues.

**Technical Review Committee Justification:** Investigators responded to two priority information needs identified in the 2024 Notice of Funding Opportunity and the Federal nexus is clear: the project area is within the Yukon Delta National Wildlife Refuge. Objectives are clearly stated. Collaboration with and input from each community in the development of the semi-structured interview protocol would improve reliability of responses. Including explicit methodology regarding biological sampling in order to capture salmon run timing in the Kun and Kashunuk watersheds would strengthen the proposed research. Investigators are qualified to do the work, and the budget and timeline are reasonable for the work being proposed. By gaining a better understanding of salmon stocks in coastal systems, Federal and State managers may be able to offer targeted fishing opportunities for more abundant fish species that help remove pressure from mainstem, Canadian-origin Chinook Salmon stocks and Chum Salmon.

**Investigator Submitted Executive Summary:**



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<b>Project Number:</b>	24-251			
<b>Title:</b>	Content Analysis of Yukon Area Salmon Stakeholder Meetings			
<b>Geographic Region:</b>	Yukon			
<b>Data Types:</b>	Traditional Ecological Knowledge			
<b>Principal Investigator:</b>	Jesse Coleman, Subsistence Section, Alaska Department of Fish and Game			
<b>Co-investigator:</b>	None			
<b>Project Request:</b>	<b>2024:</b> \$79,383	<b>2025:</b> \$28,846	<b>2026:</b> \$0	<b>2027:</b> \$0
<b>Total Request:</b>	\$108,229			

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**Issue:** Public input on proposals and fishery management issues are essential to the federal regulatory process underlying the activities of the Federal Subsistence Management Program. Title VII, Section 805(c) of the Alaska National Interest Lands Conservation Act obligates the Federal Subsistence Board (FSB) to consider recommendations made by the ten Subsistence Regional Advisory Councils (RACs), which are made up of members of the public. The Office of Subsistence Management is responsible for providing information to the FSB about stakeholder input, which, due to volume, is often a cumbersome task. The analysis and delivery of this information could be improved by building a public repository of thematically coded transcript data in a standardized data storage format. This pilot project will develop a systematic review and analysis of stakeholder input to and recommendations made by the RACs during the period 2022–2023, as well as other relevant Yukon Area stakeholder forums where meeting data are available.

**Objectives:**

1. Describe emergent themes related to salmon expressed by members of the public during Yukon Area stakeholder meetings held from 2022–2023;
2. Estimate the amount of time and personnel needed for analysis of historical stakeholder data (pre-2022) based on time needed to analyze 2022–2023 meeting data;
3. Communicate summary results to stakeholders, the Federal Subsistence Board, RACs, and other agency staff and decision makers through presentations and a technical report.

**Methods:**

This project will serve as a pilot study to 1) produce a repository of data for the years 2022–2023, and 2) determine the scope of work for future iterations of analysis focusing on pre-2022 data. For this project, researchers will include existing stakeholder meeting transcripts or summaries that can readily be sourced from online archives or through requests to agency/organization staff. These include FSB, RAC, and Alaska Department of Fish & Game Advisory Committee (AC) meetings, and Yukon River Drainage Fisheries Association (YRDFA) inseason teleconferences. Data from winter RAC meetings in early 2024 will be included in the analysis. Because stakeholder meetings are public, Institutional Research Board approval is not required for this study. However, every effort will be made to protect the privacy of individuals who have given testimony.

The primary method used in this project is content analysis. Researchers will use a keyword-in-context search to identify text segments (sentences or paragraphs) and will assign codes from an *a priori* code list (i.e., deductive coding) based on the usage of the keyword in context. Then, researchers will conduct a second pass of the entire text and code deductively (i.e., identify topics not included in a *a priori* code list). Keyword and code lists will be developed as a team, and researchers will review the keyword and code lists with Office of Subsistence Management staff to ensure that the analysis will yield coded data that are useful to agency staff. During analysis, researchers will conduct intercoder agreement checks at regular intervals (e.g., after every 10 transcripts in a document group). Researchers will qualitatively describe code-to-code relationships and emergent themes using the analytical memoing process. The analytical memos will form the basis of the results chapter of the technical report.

**Partnerships/Capacity Building:** Since this project will not collect new data, our engagement with communities or tribes is expected to be minimal and incidental. However, researchers anticipate that we will be able to share our results with stakeholders, including tribal members, through presentations at meetings of the FSB, RACs, ACs, and YRDFA.

**Technical Review Committee Justification:** This is an innovative project to conduct content analysis of meeting-based stakeholder input about Yukon River salmon fisheries from transcripts and summaries of Federal, State, and Yukon River Drainage Fisheries Association meetings from a highly qualified and capable investigator. Content analysis has rarely been used to communicate stakeholder input to Federal Fisheries management in Alaska and will provide insights to improve and enhance Federal Subsistence Management. The inclusion of details on addressing dataset differences, researcher roles, interaction between agencies, stakeholder review of project results, and partnerships or capacity building would strengthen this proposal.

**Investigator Submitted Executive Summary:**

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<b>Project Number:</b>	24-252			
<b>Title:</b>	In-season Yukon River Subsistence Salmon Survey Program			
<b>Geographic Region:</b>	Yukon			
<b>Data Types:</b>	Harvest Monitoring and Traditional Ecological Knowledge			
<b>Principal Investigator:</b>	Catherine Moncrieff, Yukon River Drainage Fisheries Association			
<b>Co-investigator:</b>	Gabe Canfield, Yukon River Drainage Fisheries Association			
<b>Project Request:</b>	<b>2024:</b> \$87,887	<b>2025:</b> \$85,203	<b>2026:</b> \$81,932	<b>2027:</b> \$83,416
<b>Total Request:</b>	\$338,439			

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**Issue:** This project addresses the need for inclusive in-season management for Chinook salmon fisheries on the Yukon River and the need for updated surveying methods amidst the ongoing Chinook and chum salmon population collapse on the Yukon River, where in-season monitoring and surveying for both harvest data and traditional ecological knowledge is essential. Salmon are a critical resource for subsistence and commercial users in this region, which includes 14 Federal conservation units, and fisheries managers must have a means to gather input, assess harvests, and share information with stakeholders throughout the fishing season. This project also addresses the need expressed by community

members of expanding traditional ecological indicators and knowledge into management and reporting during salmon harvest closures. Fishers report traditional ecological knowledge, fishery success, observations, and concerns to a locally hired surveyor weekly, during the Chinook salmon run in their community. This information is shared anonymously by village with state and federal managers in preparation for the weekly in-season management teleconference.

**Objectives:**

1. Hire 10 local surveyors in 10 Yukon River drainage villages to work in-season to conduct interviews on an annual basis;
2. Build capacity of local surveyors in 10 Yukon River villages to participate in in-season fisheries management;
3. Conduct annual reviews pre-season and post-season to evaluate survey program and design for next season to maximize effectiveness of program.

**Methods:** Methods for this project include communication, outreach, survey technology, data analysis, and annual evaluations. Participating communities are selected based on suggestions, needs, and goals of the managers as well as the interest of the communities. The interview methodology follows the National Academy of Science’s *Principles for Conduct of Research in the Arctic* and will include informed consent for participants, to be conducted prior to the first interview. Privacy and confidentiality will be protected in the reporting. The in-season subsistence salmon survey methodology focuses on interviewing fishers weekly to collect qualitative information to provide managers with a real time assessment of the run and ecological indicators. In addition to collecting information from fishers, surveyors disseminate relevant information to fishers. For the data analysis, at the end of the season the PI will review all the survey forms and the compiled MS Excel spreadsheet and produce summary narrative reports.

**Partnerships/Capacity Building:** This project will build the capability and expertise of rural, locally hired surveyors by providing an opportunity to learn about Yukon River fisheries management, participate in local reporting and build their skills through focused annual trainings on communication with local fishers, river-wide fishers, and managers. Surveyors also attend the annual pre-season fisheries preparation meeting, increasing their fisheries knowledge and enhancing their ability to participate in the management of Federal subsistence fisheries. Surveyors will have an opportunity to interact with the Indigenous Sentinels Network at the pre-season fisheries preparation meeting. Partnerships will continue with the state and federal managers, village Tribal Councils, and individuals working as a part of the project.

**Technical Review Committee Justification:** This proposal requests to continue and improve the existing In-season Yukon River Subsistence Salmon Survey Program. The program hires local surveyors from ten Yukon River drainage communities to collect in-season salmon harvest information and fishery observations. Because of retention of past surveyors, only two new hires will be hired in 2024. The observations that surveyors gather are shared with communities and managers in real time. This information has been critical to managing the Yukon River salmon fishery and in providing information

needed to make management and fishing decisions. The proposal directly addresses several priority information needs in the region. It develops essential partnerships between communities and managers to strengthen the capacity of each in making decisions in support of both conservation and the continuation of subsistence uses. The program builds capacity through training local hires on both biological and anthropological research methods. The principal investigator has a proven record of completing Monitoring Program projects and in delivering high quality research products. The costs associated with this program appear reasonable, especially given the scope of data and anticipated impact on this fisheries’ management and local participation in the fisheries.

**Investigator Submitted Executive Summary:**

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<b>Project Number:</b>	24-256			
<b>Title:</b>	In-Season Salmon Management Teleconferences			
<b>Geographic Region:</b>	Yukon			
<b>Data Types:</b>	Harvest Monitoring and Traditional Ecological Knowledge			
<b>Principal Investigator:</b>	Serena Fitka, Yukon River Drainage Fisheries Association			
<b>Co-investigator:</b>	(TBD) Program Coordinator, Yukon River Drainage Fisheries Association			
<b>Project Request:</b>	<b>2024:</b> \$23,990	<b>2025:</b> \$23,990	<b>2026:</b> \$23,990	<b>2027:</b> \$23,990
<b>Total Request:</b>	\$95,960			

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**Issue:** The Yukon River is the longest river in Alaska starting from the western coast of the Bering Sea, traveling north through interior Alaska and into the Canadian headwaters. There are approximately 45 Tribal Councils in Alaska and 10 First Nations in Canada that harvest salmon along the Yukon River for food, culture and income. This project brings together these remote and rural villages that share the salmon resource. They share information with each other and also share first hand knowledge about what is happening on the fishing grounds with the Alaska Department of Fish and Game (ADF&G) and the U.S. Fish and Wildlife Service (USFWS) that manage the fisheries. This project hosts teleconferences in a cost-effective method of bringing people together on a regular and consistent basis to speak together weekly. The project is long-standing for 19 years and has become a fixture of in-season salmon management along the Yukon River. Changes are taking place along the Yukon River due to environmental conditions and management actions related to low Chinook and chum salmon runs. This project is needed to continue to gather information related to these changes during the fishing season. To specifically address the multi-regional priority needs, this project will focus on learning about changes taking place in the subsistence fishery resources and uses during the summer and fall fishing seasons. Fishermen will be asked all along the river to discuss the species they are targeting, their fishing locations, the fish quality, their harvest methods and means and methods of preservation. There is value in incorporating this local knowledge in fisheries management decision-making. Managers hear first hand about conditions on the river and learn about how communities are doing in their fishing efforts or they learn how prepared or unprepared communities are for the new and adaptive management strategies being utilized. This information assists fisheries managers in their daily management of the salmon resource, especially during years of conservative Chinook, and more recently, chum salmon management.

**Objectives:**

1. Host in-season salmon management teleconferences during the salmon fishing season;
2. Attend federal regional advisory council meetings to report on the teleconferences.

**Methods:** As this project has a long history of operation, YR DFA will design this project based on past performance and annual evaluations of the program. The agenda will be revised to accommodate the multi-regional priority needs in the subsistence reporting to gather information on will focus on learning about changes taking place in the subsistence fishery resources and uses during the summer and fall fishing seasons. Fishermen will be asked all along the river to discuss the species they are targeting, their fishing locations, the fish quality, their harvest methods and means and methods of preservation. Each spring, YR DFA will meet with ADF&G, USFWS, and other organizations to review the past year's performance and plan for the upcoming year by reviewing the agenda, the facilitation process and the summaries. The calls take place every Tuesday at 1 p.m. Alaska time and 2 p.m. Yukon time from the first week in June to the last week in August. Weekly summaries will be written by the Friday of each week a call takes place to send out to the public via e-mail and by posting on the YR DFA website.

YR DFA staff will report to a regional group of fishermen along the Yukon River on the information learned by attending federal regional advisory council meetings related to the multi-regional priority needs such as the species they are targeting, their fishing locations, the fish quality, their harvest methods and means and methods of preservation as well as any other changes that fishermen have seen take place due to impacts from changing environmental conditions and also management actions.

**Partnerships/Capacity Building:** This has been a long-standing project that promotes stakeholder coordination between YR DFA, fisheries management agencies and also with local people from the Yukon River villages.

This project builds capacity by inviting people from Yukon River communities to call in on a weekly basis to share information about the salmon fisheries and to learn from fisheries managers about their test fishery information and management assessments. By exchanging this information the different parties involved in this project strengthen their ability to work together for their mutual benefit of sustaining salmon populations and also for sustaining the fishing culture and livelihoods that exist on the Yukon River. The calls provide people through their participation with the skills and tools they need to define the problems and address issues they are having. By learning about the weekly test fishery information, local people hear first hand how management assesses the salmon returns to the river and the managers hear from local people their assessment of how the run seems and how they are addressing the current issue of low Chinook salmon runs.

**Technical Review Committee Justification:** Specific inclusion of the 2024 priority information needs addressed would strengthen this proposal. This project hosts weekly teleconferences, bringing people together from remote and rural villages that share salmon resources. The project has operated for 19 years and has become a fixture of in-season salmon management along the Yukon River. The project plan is appropriate and continues to increase capacity by providing rural subsistence users a forum to voice their concerns and observations and to participate in the management of the Yukon River subsistence fisheries, primarily Chinook and Chum salmon. It builds the capacity of managers to understand and respond to

local concerns. The budget and project duration are reasonable for the proposed work and to accomplish project objectives. The principal investigator is highly qualified and fully capable of addressing and achieving the objectives and reporting results in a timely manner.

**APPENDIX 1**  
**PROJECTS FUNDED IN THE YUKON REGION SINCE 2000**

Project Number	Project Title	Investigators
<b>Salmon Projects</b>		
00-003	Effects of <i>Ichthyophonus</i> on Chinook Salmon	UW
00-005	Tanana Upper Kantishna River Fish Wheel	NPS
00-018	Pilot Station Sonar Upgrade	ADF&G
00-022	Hooper Bay Test Fishing	ADF&G, NVHB
00-024	Pilot Station Sonar Technician Support	AVCP
00-025	Henshaw Creek Salmon Weir	USFWS
00-026	Circle and Eagle Salmon and Other Fish TEK	NVE
01-014	Yukon River Salmon Management Teleconferences	YRDFA
01-015	Yukon River Salmon TEK	YRDFA
01-018	Pilot Station Sonar Technician Support	AVCP
01-026	East Fork Andreafski River Salmon Weir	BSFA
01-029	Nulato River Salmon Weir	BSFA
01-032	Rampart Rapids Tagging Study	USFWS
01-038	Kateel River Salmon Weir	USFWS
01-048	Innoko River Drainage Weir Survey	USFWS
01-050	Kaltag Chinook Salmon Age-Sex-Length Sampling	COK
01-058	East Fork Andreafsky Weir Panel Replacement	USFWS
01-122	Lower Yukon River Salmon Drift Test Fishing	ADF&G, EMV
01-141	Holitna River Chinook, Chum and Coho Telemetry	ADF&G
01-177	Rampart Rapids Extension	USFWS
01-197	Rampart Rapids Summer CPUE Video	SZ
01-199	Tanana Fisheries Conservation Outreach	TTC
01-200	Effects of <i>Ichthyophonus</i> on Chinook Salmon	USGS
01-211	Upper Yukon, Porcupine, & Black River Salmon TEK	CATG
02-009	Pilot Station Sonar Technician Support	AVCP
02-011	Rampart Rapids Fall Chum Handling/mortality	USFWS
02-097	Kuskokwim & Yukon Rivers Sex-ratios of Juvenile & Adult Chinook	USFWS
02-121	Yukon River Chinook Salmon Genetics	USFWS, ADF&G, DFO
02-122	Yukon River Chinook & Chum Salmon In-season Subsistence	USFWS
03-009	Tozitna River Salmon Weir	BLM
03-013	Gisasa River Salmon Weir	USFWS
03-015	Phenotypic Characterization of Chinook Salmon Subsistence Harvests	YRDFA, USFWS
03-034	East Fork Andreafsky River Salmon Weir	USFWS
03-038	Yukon River Sub-district 5-A Test Fishwheel	BF
04-206	Tozitna River Salmon Weir	BLM

<b>Project Number</b>	<b>Project Title</b>	<b>Investigators</b>
04-208	East Fork Andreafsky River Salmon Weir	USFWS
04-209	Gisasa River Salmon Weir	USFWS
04-211	Henshaw Creek Salmon Weir	USFWS
04-217	Rampart Rapids Fall Chum Salmon Abundance	USFWS
04-228	Yukon River Chum Salmon Genetic Stock Identification	USFWS
04-229	Lower Yukon River Salmon Drift Test Fishing	ADF&G
04-231	Yukon River Chinook Salmon Telemetry	ADF&G
04-234	Kaltag Chinook Salmon Age-Sex-Length Sampling	COK
04-251	Fort Yukon Traditional Ecological Knowledge Camp	TCC, CATG, ADF&G
04-255	Yukon River Salmon Fishery Traditional Ecological Knowledge	NPS
04-256	Tanana Conservation Outreach	TTC, USFWS
04-263	Yukon River Salmon Management Teleconferences	YRDFA
04-265	Yukon River TEK of Customary Trade of Subsistence Fish	YRDFA
04-268	Hooper Bay Subsistence Monitoring	ADF&G, HBTC
05-203	Yukon River Coho Salmon Genetics	USFWS
05-208	Anvik River Salmon Sonar Enumeration	ADF&G
05-210	Tanana River Fall Chum Salmon Abundance	ADF&G
05-211	Henshaw Creek Salmon Weir	TCC, USFWS
05-254	Yukon River Salmon Inseason Subsistence Harvest Monitoring	USFWS
06-205	Yukon River Chum Salmon Mixed Stock Analysis	USFWS
07-202	East Fork Andreafsky River Salmon Weir	USFWS
07-204	Lower Yukon River Salmon Drift Test Fishing	ADF&G
07-207	Gisasa River Salmon Weir	USFWS
07-208	Tozitna River Salmon Weir	BLM
07-209	Yukon River Salmon Management Teleconferences	YRDFA
07-210	Validation of DNA Gender Test Chinook Salmon	USFWS
07-211	Kaltag Chinook Salmon Age-Sex-Length Sampling	COK
07-253	Yukon River Salmon Harvest Patterns	RWA, AC
08-200	Kaltag Chinook Salmon Age-Sex-Length Sampling	COK
08-201	Henshaw Creek Salmon Weir	TCC
08-202	Anvik River Chum Salmon Sonar Enumeration	ADF&G
08-253	Yukon River Teleconferences and Inseason Management	YRDFA
10-200	Yukon River Chinook Salmon Run Reconstruction	BUE
10-205	Yukon River Chum Salmon Mixed-stock Analysis	USFWS
10-206	Nulato River Salmon Assessment	TCC
10-207	Gisasa River Chinook and Summer Chum Salmon Assessment	USFWS
12-202	Henshaw Creek Abundance and run timing of adult salmon	TCC
12-204	Anvik River Sonar Project	ADF&G
12-205	Kaltag Chinook Salmon Sampling Project	KAL



Project Number	Project Title	Investigators
12-251	In-season Salmon Teleconferences and Interviews	YRDFA
14-201	Gisasa R Salmon Video	USFWS
14-202	E Fork Andreafsky Salmon	USFWS
14-203	Gisasa R Salmon	USFWS
14-206	Yukon R Coho Salmon	USFWS
14-207	Yukon R Chum Salmon	USFWS
14-208	Koyukuk R Chum Salmon	USFWS
14-209	Henshaw Crk Salmon	TCC
16-204	Henshaw Creek Abundance and run timing of adult salmon.	TCC
16-251	Seasonal habitats, migratory timing and spawning populations of mainstem Yukon River Burbot	ADF&G
16-255	Yukon River In-Season Community Surveyor Program	YRDFA, USFWS
16-256	In Season Salmon Management Teleconferences	YRDFA
18-201	East Fork Andreafsky River Chinook and summer Chum Salmon abundance and run timing, Yukon Deltan National Wildlife Refuge	
18-202	Gisasa River Chinook and summer Chum Salmon abundance and run timing assessment, Koyukuk National Wildlife Refuge, Alaska	USFWS
18-250	Documentation of salmon spawning and rearing in the Upper Tanana River Drainage	ADF&G
18-251	Traditional knowledge of anadromous fish in the Yukon Flats with a focus on the Draanjik Basin	TCC
18-252	Subsistence salmon networks in Yukon River communities	ADF&G
20-200	Yukon River Coho Salmon Radio Telemetry	ADF&G, USFWS
20-201	Application of mixed-stock analysis for Yukon River chum salmon	USFWS
20-204	Abundance and Run Timing of Adult Salmon in Henshaw Creek, Kanuti National Wildlife Refuge, Alaska	TCC
20-251	In-season Yukon River Subsistence Salmon Survey Program	YRDFA, USFWS
20-252	Customary Trade in the Lower and Middle Yukon River	ADF&G
20-256	Yukon River In-Season Salmon Management Teleconferences	YRDFA
22-201	East Fork Andreafsky River Chinook and summer Chum salmon abundance and run timing	USFWS
22-202	Gisasa River Chinook and summer Chum Salmon abundance and run timing assessment	USFWS, TCC
22-204	Western Alaska Coho Salmon Genetic Baseline Development	ADF&G
22-251	Presence and Use of Salmon in the Pastolik and Pastoliak Rivers	ADF&G
<b>Nonsalmon Fish Projects</b>		
00-004	Humpback Whitefish/Beaver Interactions	USFWS, CATG
00-006	Traditional Ecological Knowledge Beaver/Whitefish Interactions	ADF&G, CATG
00-021	Dall River Northern Pike	ADF&G, SV
00-023	Upper Tanana River Humpback Whitefish	USFWS
01-003	Old John Lake TEK of Subsistence Harvests and Fish	ADF&G, AV, USFWS

Project Number	Project Title	Investigators
01-011	Arctic Village Freshwater Fish Subsistence Survey	ADF&G, AV, USFWS
01-100	Koyukuk Non-salmon Fish TEK and Subsistence Uses	ADF&G, TCC
01-140	Yukon Flats Northern Pike	ADF&G, SV
01-238	GASH Working Group	USFWS
02-006	Arctic Village Freshwater Fish Subsistence	ADF&G, NVV
02-037	Lower Yukon River Non-salmon Harvest Monitoring	ADF&G, TCC
02-084	Old John Lake Oral History and TEK of Subsistence	USFWS, AV, ADF&G
04-253	Upper Tanana Subsistence Fisheries Traditional Ecological Knowledge	USFWS, UAF, ADF&G
04-269	Kanuti NWR Whitefish TEK and Radio Telemetry	USFWS, RN
06-252	Yukon Flats Non-salmon Traditional Ecological Knowledge	ADF&G, BLM, USFWS, CATG
06-253	Middle Yukon River Non-salmon TEK and Harvest	ADF&G, LTC
07-206	Innoko River Inconnu Radio Telemetry	USFWS, ADF&G
08-206	Yukon and Kuskokwim Coregonid Strategic Plan	USFWS, ADF&G
08-250	Use of Subsistence Fish to Feed Sled Dogs	RN, AC
10-209	Yukon Delta Bering Cisco Mixed-stock Analysis	USFWS
10-250	Yukon Climate Change Impacts on Subsistence Fisheries	RN
12-200	Alatna River Inconnu Population Structure	USFWS
12-207	Yukon Bering Cisco Spawning Origins Telemetry	USFWS
14-252	Lower Yukon Whitefish	ADF&G
14-253	Upper Yukon Customary Trade	YRDFA
16-203	Bering Cisco Spawning Abundance in the Upper Yukon Flats, 2016–2017	ADF&G, USFWS
16-205	Burbot Population Assessments in lakes of the Upper Tanana and Upper Yukon River Drainages	NPS
20-202	Evaluating dart and telemetry tags in an effort to track run timing and migration patterns of Yukon River Arctic lamprey	USFWS, UAF, ADF&G
22-252	Combining Traditional Ecological Knowledge & Biological Sampling to Enhance Understanding of Humpback Whitefish and other Non-salmon Fishes in the Upper Koyukuk Region	ADF&G, TCC, USFWS

Abbreviations: AC = Alaskan Connections, ADF&G = Alaska Department of Fish and Game, AVCP = Association of Village Council Presidents, AV = Arctic Village, BF = Bill Fliris, BUE = Bue Consulting, BLM = Bureau of Land Management, BSFA = Bering Sea Fisherman's Association, CATG = Council of Athabascan Tribal Governments, COK = City of Kaltag, DFO = Department of Fisheries and Oceans, EMV = Emmonak Village Council, KAL = City of Kaltag, NPS = National Park Service, LTC = Loudon Tribal Council, NVE = Native Village of Eagle, NVHB = Native Village of Hooper Bay, NVV = Native Village of Venetie, RN = Research North, RW = Robert Wolfe and Associations, SVNRC = Stevens Village, SZ=Stan Zuray, TCC = Tanana Chiefs Conference, TTC = Tanana Tribal Council, UAF = University of Alaska Fairbanks, USFWS = U.S. Fish and Wildlife Service, USGS = U.S. Geological Survey, UW = University of Washington, and YRDFA = Yukon River Drainage Fisheries Association.

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# Alaska Department of Fish and Game Division of Subsistence

Jesse Coleman & Katie Hayden  
Subsistence Resource Specialists, Northern Region

Presentation to the Yukon-Kuskokwim Delta RAC  
October 10-12, 2023



## Kuskokwim Management Area Postseason Salmon Harvest Survey Project

**Funder:** OSM

**Background:** Conducted since 1960; DFG/ONC 20+ years

**Purpose:** To estimate subsistence salmon harvest in Kuskokwim River communities

**Sampling:**

- 2022 season:
  - In person: 17 communities
  - Phone: 10 All upper river villages except Crooked Creek.
- BET = simple random sample of 25% of households

**2023 Season**

- Attempt to visit all communities in person
- Outreach to village river wide has started



## Natural Indicators of Salmon in the Upper Kuskokwim River

**Funder:** USFWS Office of Subsistence Management (OSM)

**Purpose:**

- Review historical abundance, distribution, and health of salmon populations
- Document natural indicators of salmon run abundance and timing
- Document and incorporate local and traditional ecological knowledge into management

**Communities:** McGrath, Takotna, Nikolai

**Work to date:**

- June 2022: data collection began
- Interview analysis underway
- Summer 2023: additional fieldwork



## Lower Kuskokwim Tributaries

**Funder:** Alaska Sustainable Salmon Fund

**Study Period:** June-July 2021 and 2022

**Study Area:**

- Gweek River
- Johnson River
- Kialik River
- Eenayarak River

**Purpose:**

- Estimate subsistence salmon fishing effort and harvest on non-spawning tributaries
- Gain a better understanding of the importance of these harvests to LK community residents



## Lower Kuskokwim Tributaries (continued)

### Work to date:

- 2021
  - Field research during the 2021 season yielded 7 harvest surveys and 0 ethnographic interviews
  - Strict sampling design prevented researchers from acquiring adequate harvest data.
- 2022
  - The 2022 Post Season Survey included questions about fishing in the four nonspawning tributaries of the lower Kuskokwim River
  - Communities that reported the highest use of the nonspawning tributaries were selected for ethnographic data collection



## Lower Kuskokwim Tributaries (continued)

### Work to date (continued):

- 2023
  - We reached out and received support for ethnographic work in the communities of Nunapitchuk, Kasigluk, Tuntutuliak and Eek
  - Ethnographic data was collected through the winter and spring months of 2023
  - Report is in progress and will be completed by February 2024





## Yukon Comprehensive Harvest Surveys

**Funder:** Pacific Salmon Treaty Implementation Fund

**Purpose:**

- Fill data gaps
- Update harvest data

**Work to date:**

- 2022: Hooper Bay, Chevak
- 2023: Huslia, Koyukuk

**Upcoming work:**

- 2024: Kotlik, Alakanuk (tentative)
- 2025: Tetlin, Tanacross (tentative)



## Use of Salmon in the Pastolik and Pastoliak Rivers

**Funder:** OSM

**Purpose:**

- Document salmon presence/habitat use
- Harvest surveys with Kotlik residents
- LTK/TEK interviews with Kotlik residents

**Work to date:**

- Biological sampling complete
- Household surveys and interviews in early 2024



## Customary Trade in the Middle and Lower Yukon River

**Funder:** OSM

**Purpose:**

- Document and understand patterns of resource exchange in the Yukon River drainage
- Describe the role that salmon declines have played in customary trade and barter

**Work to date:**

- Household surveys and interviews
- Middle river: Galena and Kaltag, 2021-22
- Lower river: Mountain Village and Nunam Iqua, 2023

## Contact us

### Kuskokwim Region

Katie Hayden

Subsistence Resource Specialist

Phone: (907) 371-6422

Email: [katie.hayden@alaska.gov](mailto:katie.hayden@alaska.gov)

### Yukon/Interior Region

Jesse Coleman

Subsistence Resource Specialist

Phone: (907) 987-9006

Email: [jesse.coleman@alaska.gov](mailto:jesse.coleman@alaska.gov)

For technical papers and subsistence data, please visit us at:

[www.adfg.alaska.gov/sb/CSIS/](http://www.adfg.alaska.gov/sb/CSIS/)





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## United States Department of the Interior

FISH AND WILDLIFE SERVICE  
Togiak National Wildlife Refuge  
P.O. Box 270  
Dillingham, Alaska 99576  
Phone 907-842-1063  
Fax 907-842-5402



### INFORMATION BULLETIN - August 2023

***Kanektok River salmon weir removal*** Contact: Pat Walsh

The Alaska Department of Fish and Game operated a salmon weir on Togiak Refuge on the Kanektok River from 2002-2015. The weir has been inoperative since 2016 due to lack of funding. In spring 2022, ADF&G began removing the weir materials and field camp. It is anticipated that weir removal will be complete by fall 2023.

***Aerial Salmon Survey*** Contact: Truett Cawfield

Togiak National Wildlife Refuge initiated an aerial survey of the Salmon River which flows into the Kuskokwim Bay. The aim of this survey is to establish a baseline for salmon run timing and run size for this system. A weir was constructed on the Salmon River in spring 2023 and is managed by the Kenai Fish and Wildlife Conservation Office, who is partnering with the Togiak Refuge staff on this project. The weir will be utilized to ensure the accuracy and precision of aerial surveys.

***Arctic Char Population Inventory*** Contact: Truett Cawfield

Togiak Refuge has developed a multi-year study to inventory Arctic char populations throughout the Refuge. This species was previously confirmed to occur in 27 lakes. Since the beginning of the study 36 lakes have been sampled, and Arctic char occurrence has been documented in 14 new lakes. We have collected size and genetic information from 359 fish and provided the UAF museum with voucher specimens. If you have any first-hand knowledge of small or unique Arctic char populations and would be willing to share that information please contact Truett Cawfield at the Togiak Refuge office.

***Mulchatna Caribou*** Contact: Andy Aderman

Togiak Refuge assisted ADF&G with telemetry and law enforcement flights, satellite data acquisition, data entry and database management. A July 2023 post-calving survey estimated the Mulchatna herd at 12,507 caribou, slightly up from 12,112 estimated in 2022, and well below the population objective of 30,000-80,000 caribou.

Togiak Refuge Manager Moos, under authority delegated by the Federal Subsistence Board, closed caribou hunting and closed Federal public lands in the RC503 hunt area for caribou hunting.

Togiak staff assisted ADF&G with caribou capture in March 2023 in the area north of Goodnews Bay. Fourteen adult cows were radiocollared and all appeared to be in good physical condition. On July 12 and July 18, 2023 we located 23 of 26 collars in 22 groups. We also observed 13 uncollared groups ranging from 1-45 caribou. The combined total for all groups was a minimum of 639 caribou. A composition survey in early October 2022 found 44.4 bulls and 46 calves per 100 cows.

***Nushagak Peninsula Caribou*** Contact: Andy Aderman

A photocensus of the Nushagak Peninsula Herd on July 1, 2023 found a minimum of 470 caribou in 4 groups which resulted in a total population estimate of 511 +/- 86 (470-597) caribou at the 95% confidence interval. A similar effort in 2022 found a minimum of 359 caribou in 7 groups resulting in an estimate of 442 +/- 118 (359-560) caribou. A composition survey in early October 2022 estimated 41.3 bulls and 63.3 calves per 100 cows. The calf to cow ratio was highest since 1994. The bull to cow ratio was similar to 2021.

The Nushagak Peninsula Caribou Planning Committee met via teleconference July 25, 2023 and reviewed results of previous hunts, population and lichen monitoring, and the harvest strategy. Following the Harvest Strategy adopted in 2019, the Committee favored having a hunt with a total of 110 permits, with 50 permits going to Dillingham: 20 permits each to Manokotak and Togiak, 10 permits to Aleknagik, and 5 permits each to Clark's Point and Twin Hills. Refuge Manager Moos' decision was to open the Federal caribou hunt on the Nushagak Peninsula from August 1-March 15 with a harvest objective of 70 caribou, a harvest limit of 1 caribou per hunter, and permits going to each of the 6 communities as described above. We plan to deploy additional radiocollars on caribou in this area in April 2024.

***Nushagak Peninsula Lichen Monitoring*** Contact: Andy Aderman

Lichen cover on the Nushagak Peninsula declined from 48.1% in 2002 to 18.7% by 2022. Surveys estimated cover had declined 2.3% from 2002 to 2007; 6.3% from 2007 to 2012; 8.9% from 2012 to 2017, and 11.4 from 2017 to 2022. The declining trend from 2002 on, suggests lichen cover could decrease to a low enough level in the next 10 years, such that caribou may abandon the Nushagak Peninsula. It is likely Nushagak Peninsula caribou would leave the peninsula before lichens were depleted. Over the past three winters, most of the Nushagak Peninsula Caribou Herd have wintered in the area near Tvativak Bay from late December to late March, outside the current federal hunt boundary.

***Moose*** Contact: Andy Aderman

In 2023, 20 of 22 collared adult cows produced a minimum of 36 calves (4 singles and 16 sets of twins) suggesting a production rate of 164 calves per adult 100 cows. Adult twinning rate was 80%. Fall calf survival will be determined in November.

During the 2022-2023 fall moose hunts in Unit 17A (RM 571, RM 573, and DM 570), hunters reported harvesting 38 moose (36 bulls, 2 cows) which was down from the 60 moose (55 bulls, 5 cows) taken the previous year. During the 2022-2023 winter moose hunts in Unit 17A (RM 575 and RM 576), hunters reported harvesting 50 moose (24 bulls, 26 cows) which way down from the 86 moose (28 bulls, 58 cows) taken the previous year.

Togiak Refuge and ADF&G-Dillingham staff conducted a moose survey in Unit 17A and southern Unit 18 (south of and including the Goodnews River drainage) from October 17-23, 2022. In Unit 17A the population estimate was 1,976  $\pm$ 358 (1,618-2,334) which was 7.6% lower than the October 2019 estimate of 2,139  $\pm$ 495 (1,644-2,634). In the Goodnews drainage the moose population estimate was 464  $\pm$ 106 (358-570). Togiak Refuge and ADF&G-Bethel staff conducted a moose count in southern Unit 18 (south of and including the Goodnews River drainage) from February 27-28, 2020 and counted a minimum of 450 moose.

***The relationships of wolf and brown bear predation with moose population density and growth at Togiak National Wildlife Refuge and BLM Goodnews Block, Alaska*** Contact: Pat Walsh

In summer 2014, Togiak Refuge, the USFWS Genetics Lab, ADF&G, and BLM initiated a study to understand the effects of wolf and brown bear predation in regulating the populations of moose. The study relies on radio telemetry and stable isotope analysis. Our approach is to relate the predation impact by

wolves and bears on moose at varying levels of moose population density. This requires having population estimates of both bears and wolves. We estimate the brown bear population totals approximately 855 bears (95% confidence limits: 664 – 1,154). Using radio telemetry, we estimate the wolf population varies widely but averages 90-100 wolves consisting of approximately 12 packs averaging 7 wolves plus approximately 10% of wolves unaffiliated with packs. Using these demographic data, we will model wolf and bear predation on moose based on the diet composition of both species determined through analysis of carbon and nitrogen isotopes occurring in wolf and bear tissues. Lab analyses are complete and modelling is currently underway.

**Walrus** Contact: Pat Walsh

Togiak National Wildlife Refuge has monitored Pacific walrus use of coastal haulouts since 1985 using a variety of methods and an increasing level of monitoring intensity. Monitoring methods have included daily ground counts restricted to spring-fall months (1985-2008), infrequent aerial surveys (2003-2012), and year-round time lapse photography using remote cameras (2010-2021). Increasing monitoring effort has resulted in an increasing understanding of when and where walruses use Togiak Refuge haulouts. Peak annual haulout counts have generally declined from 1985 through 2018, then for the past three years have returned to levels observed in the 1990s. The majority (80%) of haulout activity on Togiak Refuge haulouts takes place September – November and occurs on the Hagemeister Island haulout.

**Seabirds** Contact: Janelle Trowbridge

The abundance of black-legged kittiwakes, common murre, and pelagic cormorants has been monitored at Cape Peirce since 1990. Monitoring was not conducted in 2015 and 2020. This year's average number of birds counted on study plots was 1052 kittiwakes, 564 murre, and 33 cormorants. Over the past 30 years, the average number of birds counted on study plots are 1,040 kittiwakes (range = 238-1,906), 2,378 murre (range = 53-4,490), and 82 cormorants (range = 14-149). Abundance has been below average for kittiwakes since 2021, murre since 2014, and cormorants since 2016.

**Invasive Aquatic Plant Surveys** Contact: Kara Hilwig

*Elodea spp.* is a highly invasive and difficult to control aquatic plant implicated in the degradation and loss of fish habitat across the world. It was confirmed present in Alaska in 2009 and is now found in several waterbodies across the State. Refuge and Park staff are cooperating to complete the sixth *Elodea* survey within the Togiak Refuge, Wood-Tikchik State Park and the surrounding area. This year aquatic and terrestrial invasive plants will be evaluated. Surveys will begin in August.

**Water Temperature Monitoring** Contact: Truett Cawfield

Stream temperature monitoring has been conducted at 21 locations on 14 rivers in Togiak Refuge since August 2001. Continuous hourly water temperatures were recorded at each site. Over 2.4 million temperature records were collected, quality-graded, and digitally stored in a database. The warmest month each year was July. The warmest temperatures were observed in the Kukaktlim Lake outlet and the coolest temperatures were observed in the Weary River. Project reports are available upon request.

In addition to the stream temperature monitoring, we monitored lake temperature using moored all-season temperature arrays to record hourly temperatures throughout the water column in 2 lakes since 2011. The lakes differed significantly in surface area, water volume, and elevation with Ongivinuk Lake being smaller and at higher elevation than Snake Lake. We observed variation in lake ice timing and fewer days of ice cover on Snake Lake than on Ongivinuk Lake. We observed that both lakes turn over in spring and fall. We observed water temperatures in excess of standards for fish rearing and migration habitats during summer down to 12.5 m in Snake Lake and down to 5 m in Ongivinuk Lake.

Project reports are available upon request.

**Quantifying River Discharge** Contact: Pat Walsh

Togiak Refuge and the USFWS Water Resources Branch have worked cooperatively since 1999 to acquire hydrologic data of the flow regime (magnitude, duration, timing, frequency, and rate of change) and water quality on rivers throughout the Refuge. A network of stream discharge gages collected stream flow data from 1999-2005 at 20 locations. A subset of five of these stations continued to collect data through fall 2009, after which three of the five stations were removed. We continue to monitor discharge in the Togiak and Kulukak Rivers, although due to Covid-19 travel restrictions, the gages were inoperative in 2020-2021. Both stations were brought back into operation in July 2022.

***Education and Outreach*** Contact: Terry Fuller

At the time of this writing, Togiak Refuge's education and outreach efforts have slowly started to resume. Togiak Refuge normally has a very active education and outreach program. From an education standpoint, during a normal school year, Refuge staff conducts an average of 60+ classroom visits throughout 12 Bristol Bay villages annually, Classroom visits include lessons about the Migratory Bird Calendar, National Wildlife Refuge Week, careers in natural resource conservation, and numerous teacher requested classroom presentations. The Refuge works with several school districts and private schools including the Southwest Region, Lower Kuskokwim, Dillingham City school districts and the Dillingham 7<sup>th</sup> Day Adventist School. Some topics often include bird walks, wilderness survival skills, archery, salmon life cycles, aquatic resources, and bear safety. School visits started back up early in 2022 and we anticipate even more during the new school year. The refuge website, one of our educational tools, is undergoing a migration to a new platform, and we are excited about better access it will allow and the content it will provide.

Togiak Refuge, in partnership with ADF&G and the Southwest Region School District, also conducts hunter safety courses throughout western Bristol Bay Villages. Classes have impacted more than 100 students in Manokotak, Dillingham, Twin Hills, Togiak, Aleknagik and Quinhagak. The refuge plans to continue these courses, as requested, in 2023 and is in the planning stages to add a National Archery in School Program to its offerings in the future, pending a return to normal outreach efforts.

The Refuge education program also produces Bristol Bay Field Notes, an award-winning weekly radio program on KDLG 670 AM that covers an array of outdoor-related topics (past episodes can be found on KDLG's website. Togiak Refuge has an active and heavily followed Facebook page which disseminates information on a daily basis to a rapidly growing global audience.

The Refuge normally hosts an Open House event, in celebration of National Public Lands Day and National Hunting and Fishing Day. This year that event was pushed back to October 2022. Approximately 100 people attended; on hand were a wide range of displays, hands on activities, food and beverages.

Togiak Refuge staff continues to work with the Alaska Migratory Bird Co-Management Council and the ADF&G to conduct household subsistence waterfowl surveys. Refuge staff and volunteers conduct surveys in a number of southwest Alaska communities, Aleknagik, Dillingham, Togiak, Clark's Point, Newhalen, Chignik Lake and Chignik Lagoon. Due to budgetary constraints those surveys are on hold for this year. .

***Cape Peirce Marine Science and Yup'ik Culture Camp*** Contact: Terry Fuller

This camp was scheduled to happen in July 2022 but was cancelled due to weather. Most recent camp: In July 2019 an enthusiastic group of seven area junior high students representing three villages (Dillingham, Togiak and Platinum) traveled to Cape Peirce for this camp. Students were able to observe seabirds, marine mammals, and learn how field work is conducted, as well as learning about the food webs and ecological relationships found at the Cape Peirce area. Students also learned about traditional Yup'ik uses of animals and plants and about Native survival skills. This camp is designed to help students gain a better under-

standing of the biological diversity of a marine ecosystem. It also strengthens their sense of stewardship for local natural resources. Other topics at this camp included tide pools, wilderness survival skills, archery, bear safety, Leave No Trace camping practices and careers with USFWS. Refuge Interpreter Jon Dyasuk spoke with students about traditional resource uses. A special offering for this year's camp was the chance for the students to try their hand drawing with Colorado pastel artist Penny Creasy. Traditional councils and school districts from throughout western Bristol Bay are cooperators with this camp.

***Southwest Alaska Science Academy (Salmon Camp)*** Contact: Terry Fuller

\*Note: Was not held during 2022. Most recent: In July 2019, Togiak Refuge helped with the 19<sup>th</sup> year of a summer camp aimed at teaching middle and high school students about fisheries science and the importance of salmon to our ecosystem. Students were selected from the Bristol Bay region. During the camp students worked in the field alongside fisheries professionals. Cooperators with the Refuge on this project included the Bristol Bay Economic Development Corporation, Bristol Bay Science and Research Institute, University of Alaska, University of Washington School of Fisheries, the Dillingham City and Southwest Region school districts, and ADF&G.

***Summer Outdoor Skills and River Ecology Float Camp*** Contact: Terry Fuller

This camp was a modified camp held during mid-August 2022. The camp still used rafting as one of the major activities, but it was a stationary camp at Pungokebuk Lake for six junior high students. Students observed and learned about the many fish, wildlife and plant species found around Pungokebuk Lake. Rafting skills, water safety, different angling practices (Catch and Release), Leave No Trace camping practices and bear safety were topics during the trip. Students also participated in other outdoor activities such as wilderness survival skills. This camp helps students grasp the biological diversity of riparian ecosystems and the importance of salmon as a nutrient source, while developing a deeper sense of stewardship for local natural resources. Traditional councils and school districts in western Bristol Bay are cooperators with this camp.

***Division of Refuge Law Enforcement*** Contact: Derek Thompson

Federal Wildlife Officers work to protect wildlife and habitat and make refuges safe places for visitors and staff. Regional Law Enforcement Specialist (RLES) Derek Thompson is stationed in Soldotna, AK. He is the Officer responsible for patrolling Togiak NWR and providing Regional assistance and guidance for the AK Division of Refuge Law Enforcement (DRLE). DRLE has recruited a new officer for TNWR who will arrive in Dillingham this winter. RLES Thompson encourages anyone with questions regarding USFWS law enforcement to contact him; and reminds all who enjoy and rely upon the resources in the Bristol Bay Region the USFWS Division of Refuge Law Enforcement is here to help protect those resources for future generations.

### ***Staff Update***

The Fisheries Biologist position was filled by Jonathan Cawfield (aka Truett) in May. Truett comes from South Texas, having completed an acoustic telemetry study on marine fishes in fulfillment of a Master of Science degree in 2021.

Budget Analyst Yong Ellis has retired from the Service effective 12/30/2022. We are happy to have LoRae Helms as our new Budget Analyst. LoRae moved to Dillingham in November from Montana. We are excited to have her as part of our refuge team and she will also provide budget coverage for the Alaska Region Fire Program. Supervisory Fish and Wildlife Biologist Patrick Walsh will retire from the Service effective 09/23/2023.

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# Winter 2024 Regional Advisory Council Meeting Calendar

*Last updated 5/2/2023*

Due to travel budget limitations placed by Department of the Interior on the U.S. Fish and Wildlife Service and the Office of Subsistence Management, the dates and locations of these meetings will be subject to change.

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					<i>Mar. 1</i>	<i>Mar. 2</i>
<i>Mar. 3</i>	<i>Mar. 4 Window Opens</i>	<i>Mar. 5</i>	<i>Mar. 6</i>	<i>Mar. 7</i>	<i>Mar. 8</i>	<i>Mar. 9</i>
<b>All Regions Meeting (Anchorage)</b>						
<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>
<i>Mar. 17</i>	<i>Mar. 18</i>	<i>Mar. 19</i>	<i>Mar. 20</i>	<i>Mar. 21</i>	<i>Mar. 22</i>	<i>Mar. 23</i>
<i>Mar. 24</i>	<i>Mar. 25</i>	<i>Mar. 26</i>	<i>Mar. 27</i>	<i>Mar. 28</i>	<i>Mar. 29 Window Closes</i>	<i>Mar. 30</i>





# Fall 2024 Regional Advisory Council Meeting Calendar

*Last updated 3/3/2023*

Due to travel budget limitations placed by Department of the Interior on the U.S. Fish and Wildlife Service and the Office of Subsistence Management, the dates and locations of these meetings will be subject to change.

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Aug. 18	Aug. 19 <b>Window Opens</b>	Aug. 20	Aug. 21	Aug. 22	Aug. 23	Aug. 24
	<b>NSRAC (Utqiagvik)</b>					
Aug. 25	Aug. 26	Aug. 27	Aug. 28	Aug. 29	Aug. 30	Aug. 31
Sep. 1	Sep. 2 <b>Labor Day Holiday</b>	Sep. 3	Sep. 4	Sep. 5	Sep. 6	Sep. 7
		<b>KARAC (Unalaska)</b>				
Sep. 8	Sep. 9	Sep. 10	Sep. 11	Sep. 12	Sep. 13	Sep. 14
Sep. 15	Sep. 16	Sep. 17	Sep. 18	Sep. 19	Sep. 20	Sep. 21
Sep. 22	Sep. 23	Sep. 24	Sep. 25	Sep. 26	Sep. 27	Sep. 28
Sep. 29	Sep. 30	Oct. 1	Oct. 2	Oct. 3	Oct. 4	Oct. 5
		<b>WIRAC (Aniak)</b>				
Oct. 6	Oct. 7	Oct. 8	Oct. 9	Oct. 10	Oct. 11	Oct. 12
		<b>EIRAC (Tanana)</b>		<b>SCRAC (Anchorage)</b>		
Oct. 13	Oct. 14 <b>Columbus Day Holiday</b>	Oct. 15	Oct. 16	Oct. 17	Oct. 18	Oct. 19
		<b>YKDRAC (Bethel)</b>				
Oct. 20	Oct. 21	Oct. 22	Oct. 23	Oct. 24	Oct. 25	Oct. 26
		<b>SEARAC (Ketchikan)</b>			<b>SPRAC (Nome)</b>	
Oct. 27	Oct. 28	Oct. 29	Oct. 30	Oct. 31	Nov. 1 <b>Window Closes</b>	Nov. 2
		<b>BBRAC (Dillingham)</b>				
	<b>NWARAC (Kotzebue)</b>					



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

**Yukon-Kuskokwim Delta Subsistence Regional Advisory Council**

**Charter**

1. **Committee's Official Designation.** The Council's official designation is the Yukon-Kuskokwim Delta Subsistence Regional Advisory Council (Council).
2. **Authority.** The Council is renewed by virtue of the authority set out in the Alaska National Interest Lands Conservation Act (ANILCA) (16 U.S.C. 3115 (1988)) Title VIII, and under the authority of the Secretary of the Interior, in furtherance of 16 U.S.C. 410hh-2. The Council is regulated by the Federal Advisory Committee Act (FACA), as amended, (5 U.S.C., Appendix 2).
3. **Objectives and Scope of Activities.** The objective of the Council is to provide a forum for the residents of the Region with personal knowledge of local conditions and resource requirements to have a meaningful role in the subsistence management of fish and wildlife on Federal lands and waters in the Region.
4. **Description of Duties.** Council duties and responsibilities, where applicable, are as follows:
  - a. Recommend the initiation, review, and evaluate of proposals for regulations, policies, management plans, and other matters relating to subsistence uses of fish and wildlife on public lands within the region.
  - b. Provide a forum for the expression of opinions and recommendations by persons interested in any matter related to the subsistence uses of fish and wildlife on public lands within the Region.
  - c. Encourage local and regional participation in the decision-making process affecting the taking of fish and wildlife on the public lands within the region for subsistence uses.
  - d. Prepare an annual report to the Secretary containing the following:
    - (1) An identification of current and anticipated subsistence uses of fish and wildlife populations within the Region;
    - (2) An evaluation of current and anticipated subsistence needs for fish and wildlife populations within the Region;
    - (3) A recommended strategy for the management of fish and wildlife

populations within the Region to accommodate such subsistence uses and needs; and

- (4) Recommendations concerning policies, standards, guidelines, and regulations to implement the strategy.
    - e. Make recommendations on determinations of customary and traditional use of subsistence resources.
    - f. Make recommendations on determinations of rural status.
    - g. Provide recommendations on the establishment and membership of Federal local advisory committees.
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 \$196,000, including all direct and indirect expenses and 1.15 Federal staff years.
8. **Designated Federal Officer.** The DFO is the Subsistence Council Coordinator for the Region or such other Federal employee as may be designated by the Assistant Regional Director – Subsistence, Region 11, U.S. Fish and Wildlife Service. The DFO is a full-time Federal employee appointed in accordance with Agency procedures. The DFO will:
  - (a) Approve or call all Council and subcommittee meetings;
  - (b) Prepare and approve all meeting agendas;
  - (c) Attend all committee and subcommittee meetings;
  - (d) Adjourn any meeting when the DFO determines adjournment to be in the public interest; and
  - (e) Chair meetings when directed to do so by the official to whom the advisory committee reports.
9. **Estimated Number and Frequency of Meetings.** The Council will meet 1-2 times per year, and at such times as designated by the Federal Subsistence Board Chair or the DFO.

**10. Duration.** Continuing.

**11. Termination.** The Council will be inactive 2 years from the date the charter is filed, unless prior to that date, the charter is renewed in accordance with 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:

Thirteen 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 nine of the members (70 percent) represent subsistence interests within the region and four of the members (30 percent) represent commercial and sport interests within the region. The portion of membership representing commercial and sport interests must include, where possible, at least one representative from the sport community and one representative from the commercial community.

The Secretary of the Interior will appoint members based on the recommendations from the Federal Subsistence Board and with the concurrence of the Secretary of Agriculture.

Members will be appointed for 3-year terms. Members serve at the discretion of the Secretary.

To ensure that there is geographic membership balance and balanced representation on the Council, the Secretary will strive to appoint members to equally represent the communities across the Yukon-Kuskokwim Delta region and on both the Yukon and Kuskokwim rivers.

If appointments for a given year have not yet been announced, a member may continue to serve on the Council following the expiration of his or her term until such appointments have been made. Unless reappointed, the member's service ends on the date of announcement even if that member's specific seat remains unfilled.

Alternate members may be appointed to the Council to fill vacancies if they occur out of cycle. An alternate member must be approved and appointed by the Secretary before attending the meeting as a representative. The term for an appointed alternate member will be the same as the term of the member whose vacancy is being filled.

Council members will elect a Chair, Vice-Chair, and Secretary for a 1-year term.

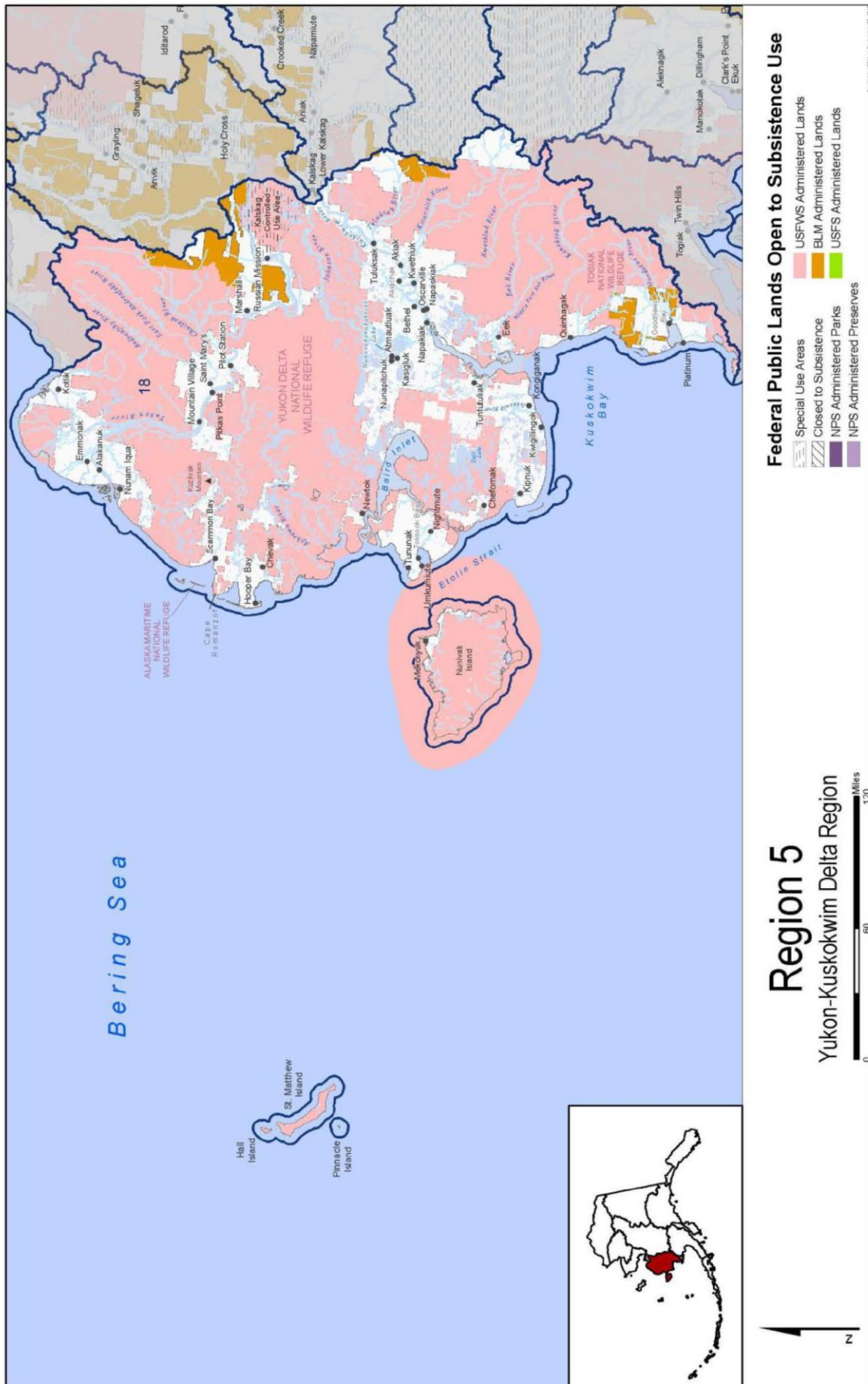
Members of the Council will serve without compensation. However, while away from their homes or regular places of business, Council and subcommittee members engaged in Council, or subcommittee business, approved by the DFO, may be allowed travel expenses, including per diem in lieu of subsistence, in the same manner as persons employed intermittently in Government service under Section 5703 of title 5 of the United States Code.

13. **Ethics Responsibilities of Members.** No Council or subcommittee member will participate in any Council or subcommittee deliberations or votes relating to a specific party matter before the Department or its bureaus and offices including a lease, license, permit, contract, grant, claim, agreement, or litigation in which the member or the entity the member represents has a direct financial interest.
14. **Subcommittees.** Subject to the DFO's approval, subcommittees may be formed for the purpose of compiling information or conducting research. However, such subcommittees must act only under the direction of the DFO and must report their recommendations to the full Council for consideration. Subcommittees must not provide advice or work products directly to the Agency. Subcommittees will meet as necessary to accomplish their assignments, subject to the approval of the DFO and the availability of resources.
15. **Recordkeeping.** The Records of the Council, and formally and informally established subcommittees or other subgroups of the Council, must be handled in accordance with General Records Schedule 6.2, and other approved Agency records disposition schedules. These records must be available for public inspection and copying, subject to the Freedom of Information Act (5 U.S.C. 552).

\_\_\_\_\_/signature of the filed original/  
Secretary of the Interior

\_\_\_\_\_  
Dec. 10, 2021  
Date Signed

\_\_\_\_\_  
Dec. 13, 2021  
Date Filed





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