WSA26-11 Executive Summary	
General Description	Temporary Wildlife Special Action WSA26-11 requests to increase the caribou harvest limit from one to two caribou by State registration permit for the winter 2026/27 hunt within the Katmai National Preserve in Unit 9C. *Submitted by: Robert Hill of Kokhanok.*
Proposed Regulation	Unit 9C—Caribou *Unit 9C, that portion within Katmai National Preserve – up to 2 caribou by Federal registration permit during the 2026 fall hunt.* — *Season may be announced between Aug. 1 – Sep. 30 or Nov. 1 – Mar. 31* *OR* *~~1~~ **2** caribou by ~~Federal~~ **State** registration permit during the 2026/27 winter hunt.* *Federal public lands are closed to the taking of caribou except by residents of Igiugig and Kokhanok hunting under these regulations.*
OSM Preliminary Conclusion	**Support** WSA26-11 **with modification** to revise the Section 804 restriction so that residents of Igiugig, Iliamna, Kokhanok, Levelock, and Newhalen are eligible to harvest two Kukaklek Shelf caribou by State registration permit in Katmai National Preserve during the winter 2026/27 season.
OSM Conclusion	**Support** Temporary Wildlife Special Action request WSA26-11 **as modified by the Bristol Bay Council.**
Bristol Bay Subsistence Regional Advisory Council Recommendation	**Support** WSA26-11 **with modification** to revise the Section 804 restriction so that residents of Igiugig, Iliamna, King Salmon, Kokhanok, Levelock, Naknek, Newhalen, and South Naknek are eligible to harvest two Kukaklek Shelf caribou by State registration permit in Katmai National Preserve during the winter 2026/27 season.
Interagency Staff Committee Comments	
ADF&G Comments	
Public Comments	None

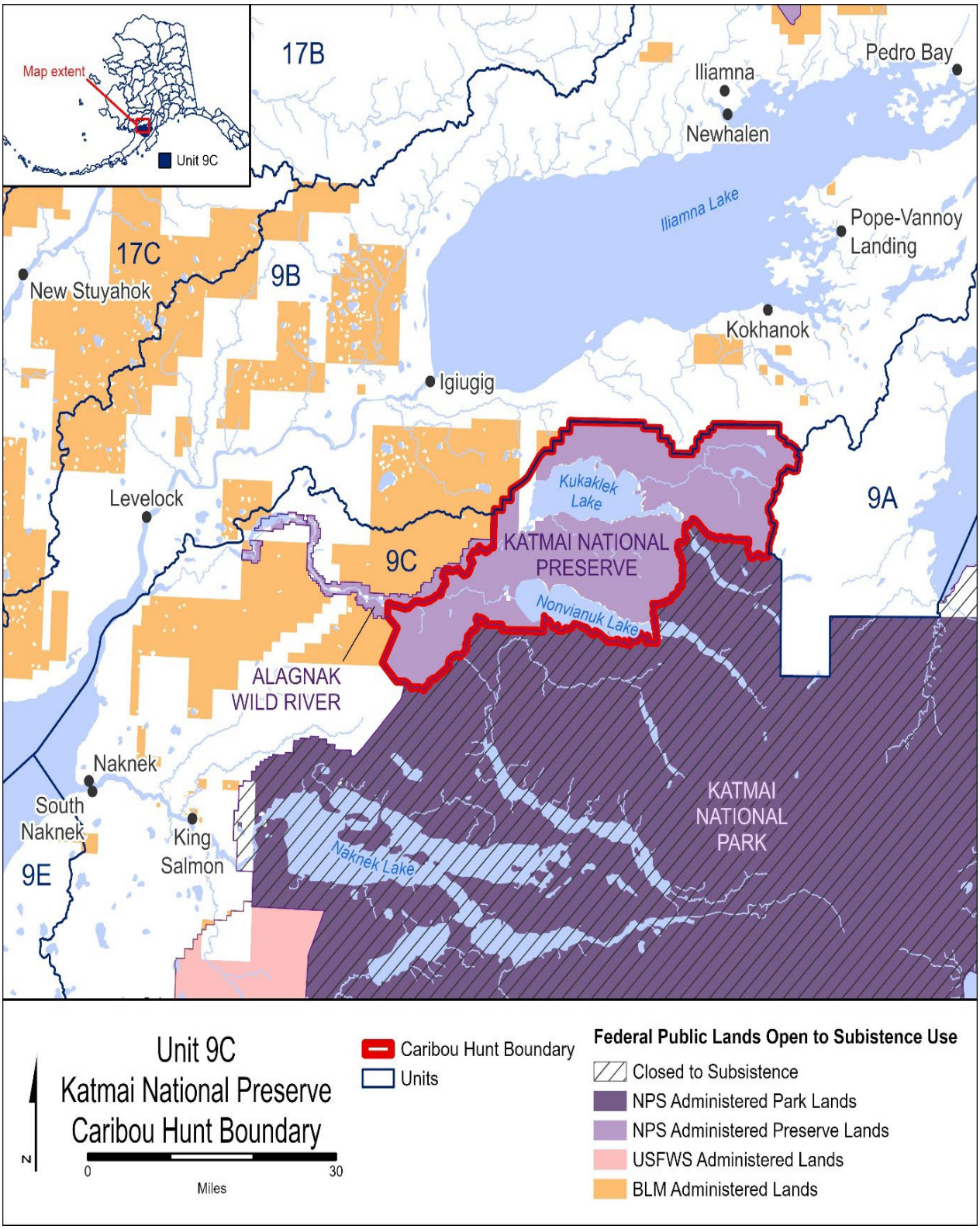
Temporary Wildlife Special Action Analysis
WSA26-11

ISSUE

Temporary Wildlife Special Action WSA26-11, submitted by Robert Hill of Kokhanok, requests to increase the caribou harvest limit from one to two caribou by State registration permit for the winter 2026/27 hunt within the Katmai National Preserve in Unit 9C (**Map 1**).

Proponent Statement

The proponent notes that the caribou present on Katmai National Preserve have increased over the previous five years to a population size that can now sustain a limited harvest. Calf to cow and bull to cow ratios are high and the population is increasing at a faster rate than anticipated. If growth of this population is left unchecked, habitat degradation is possible, and the caribou population might decrease as a result. The proponent explains that harvesting a limited number of caribou will help ensure the population continues to be viable and allow for subsistence use of the resource. Growth of the population will be more challenging to slow if left to increase for additional years. Alaska Department of Fish and Game (ADF&G) opened a state registration hunt on the surrounding state lands with a harvest limit of two caribou for state residents and a season running from December 1, 2026, to March 31, 2027, unless closed by emergency order when the harvest quota is met. The proponent explains that aligning Federal and State harvest limits in the area will increase subsistence use of the resource, prevent potential overgrazing and habitat degradation, and prevent potential user confusion.



Map 1. Map of the Unit 9C Katmai National Preserve hunt area affected by this special action.

Relevant Federal Regulations

The applicable Federal regulations governing Temporary Special Actions are found in 43 CFR 51.19(b) and 36 CFR 242.19(b) and state that:

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

The applicable Federal regulations governing subsistence user prioritization are found in 43 CFR 51.17(a)(b) and 36 CFR 242.17(a)(b) and state that:

> *"Whenever it is necessary to restrict the subsistence taking of fish and wildlife on public lands in order to protect the continued viability of such populations, or to continue subsistence uses, the Board shall establish a priority among the rural Alaska residents after considering any recommendation submitted by an appropriate Regional Council.*
>
> *The priority shall be implemented through appropriate limitations based on the application of the following criteria to each area, community, or individual determined to have customary and traditional use, as necessary:*
>
> *(1) Customary and direct dependence upon the populations as the mainstay of livelihood;*
>
> *(2) Local residency; and*
>
> *(3) The availability of alternative resources."*

Current Federal Regulations

Note: These are the codified Federal regulations

> ***Unit 9C – Caribou***
>
> | | |
> |---|---|
> | *Unit 9C, that portion within Katmai National Preserve – 1 caribou by Federal Registration permit* | *Season may be announced between* |
> | *Federal public lands are closed to the taking of caribou except by residents of Igiugig and Kokhanok hunting under these regulations.* | *Aug. 1 – Sep. 30 or Nov. 1 – Mar. 31* |

Note: These are the 2026 Federal regulations that were approved via Wildlife Special Action request WSA26-06.

Unit 9C—Caribou

Unit 9C, that portion within Katmai National Preserve – up to 2 caribou by Federal registration permit during the 2026 fall hunt. *OR* *1 caribou by Federal registration permit during the 2026/27 winter hunt.* *Federal public lands are closed to the taking of caribou except by residents of Igiugig and Kokhanok hunting under these regulations.*	*Season may be announced between Aug. 1 – Sep. 30 or Nov. 1 – Mar. 31*

Proposed Federal Regulations

Unit 9C—Caribou

Unit 9C, that portion within Katmai National Preserve – up to 2 caribou by Federal registration permit during the 2026 fall hunt. *OR* ~~*1*~~ ***2*** *caribou by* ~~*Federal*~~ ***State*** *registration permit during the 2026/27 winter hunt.* *Federal public lands are closed to the taking of caribou except by residents of Igiugig and Kokhanok hunting under these regulations.*	*Season may be announced between* *Aug. 1 – Sep. 30 or Nov. 1 – Mar. 31*

Current State Regulations

Note: These are the 2026/27 State regulations that were approved via Emergency Order R4-3-26

Unit 9 – Caribou

Residents: Unit 9B, south of the south shore of the Kvichak River, Iliamna Lake, Kakhonak River, Kakhonak Lake, Moose Lake, and south of the south bank of the inlet stream to Moose Lake to its source at the subunit boundary – Two caribou by registration permit (RC504)	*Dec. 1 – Mar. 31*
Residents: Unit 9C, that portion within the Alagnak River drainage – Two caribou by registration permit (RC504)	*Dec. 1-Mar. 15*

Extent of Federal Public Lands

Unit 9C is comprised of approximately 86% federal public lands that consist of 78% NPS, 4% U.S. Fish and Wildlife Service (USFWS), and 4% Bureau of Land Management (BLM) managed lands. The majority of NPS managed lands are within Katmai National Park and are closed to all hunting, including subsistence uses (**Map 1**).

The area affected by WSA26-11, Katmai National Preserve, is comprised of 100% Federal public lands and consists of 100% NPS managed lands.

Customary and Traditional Use Determination

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

Regulatory History

Caribou in the northern portion of Unit 9C, including Katmai National Preserve, have historically been managed as part of the Mulchatna Caribou Herd. Due to severe population declines and conservation concerns for this herd, Mulchatna hunts have been restricted since 2019, and completely closed since 2021, under both Federal and State regulations.

In April 2024, the Federal Subsistence Board (Board) considered Wildlife Proposal WP24-15 to establish a hunt for a resident caribou population within Katmai National Preserve in Unit 9C for the residents of Igiugig only. The proposed season dates were Aug. 1-Sep. 30 and Nov. 1-Mar. 31, with a harvest limit of one caribou by Federal registration permit. Local residents attested that caribou remain in this area year-round and that their numbers were increasing substantially. The Board adopted Proposal WP24-15 as modified by OSM to establish a "may be announced" season and delegate authority to the Katmai National Park and Preserve (Katmai NPP) superintendent to manage the hunt via delegation of authority letter only (**Appendix 1**), and limit eligibility to harvest caribou in this area to residents of Igiugig and Kokhanok via an Alaska National Interest Lands Conservation Act (ANILCA) Section 804 user prioritization. Section 804 prioritizations identify which federally qualified subsistence users should have a priority for the take of a limited resource in a particular area, when it is determined that harvest restrictions are needed due to significant conservation concerns or the need to ensure the continuation of subsistence uses among a subset of users most dependent on the resource. Three criteria are used to make these determinations: (1) customary and direct dependence upon the populations as the mainstay of livelihood; (2) local residency/proximity to the resource; and (3) availability of alternative resources.

The Section 804 prioritization (WP24-15) determined that out of the 23 communities with a customary and traditional use determination for caribou in this unit, the residents of Igiugig and Kokhanok exhibited the greatest dependance upon, and closest proximity to, the Kukaklek (*Qukaqliq*) Shelf Caribou population. The delegation of authority letter associated with this hunt includes the authority to announce, open, and close a season between Aug. 1 - Sep. 30 and Nov. 1 – Mar. 31, to announce the annual harvest quota, determine the number of permits issued annually, set sex restrictions, and set permit conditions.

In July 2026, the Board considered Emergency Wildlife Special Action WSA26-06, requesting to increase the caribou harvest limit from 1 to "up to 2" caribou for the fall 2026 hunt within Katmai National Preserve (**Map 1**). WSA26-06 was submitted because of concerns about overgrazing and habitat expansion due to a significant increase in the size of the Kukaklek population. This request also noted that the authority to set harvest limits needed to be delegated to the Federal in-season manager for the change to be implemented (OSM 2026b). The Board adopted this emergency special action and included the temporary delegation of authority to expire Sep. 30, 2026, to promote sustainable management of the growing Kukaklek caribou population and provide additional subsistence opportunity for residents of Igiugig and Kokhanok.

Current Events

The ADF&G opened a winter caribou hunt by State registration permit in portions of Units 9B and 9C for the 2026/27 season, via Emergency Order R4-3-26. Specifically, ADF&G opened the Northern Alaska Peninsula (NAP) caribou hunt (RC504) in the portion of Unit 9C within the Alagnak River drainage from Dec. 1-Mar. 15, and the portion of Unit 9B south of the south shore of the Kvichak River, Iliamna Lake, Kakhonak River, Kakhonak Lake, Moose Lake, and south of the south bank of the inlet stream to Moose Lake to its source at the subunit boundary from Dec. 1-Mar. 31. The harvest limit for this hunt is two caribou, but the hunt may close early if the harvest quota is met. State registration permit RC504 will be available in King Salmon, Igiugig, Kokhanok, and Levelock (ADF&G 2026a).

ADF&G opened this hunt to provide limited harvest opportunity and reduce the likelihood of habitat degradation and subsequent population decline. The NAP historically wintered in this area, and recent radio collar data shows no interactions with the MCH. Winter population count and fall composition survey data from the previous three years shows increasing numbers with high bull:cow and calf:cow ratios (ADF&G 2026b).

Biological Background

The caribou population that currently occupies Katmai National Preserve is locally referred to as the Kukalek Shelf Caribou population. Based on observations from local users and radio collaring studies conducted by ADF&G and Katmai NPP, the Kukaklek Shelf Caribou population tends to stay close to the Kukaklek Bench and does not appear to migrate (BBRAC 2020, 2022, 2023; Patterson 2023; Vande Voort 2025). Katmai NPP and ADF&G have been working together to radio collar Kukaklek Shelf caribou and gather more biological information (BBRAC 2023). Flights are conducted to do minimum count surveys of the population by taking photo images for counts based on locations of radio collared caribou. Since 2021, Katmai NPP has conducted minimum counts of these caribou in and around the Preserve during late winter, prior to calving. Winter minimum counts ranged from 306 to 821 caribou (**Table 1**), with no survey conducted in 2023 (Skora 2026, pers. comm.). Fall composition surveys conducted between 2023 and 2025 also included minimum counts ranging from 398 to 1,134 caribou (Vande Voort 2025). Between 2023 and 2025, fall composition ratios ranged from 34-45 bulls:100 cows and 37-43 calves:100 cows (**Table 1**, Vande Voort 2025). Overall, the NPS and ADF&G have documented a significant increase of the Kukaklek Shelf caribou population from ~300 caribou in 2021, to ~800 in 2026. The most recent

population composition ratios indicate a healthy and fast-growing population. Local communities (Kokhanok and Igiugig), ADF&G, and the NPS agree that the growth and size of the population could now lead to overgrazing and habitat degradation (OSM 2026b, ADF&G 2026b).

Table 1. Kukaklek Shelf Caribou fall composition and winter minimum population count data from ADF&G and Kamai NPP surveys (Skora 2026, pers. comm., Vande Voort 2025). Dash lines indicate data was not collected or not available. The fall 2026 composition survey is planned but not yet completed (ADF&G 2026b).

Year	Calves:100 Cows	Bulls:100 Cows	Fall Composition Sample Size	Winter Minimum Count
2021	-	-	-	312
2022	-	-	-	306
2023	43	44	435	-
2024	37	34	398	425
2025	38	45	1,134	821
2026	-	-	-	792
Average	**39**	**41**	**656**	**531**

Cultural Knowledge and Traditional Practices

Archaeological surveys and historical accounts document the primacy of the ocean in feeding the people of the Alaska Peninsula, but they also describe the importance of caribou, particularly for those communities of the western Bristol Bay portion of the peninsula (Lantis 1984, Morseth 2003, VanStone 1984a, VanStone 1984b). As early as 8,000 years ago, people of the Paleo-Arctic cultural tradition occupied sites near the Kvichak River (Morris 1985), located about 75 miles from the contemporary Katmai NPP area. Archaeologists believe that these Kvichack River sites may have been used as seasonal caribou hunting camps, as the sites were located on dunes suitable for observing migrating herds (Morris 1985). Around 6,000 years ago, people of the Ocean Bay cultural tradition occupied sites in the Naknek Area along the Brooks River, just about 30 miles from contemporary Katmai NPP (Morris 1985). Inhabitants of these Naknek Area sites harvested caribou seasonally in the interior of the Upper Alaska Peninsula and may have used Katmai Pass as a travel corridor between the Pacific Coast and the Upper Alaska Peninsula (Morris 1985). By about 2,400 years ago, subsistence and settlement patterns in the Bering Sea and Alaska Peninsula regions were clearly based on the harvest of three key resources: marine mammals, salmon, and caribou (Shaw 1998, Gillispie 2018). During this period, migrating caribou were likely harvested during the fall in upland areas adjacent to permanent coastal villages, or in seasonal camps further inland that were accessed via Katmai Pass (Morris 1985, Shaw 1998, Gillispie 2018).

Historically, a large caribou population roamed the coast of the Bering Sea from Bristol Bay to Norton Sound (Skoog 1968, Holen et al. 2005, Aderman 2015). Numerous large herds were observed 150 to 250 miles away from the current site of Katmai NPP, near the headwater lakes of the Igushik River in the early 1800s (VanStone 1988), and near Cape Newenham in the late 1800s (Petroff 1884). Scattered caribou were also observed in the Lake Iliamna area in the early 1800s, about 70 miles from contemporary

Katmai NPP (Holen et al. 2005). The Mulchatna herd peaked in the 1860s and began to decline in the 1870s (Holen et al. 2005). By 1880, the herd was no longer migrating north into the Yukon and Kuskokwim river drainages (Holen et al. 2005). Commercial reindeer herding was introduced to the Bristol Bay area in the early 1900s, and a reindeer station was located near Kokhanok (Holen et al. 2005). The Mulchatna herd increased somewhat in the 1930s, but it began declining again by the late 1930s (Holen et al. 2005). The Bristol Bay reindeer industry failed by the mid-1940s (Ackerman 2015), and many reindeer joined the nearby Mulchatna and Alaska Peninsula caribou herds over time (Kreig et al. 2009).

The population of the Mulchatna herd generally increased from the late-1940s to the mid-1990s (Landsiedel and Lichwa 2026), but herd migration patterns regularly fluctuated during this period, with corresponding impacts on residents' ability to access and harvest caribou (Holen et al. 2005, Krieg et al. 2009). The herd experienced a precipitous decline following its mid-1990s peak, primarily due to overgrazing (Landsiedel and Lichwa 2026). During some of the more recent subsistence surveys conducted in Units 9 and 17 in the 2000s, many residents were experiencing the impacts of this Mulchatna population decline, as caribou were less available and harvest regulations were more restrictive (Holen et al. 2005, 2011, 2012; Fall et al. 2006, Kreig et al. 2009, Jones et al. 2024). Some residents were relying more on moose to help compensate for the lack of caribou (Fall et al. 2006, Krieg et al. 2009). For example, in 2005, some residents of Iliamna and Newhalen reported that moose had supplanted caribou as the dominant large land mammal species in their hunting areas, even though moose were scarce near the communities (Fall et al. 2006).

There are currently 23 communities with a customary and traditional use determination for caribou in Unit 9C. Collectively, about 6,000 people lived in these communities in 2025 (**Table 2**). Dillingham is the largest of these communities, and it functions as the hub of transportation, health care, and trade in the larger Bristol Bay region (**Table 2**). The number of people residing in the region steadily increased between 1960 and 2000, but populations have generally decreased since this time (**Table 2**). Commercial fishing and fish processing have been important to the regional economy since the late 1800s (ADCCED 2025). Sport fishing and hunting, as well as support services for these industries have also become important sources of income and employment in the area. Federal, State, local, and/or Tribal governments also provide employment in many of the communities in the region (Krieg et al., 2009).

As a result of the ANILCA Section 804 restriction adopted in 2024, only the residents of Igiugig and Kokhanok may hunt caribou in the Katmai National Preserve. These two communities reside in close proximity to the Preserve and were determined to exhibit the greatest dependence on the Kukaklek (*Qukaqliq*) Shelf Caribou population. Igiugig and Kokhanok are both small, primarily Alaska Native communities located in the traditional territory of the Aglurmiut Central Yup'ik (Krieg et al. 2009). Both communities have been extensively involved in the commercial fishing and reindeer herding industries, and they each have long histories of harvesting subsistence resources from the area that is now the Katmai NPP (Krieg et al. 2009, OSM 2024). The harvest of wild resources remains a key component of the economies of Igiugig and Kokhanok, and both communities rely on a wide diversity of resources such as: salmon, non-salmon fish, large land mammals (e.g. caribou and moose), marine mammals (e.g. seals and sea lions), migratory waterfowl (e.g. ducks and geese), other birds (e.g. ptarmigan and grouse), furbearers,

berries, greens, and wood (Holen et al. 2005, Krieg et al. 2009, BBRAC 2023). However, fish and large land mammals like caribou typically account for the greatest proportion of each community's subsistence harvests (OSM 2024).

Table 3 shows key caribou harvest and use information acquired through household surveys periodically conducted in Igiugig and Kokhanok since the 1970s. Household surveys seek to capture all harvest, use, and sharing of caribou and other wild resources by surveyed households for a single survey year, under any Federal or State opportunity. However, because these surveys only capture a single year, they may not always be representative of a community's typical subsistence patterns. For example, weather, regulatory constraints, social, and economic variables may impact hunting and harvest from year-to-year. That said, Igiugig residents have generally used, harvested, and given caribou away at greater rates than residents of Kokhanok during subsistence studies that have been conducted in these two communities (**Table 3**). During the most recent subsistence study conducted in 2005, caribou accounted for about 17% of the total per person subsistence harvest in Igiugig, but only 3% of the per person harvest in Kokhanok (Krieg et al. 2009). During this study period, Kokhanok residents noted that the harvest of large land mammals was much lower than it had been recently due to the lack of caribou migrating through the area (Krieg et al. 2009). Moose were also more difficult to find near Kokhanok and were more available near Igiugig and Levelock (Krieg et al. 2009). As one community member explained:

> [Kokhanok] residents no longer saw caribou around the village. Caribou were sometimes found south of the village, the respondent said, in the mountains towards Katmai National Park and Preserve, or to the west towards Igiugig. The respondent added that when they did migrate east, the caribou usually traveled on the north side of the lake instead of on the south shore, towards Kokhanok. Therefore, to reach the caribou, Kokhanok residents said they had to travel close to Katmai National Park and Preserve, or to the north side of Iliamna Lake and then towards the Mulchatna River (Krieg et al. 2009: 105).

The rising cost of fuel and the unpredictability of weather conditions were also key concerns for many Kokhanok residents in 2005, as both issues limited their ability to travel to find and harvest subsistence resources like caribou (Krieg et al. 2009). Hunters in the Bristol Bay region have typically searched for caribou in wide areas surrounding their communities (Krieg et al. 1996; Krieg et al. 1998; Holen et al. 2011, OSM 2018), because caribou populations and migration patterns regularly fluctuate (Behnke 2000, Gunn 2003). Weather has become an increasingly important factor in when and where hunters seek caribou in recent years, as hunters have reported that weather has generally gotten warmer over the past several decades (FSB 2024). In addition to trends towards warmer temperatures during late-fall and early-spring, local users reported large-scale changes in snow and ice cover throughout winter, and that the normal freezing of waterbodies such as lakes and rivers has now also become unreliable (Van Lanen et al. 2018: 140). These changes have also impacted caribou migration patterns and made well-established methods of accessing caribou more difficult and dangerous (Van Lanen et al. 2018). Caribou harvests have fluctuated along with the availability of adequate snow and ice cover for travel, as well as herd size and hunting season length (Aderman 2015, Van Lanen et al. 2018).

The Kukaklek population has increased substantially since the initial Section 804 determination was made for this hunt, and managers and local users are now concerned about the potential for overgrazing and habitat degradation as a result. Since the conditions warranting the initial Section 804 restrictions appear to have changed, it may be appropriate to revisit these restrictions. The current 804 restrictions could potentially be modified to allow additional communities to harvest Kukaklek caribou, or they could be completely rescinded to allow all federally qualified subsistence users to harvest these caribou.

The Section 804 analysis that was conducted to help establish the current Kukaklek Shelf hunt previously identified Igiugig, Iliamna, Kokhanok, Levelock, and Newhalen as the communities located in closest proximity to Katmai NPP, with clear histories of hunting caribou in the area of the Preserve in Unit 9C (see **Appendix 2,** ADF&G 1985, Morris 1986, Kenner 1993, Holen et al. 2005, Fall et al. 2006, Krieg et al. 2009, OSM 2024). Similarly, King Salmon, Naknek, and South Naknek are located in the same watershed as these five communities, and they also have extensive histories of hunting caribou in Unit 9C (**Appendix 2,** BBRAC 2026). Bristol Bay Council members confirmed at their October 2026 meeting that residents of King Salmon, Naknek, and South Naknek have also hunted caribou in the area of the Preserve (BBRAC 2026). It may now be appropriate to add Iliamna, King Salmon, Levelock, Naknek, Newhalen, and/or South Naknek to the pool of users eligible to harvest Kukaklek caribou under Federal regulations, given the increase in caribou population numbers.

Table 4 below shows key caribou harvest and use data acquired through household surveys periodically conducted since the 1980s in these six additional communities with demonstrated histories of hunting caribou in the area of Katmai NPP. Of these communities, South Naknek has exhibited the highest average per person caribou harvest and caribou have generally accounted for the greatest average proportion of their total subsistence harvests (**Table 4**). Levelock has exhibited the highest average rate of caribou use, though all communities have generally shown high rates of caribou use (**Table 4**). Levelock and Newhalen have exhibited the greatest rates of caribou sharing among these six communities (**Table 4**).

Table 2. Population of communities with customary and traditional use determination for caribou in Unit 9C from 1960 – 2025 (ADCCED 2025, ADLWD 2025). *(Dashed lines indicate data was not collected or not available. Bolded values indicate the communities currently eligible to harvest Kukaklek Shelf caribou within Katmai National Preserve).

Community	**1960**	**1970**	**1980**	**1990**	**2000**	**2010**	**2020**	**2025**
Aleknagik	231	128	154	185	221	219	211	210
Clark's Point	138	95	79	60	75	62	67	55
Dillingham	424	914	1,563	2,017	2,466	2,329	2,249	2,059
Egegik	-	-	-	-	2	2	-	-
Ekwok	106	103	77	77	130	115	111	106
Igiugig	**36**	**36**	**33**	**33**	**53**	**50**	**68**	**66**
Iliamna	47	58	94	94	102	109	108	110
King Salmon	227	202	545	696	442	374	307	298
Kokhanok	**57**	**88**	**83**	**152**	**174**	**170**	**152**	**136**
Koliganek	100	142	117	181	182	209	183	183
Levelock	88	74	79	105	122	69	69	69
Manokotak	149	214	294	385	399	442	488	467
Naknek	249	178	318	575	678	544	470	426
New Stuyahok	145	216	331	391	471	510	512	454
Newhalen	63	88	87	160	160	190	168	163
Nondalton	205	184	173	178	221	164	133	121
Pedro Bay	53	65	33	42	50	42	43	40
Portage Creek	0	60	48	5	36	2	4	4
Pope-Vannoy Landing	0	0	0	0	8	6	6	5
Port Alsworth	0	0	22	55	104	159	186	168
South Naknek	142	154	145	136	137	79	67	63
Togiak	220	383	470	613	809	817	817	718
Twin Hills	0	67	70	66	69	74	103	106
Total	**2,680**	**3,449**	**4,815**	**6,206**	**7,111**	**6,737**	**6,522**	**6,027**

Table 3. Harvest and use of caribou taken under any opportunity by residents of Igiugig and Kokhanok (Holen et al. 2005, Krieg et al. 2009). *(HHs stands for "Households." Dashed lines indicate data was not collected or is not available for the particular study year).

Community	Study Year	HHs* Using Caribou	HHs Harvesting Caribou	HHs Giving Caribou	HHs Receiving Caribou	Caribou Harvest per person (lbs.)	Proportion of Total Harvest that was Caribou
Igiugig	1973	-	83%	-	-	248	-
Igiugig	1983	-	33%	-	67%	16	3%
Igiugig	1992	100%	100%	90%	70%	200	28%
Igiugig	2001	100%	91%	82%	36%	128	-
Igiugig	2005	100%	58%	75%	83%	91	17%
Average		**100%**	**73%**	**82%**	**64%**	**137**	**16%**
Kokhanok	1973	-	11%	-	-	21	-
Kokhanok	1983	-	5%	-	47%	1	0.2%
Kokhanok	1992	97%	64%	64%	72%	118	12%
Kokhanok	2001	94%	25%	13%	88%	22	-
Kokhanok	2005	80%	26%	26%	63%	21	3%
Average		**90%**	**26%**	**34%**	**68%**	**37**	**5%**
Overall Average		**95%**	**50%**	**58%**	**66%**	**87**	**11%**

Table 4. Harvest and use of caribou taken under any opportunity by residents of the other six communities with histories of hunting caribou in the Katmai National Preserve area (ADF&G CSIS 2026). *(HHs stands for "Households." Dashed lines indicate data was not collected or is not available for the particular study year).

Community	Study Year	HHs Using Caribou	HHs Harvesting Caribou	HHs Giving Caribou	HHs Receiving Caribou	Caribou Harvest per person (lbs.)	Proportion of Total Harvest that was caribou
Iliamna	1983	-	20%	-	10%	17	4%
Iliamna	1991	96%	70%	65%	61%	164	19%
Iliamna	2001	76%	43%	48%	57%	66	-
Iliamna	2004	77%	8%	23%	69%	7	1%
Average		**83%**	**35%**	**45%**	**49%**	**64**	**8%**
King Salmon	1983	74%	44%	-	35%	74	34%
King Salmon	1994	86%	59%	46%	32%	92	-
King Salmon	1995	87%	54%	40%	35%	66	-
King Salmon	1996	76%	35%	22%	43%	46	-
King Salmon	2007	33%	12%	4%	22%	10	3%
Average		**71%**	**41%**	**28%**	**33%**	**58**	**18%**

Community	Study Year	HHs Using Caribou	HHs Harvesting Caribou	HHs Giving Caribou	HHs Receiving Caribou	Caribou Harvest per person (lbs.)	Proportion of Total Harvest that was caribou
Levelock	1988	100%	74%	85%	85%	118	9%
Levelock	1992	100%	77%	70%	70%	116	13%
Levelock	2001	100%	53%	41%	65%	68	-
Levelock	2005	100%	64%	57%	64%	120	23%
Average		**100%**	**67%**	**63%**	**71%**	**106**	**15%**
Naknek	1983	73%	36%	-	52%	55	29%
Naknek	1994	85%	64%	42%	36%	118	-
Naknek	1995	57%	43%	19%	21%	70	-
Naknek	1996	67%	49%	26%	23%	82	-
Naknek	2007	49%	21%	9%	33%	21	8%
Average		**66%**	**43%**	**24%**	**33%**	**69**	**18%**
Newhalen	1983	-	36%	-	-	28	4%
Newhalen	1991	100%	81%	69%	77%	146	20%
Newhalen	2001	94%	65%	53%	82%	72	-
Newhalen	2004	88%	44%	60%	68%	59	9%
Average		**94%**	**57%**	**61%**	**76%**	**76**	**11%**
South Naknek	1983	91%	57%	-	52%	147	55%
South Naknek	1992	86%	46%	37%	60%	91	31%
South Naknek	1994	96%	68%	52%	72%	119	-
South Naknek	1995	87%	62%	40%	65%	133	-
South Naknek	1996	89%	54%	35%	68%	157	-
South Naknek	2007	62%	5%	5%	62%	7	3%
Average		**85%**	**49%**	**34%**	**63%**	**109**	**28%**
Overall Average		**82%**	**48%**	**41%**	**53%**	**81**	**16%**

Harvest History

No legal caribou harvest occurred in Unit 9C between 2021 and 2023, as both Federal and State caribou hunts have been closed due to conservation concerns for the Mulchatna Herd.

Legal harvest of Kukaklek Shelf caribou began in Regulatory Year 2024/25, when the Federal hunt was established within Katmai National Preserve via adoption of WP24-15. Eight permits were issued for the 2024/25 hunt, and 15 permits were issued for the 2025/26 hunt (**Table 5**). An average of 11 caribou were harvested in these two years, with about 95% of this harvest taking place during the winter hunt (**Table**

5). Harvest success for the hunt was high, as 100% of permitted hunters harvested a caribou in RY2024/25, and 93% of hunters harvested a caribou in RY2025/26 (OSM 2026a). Fourteen permits were issued for the 2026 fall hunt, with preliminary harvest reports of five bull caribou taken by three hunters during this time (**Table 5**, Zharoff 2026, pers. comm.).

Table 5. Kukaklek Shelf Caribou harvest data for RY 2024-2025 (OSM 2026a, Zharoff 2026, pers. comm.). Dash lines indicate data was not collected or not available.

Regulatory Year	Permits Issued (FC0916)	Bull Harvest	Cow Harvest	Unknown Harvest	Fall Harvest	Winter Harvest	Total Harvest
2024/25	8	3	5	-	-	8	8
2025/26	15	6	8	-	1	13	14
2026 (Fall)	14*	5*			5*		
Average	**12.3**	**4.7**	**6.5**	**-**	**3**	**10.5**	**11**

*Harvest data for 2026 (Fall) is preliminary.

Alternative(s) Considered

Modify the Section 804 Harvest Restriction: Harvest of Kukaklek Shelf caribou is currently limited to residents of Igiugig and Kokhanok via ANILCA Section 804 harvest restrictions. However, there are an additional 21 other communities that have a customary and traditional use determination for caribou in Unit 9C and would qualify to harvest Kukaklek Shelf caribou under Federal regulations if the Section 804 restriction were to be rescinded. Since the size of the Kukaklek Shelf population has recently increased to a degree that might cause habitat degradation due to overgrazing, it is likely worth changing the current Section 804 harvest restrictions to allow more federally qualified subsistence users to access and harvest this resource. The conditions that initially warranted these harvest restrictions appear to have changed substantially.

The current Section 804 restrictions could be modified to allow a limited number of additional communities to harvest Kukaklek Shelf caribou, or they could be completely rescinded to allow all 21 communities with a customary and traditional use determination to harvest these caribou. However, it would likely be best to expand the hunt incrementally by modifying the Section 804 restrictions to allow a limited number of additional communities to harvest these caribou. Despite the recent growth of this population, it is unlikely that it could sustain additional harvest by all 21 communities of federally qualified subsistence users given the relative size and distribution of the population. Further evaluation of this alternative is detailed in the Cultural Knowledge and Traditional Practices section. Modification of the current Section 804 restrictions was not considered for Emergency Special Action WSA26-06 because the timing constraints associated with the Emergency Special Action process would not have allowed for substantial Council and public input. However, this alternative is within the scope of this Temporary Special Action as a public hearing occurred on October 15, 2026, and the Bristol Bay Subsistence Regional Advisory Council provided a recommendation on this Temporary Special Action during their meeting on October 28, 2026.

Delegate Authority to Set Harvest Limits: Another alternative considered was to change the harvest limit for the winter hunt to 'up to 2 caribou' and delegate additional authority to set harvest limits similar to the fall hunt changes approved via Emergency Special Action WSA26-06. This would provide more management flexibility in announcing harvest limits for the Federal winter hunt. However, the winter State hunt has a two caribou harvest limit, and the intent of this request is to align Federal and State regulations, including permit requirements. As this request is only for one season and there are no conservation concerns, OSM did not consider this alternative further.

Maintain Federal Permit Requirement: Maintaining the Federal permit requirement for the winter hunt would continue to provide Federal and State managers with a clear mechanism to distinguish harvest occurring within Katmai National Preserve and harvest occurring on surrounding lands.

Discussion and Effects

If this request is approved, the harvest limit for the Kukaklek Shelf caribou hunt within Katmai National Preserve would increase to 2 caribou by State registration permit for the winter 2026/27 hunt, which may be announced between Nov. 1 to Mar. 31.

The establishment of the Federal subsistence harvest regulations for this hunt was based on limited information about a population of approximately 300 caribou. However, the Kukaklek Shelf Caribou population has been increasing since comprehensive surveys began in 2021, raising concerns over the population's growth and its potential impact on its habitat. Raising the harvest limit for residents of Igiugig and Kokhanok would provide additional opportunity for these federally qualified subsistence users and could help slow the growth of the population. However, modifying or rescinding the ANILCA Section 804 restriction currently in place would significantly expand the pool of federally qualified subsistence users eligible to hunt Kukaklek caribou, and likely have a greater effect on population management and habitat conservation while providing for broader subsistence opportunity. Generally, rescinding a closure or expanding the pool of users eligible for a hunt occurs before harvest limits are increased for a subset of federally qualified subsistence users.

If this request is approved, Federal harvest limits and permit requirements for the winter caribou hunt in Unit 9C would align with State regulations, reducing regulatory complexity. The in-season manager has authority to announce season dates, which may also align with the State hunt. As the State hunt will set a harvest quota after fall 2026 composition surveys are completed, overharvest is not expected. Since Federal users would also be using State registration permit RC504, the Federal hunt would also be subject to the State's harvest quota.

Comparisons and tracking of Federal harvest year-to-year would be complicated by changing permit requirements from Federal to State registration permits. The use of a State permit under Federal regulations would require more coordination with ADF&G on parsing out caribou harvest occurring within Katmai National Preserve under Federal regulations in relation to harvest occurring in surrounding areas under State regulations.

OSM PRELIMINARY CONCLUSION

Support Temporary Wildlife Special Action request WSA26-11 **with modification** to revise the Section 804 restriction so that residents of Igiugig, Iliamna, Kokhanok, Levelock, and Newhalen are eligible to harvest two Kukaklek Shelf caribou by State registration permit during the winter 2026/27 season.

The draft regulations read:

Unit 9C—Caribou	
Unit 9C, that portion within Katmai National Preserve – up to 2 caribou by Federal registration permit during the 2026 fall hunt.	*Season may be announced between*
OR	*Aug. 1 – Sep. 30 or Nov. 1 – Mar. 31*
~~*1*~~ ***2*** *caribou by* ~~*Federal*~~ ***State*** *registration permit during the 2026/27 winter hunt.*	
Federal public lands are closed to the taking of caribou except by residents of Igiugig, ***Iliamna,*** ~~*and*~~ *Kokhanok,* ***Levelock, and Newhalen*** *hunting under these regulations* ***during the 2026/27 regulatory year****.*	

Justification

Expanding the pool of eligible users and increasing the harvest limit for Kukaklek Shelf caribou is warranted because this caribou population has grown substantially in recent years and there are now concerns about the potential for habitat degradation due to overgrazing. This regulatory change would provide additional subsistence opportunity for federally qualified subsistence users residing in the five communities located in closest proximity to the Kukaklek hunt area, with clear histories of hunting caribou in this area. It would also help mitigate food security concerns in these communities. Increasing the harvest limit to two caribou by State registration permit would also reduce regulatory complexity by aligning regulations with the State hunt recently opened by Emergency Order on surrounding lands.

ADDENDUM

OSM CONCLUSION

Support Temporary Wildlife Special Action request WSA26-11 **with the Bristol Bay Council's modification** to revise the Section 804 restriction so that residents of Igiugig, Iliamna, King Salmon, Kokhanok, Levelock, Naknek, Newhalen, and South Naknek are eligible to harvest two Kukaklek Shelf caribou by State registration permit during the winter 2026/27 season.

The draft regulations read:

Unit 9C—Caribou

Unit 9C, that portion within Katmai National Preserve – up to 2 caribou by Federal registration permit during the 2026 fall hunt.	*Season may be announced between*
OR	*Aug. 1 – Sep. 30 or Nov. 1 – Mar. 31*
~~*1*~~ ***2*** *caribou by* ~~*Federal*~~ ***State*** *registration permit during the 2026/27 winter hunt.*	
Federal public lands are closed to the taking of caribou except by residents of Igiugig, ***Iliamna, King Salmon*** ~~*and*~~ *Kokhanok,* ***Levelock, Naknek, Newhalen, and South Naknek*** *hunting under these regulations* ***during the 2026/27 regulatory year****.*	

Justification

Expanding the pool of eligible users and increasing the harvest limit for Kukaklek Shelf caribou is warranted because this caribou population has grown substantially in recent years and there are now concerns about the potential for habitat degradation due to overgrazing. OSM concurs with the Bristol Bay Council's recommendation to add Iliamna, King Salmon, Levelock, Naknek, Newhalen, and South Naknek to the list of communities eligible for the Kukaklek caribou hunt. This regulatory change would provide additional subsistence opportunity for federally qualified subsistence users residing in the eight communities located in closest proximity to the Kukaklek hunt area, with clear histories of hunting caribou in this area. It would also help mitigate food security concerns in these communities. Increasing the harvest limit to two caribou by State registration permit would also reduce regulatory complexity by aligning regulations with the State hunt recently opened by Emergency Order on surrounding lands. If adopted, these regulatory changes would only remain in effect for the winter 2026/27 hunt. A formal regulatory proposal would need to be submitted during the 2028 – 2030 wildlife regulatory cycle for these changes to potentially be adopted into codified regulations.

LITERATURE CITED

ADCCED. 2025. Community database online. Alaska Department of Commerce, Community, and Economic Development. Division of Community and Regional Affairs. Juneau, AK. https://dcra-cdo-dcced.opendata.arcgis.com/. Accessed: July 28, 2025.

ADF&G. 1985. Alaska Habitat Guide Reference Maps. Southwest Region, Volume IV: Human Use of Fish and Wildlife Resources. Division of Habitat. Juneau, AK.

ADF&G. 2026a. Advisory announcement: Winter season for NAP Caribou Hunt RC504 opens December 1. ADF&G Division of Wildlife Conservation. King Salmon, AK. www.adfg.alaska.gov/static/applications/publicnotification/2026/releases/R4-AA-26-3513.pdf.

ADF&G 2026b. Hunting and trapping emergency order R4-3-26. ADF&G. King Salmon, AK. www.adfg.alaska.gov/static/applications/publicnotification/2026/orders/R4-3-26.pdf.

ADF&G CSIS. 2026. Community Subsistence Information System, online database. http://www.adfg.alaska.gov/sb/CSIS/index.cfm?ADFG=harvInfo.harvestCommSelComm, retrieved August 12, 2026. Division of Subsistence. Anchorage, AK.

Aderman, A. R. 2015. Population monitoring and status of the Nushagak Peninsula Caribou Herd, 1988–2014. Unpublished report. Togiak National Wildlife Refuge, USFWS. Dillingham, AK. 30 pages.

ADLWD. 2025. Population and Census: Dillingham Census Area and Lake and Peninsula Borough. https://live.laborstats.alaska.gov/. Accessed 8 June 2026.

BBRAC. 2020. Transcripts of the Bristol Bay Subsistence Regional Advisory Council proceedings. March 10, 2020. Naknek, AK. Office of Subsistence Management, USFWS. Anchorage, AK.

BBRAC. 2022. Transcripts of the Bristol Bay Subsistence Regional Advisory Council proceedings. November 2, 2022. Dillingham, AK. Office of Subsistence Management, USFWS. Anchorage, AK.

BBRAC. 2023. Transcripts of the Bristol Bay Subsistence Regional Advisory Council proceedings. March 8, 2023. Naknek, AK. Office of Subsistence Management, USFWS. Anchorage, AK.

BBRAC. 2026. Transcripts of the Bristol Bay Subsistence Regional Advisory Council proceedings. Oct. 28, 2026. Dillingham, AK. Office of Subsistence Management, PMB. Anchorage, AK.

Behnke, R.H. 2000. Equilibrium and non-equilibrium models of livestock population dynamics in pastoral Africa: their relevance to Arctic grazing systems. Rangifer 20(2-3): 141-152.

Fall, J.A., D.L. Holen, B. Davis, T. Krieg, and D. Koster. 2006. Subsistence harvests and uses of wild resources in Iliamna, Newhalen, Nondalton, Pedro Bay, and Port Alsworth, 2004. ADF&G Division of Subsistence Tech. Paper No. 302. Anchorage, AK.

FSB. 2024. Transcripts of Federal Subsistence Board proceedings, April 2-5, 2024. Office of Subsistence Management, USFWS. Anchorage, AK.

Gillispie, T.E. 2018. An overview of Alaska's prehistoric cultures. Alaska Department of Natural Resources: Office of History and Archaeology. Report 173. Anchorage, AK.

Gunn, A. 2003. Voles, Lemmings, and Caribou – population cycles revisited? Rangifer (Special Issue 14): 105-111.

Holen, D., T.M. Krieg, R. Walker, and H. Nicholson. 2005. Harvests and uses of caribou, moose, bears, and Dall sheep by communities of Game Management Units 9B and 17, Western Bristol Bay, Alaska 2001-2002. ADF&G Division of Subsistence, Technical Paper No. 283.

Holen, D., T.M. Krieg, and T. Lemons. 2011. Subsistence harvests and uses of wild resources in King Salmon, Naknek, and South Naknek, Alaska, 2007. ADF&G Division of Subsistence, Technical Paper No. 360.

Holen, D., J. Stariwat, T.M. Krieg, and T. Lemons. 2012. Subsistence Harvests and Uses of Wild Resources in Aleknagik, Clark's Point, and Manokotak, Alaska, 2008. ADF&G, Division of Subsistence Technical Paper No. 368.

Jones, B., C. Larson, R. Tomlin. 2024. The harvest and use of wild resources in Dillingham, Alaska, 2021. ADF&G Division of Subsistence Tech. Paper No. 499. Anchorage, AK.

Kenner, P.A. 1993. Field notes. USFWS, Office of Subsistence Management, Anchorage, AK.

Krieg, T.M., P. Coiley-Kenner, L. Hutchinson-Scarbrough, and L. Brown. 1996. Subsistence harvests and uses of caribou, moose and brown bear in 12 Alaska Peninsula communities, 1994/95. ADF&G Division of Subsistence, Technical Paper No. 240.

Krieg, T.M., J.A. Fall, C.J. Utermohle, and L. Brown. 1998. Subsistence harvests and uses of caribou, moose, and brown bear in 12 Alaska Peninsula communities, 1995/96 and 1996/97. ADF&G Division of Subsistence, Technical Paper No. 244.

Krieg, T.M., D.L. Holen, and D. Koster. 2009. Subsistence harvests and uses of wild resources in Igiugig, Kokhanok, Koliganek, Levelock, and New Stuyahok, Alaska, 2005. ADF&G, Div. of Subsistence Tech. Paper No. 322. Anchorage, AK.

Landsiedel, J.H., and E.M. Lichwa. 2026. Mulchatna caribou herd management report and plan, game management units 9A, 9B, 9C, 17A, 17B, 17C, 18, 19A, and 19B: Report period 1 July 2017 – 30 June 2022, and Plan period 1 July 2022 – 30 June 2027. ADF&G Division of Wildlife Conservation Species Management Report and Plan ADF&G/DWC/SMR&P–2026–9. Juneau, AK.

Lantis, Margaret. 1984. Aleut. IN Handbook of North American Indians: Arctic V. 5, David Damas, editor. Smithsonian Institution, Washington.

Morris, J.M. 1985. The use of fish and wildlife resources by residents of the Bristol Bay Borough, Alaska. ADF&G Division of Subsistence Tech. Paper No. 123. Anchorage, AK.

Morris, J.M. 1986. Subsistence production and exchange in the Iliamna Lake Region, Southwest Alaska, 1982-1983. ADF&G, Div. of Subsistence Tech. Paper No. 136. Anchorage, AK.

Morseth, Michele. 2003. Puyulek Pu'irtuq! The People of the Volcanoes: Aniakchak National Monument and Preserve Ethnographic Overview & Assessment. National Park Service, Anchorage, AK.

OSM. 2018. Staff analysis WP18-23. Office of Subsistence Management, USFWS. Anchorage, AK. 20 pp.

OSM. 2024. Staff analysis WP24-15. Office of Subsistence Management, USFWS. Anchorage, AK. 30 pp.

OSM. 2026. Caribou harvest data. Federal subsistence permitting database. June 4, 2026.

Patterson, D. 2023. Anthropologist. Personal communication: email. Alaska Regional Subsistence Program, National Park Service, Anchorage, AK.

Petroff, I. 1884. Report of the population, industries, and resources of Alaska. U.S. Census Office, Decennial Census 1880, 10th, V. 8. 189 pp.

Shaw, R. 1998. An archaeology of the Central Yupik: A regional overview for the Yukon-Kuskokwim Delta, Northern Bristol Bay, and Nunivak Island. Arctic Anthropology 35(1): 234-246.

Skoog, R.O. 1968. Ecology of the caribou (*Rangifer tarandus granti*) in Alaska. Dissertation, University of California, Berkeley, USA.

Skora, L. C. 2026. Wildlife Biologist. Personal communication: email. Katmai National Park and Preserve. King Salmon, AK.

Van Lanen, J.M., G. Neufeld, and C. McDevitt. 2018. Traditional ecological knowledge of the Mulchatna caribou herd: phenology, habitat change, subsistence use, and related species interactions in Game Management Units 9B–C, 17, 18, and 19A–C, Alaska. Juneau, AK. 277 pages.

VanStone, J.W. 1984a. Exploration and Contact History of Western Alaska. IN Handbook of North American Indians: Arctic V. 5, David Damas, editor. Smithsonian Institution, Washington.

VanStone, J.W. 1984b. Mainland Southwest Alaska Eskimo. IN Handbook of North American Indians: Arctic V. 5, David Damas, editor. Smithsonian Institution, Washington.

VanStone, J.W., ed. 1988. Russian exploration in southwest Alaska: the travel journals of Petr Korsakovskiy (1818) and Ivan Ya. Vasilev (1829). Translated by D. H. Kraus. The Rasmuson Library Historical Translation Series Vol IV. University of Alaska Press. Fairbanks, Alaska.

Vande Voort, A. M. 2025. Units 9 and 10 Caribou Composition Survey, 21-24 October 2025. Alaska Department of Fish and Game. Juneau, AK. 9 pages.

Zharoff, M.K. 2026. Subsistence Coordinator. Personal communication: email. Katmai National Park and Preserve. King Salmon, AK.

SUBSISTENCE REGIONAL ADVISORY COUNCIL RECOMMENDATION

Bristol Bay Subsistence Regional Advisory Council:

Support WSA26-11 **with modification** to revise the Section 804 restriction so that residents of Igiugig, Iliamna, King Salmon, Kokhanok, Levelock, Naknek, Newhalen, and South Naknek are eligible to harvest two Kukaklek Shelf caribou by State registration permit in Katmai National Preserve during the winter 2026/27 season. The Council supported OSM's modification of the proposal but also felt it was appropriate to include King Salmon, Naknek, and South Naknek in the list of communities eligible for the Kukaklek caribou hunt because these communities are located in the same watershed and also have a history of hunting caribou in the proposal area. The Council was pleased to see that the Kukaklek population has grown and felt that adding these six communities to the hunt and increasing the harvest limit to two caribou would provide greater subsistence opportunity, while also helping to maintain a sustainable caribou population size.

APPENDIX 1

Federal Subsistence Board

Office of Subsistence Management
1011 East Tudor Road, MS 121
Anchorage, Alaska 99503 – 6199

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

JUN 20 2024

FOREST SERVICE

In Reply Refer To:
OSM.B24042

Superintendent
Katmai National Park and Preserve
1000 Silver Street, Building 603
King Salmon, Alaska 99613

Dear Superintendent:

This letter delegates specific regulatory authority from the Federal Subsistence Board (Board) to the superintendent of Katmai National Park and Preserve (Katmai) to issue emergency or temporary special actions if necessary to ensure the conservation of a healthy wildlife population, to continue subsistence uses of wildlife, for reasons of public safety, or to assure the continued viability of a wildlife population. This delegation only applies to the Federal public lands subject to Alaska National Interest Lands Conservation Act (ANILCA) Title VIII jurisdiction within Unit 9C, Katmai National Preserve for the management of caribou on these lands.

It is the intent of the Board that actions related to management of caribou by Federal officials be coordinated, prior to implementation, with the Alaska Department of Fish and Game (ADF&G), representatives of the Office of Subsistence Management (OSM), and the Chair of the affected Council(s) to the extent possible. The OSM will be used by managers to facilitate communication of actions and to ensure proposed actions are technically and administratively aligned with legal mandates and policies. Federal managers are expected to work with managers from the State and other Federal agencies, the Council Chair or alternate, local Tribes, and Alaska Native corporations to minimize disruption to subsistence resource users and existing agency programs, consistent with the need for special action.

DELEGATION OF AUTHORITY

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

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

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

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

- Announce the annual harvest quota.
- Announce and open/close a season between August 1 to September 30 and November 1 to March 31.
- Determine the number of permits issued annually.
- Set sex restrictions.
- Set permit conditions. Permit conditions must be approved by OSM and in accordance with the current OMB information collection.

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

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

The Federal public lands subject to this delegated authority are those within Unit 9C, Katmai National Preserve.

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

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

You will review special action requests or situations that may require a special action and all supporting information to determine (1) consistency with 50 CFR 100.19 and 36 CFR 242.19, (2) if the request/situation falls within the scope of authority, (3) if significant conservation problems or subsistence harvest concerns are indicated, and (4) what the consequences of taking an action or no action may be on potentially affected federally qualified subsistence users and non-federally qualified users. Requests not within your delegated authority will be forwarded to the Board for consideration. You will maintain a record of all special action requests and rationale for your decision. A copy of this record will be provided to the Administrative Records Specialist in OSM no later than sixty days after development of the document.

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

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

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

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

You may defer a special action request, otherwise covered by this delegation of authority, to the Board in instances when the proposed management action will have a significant impact on a large number of federally qualified subsistence users or is particularly controversial. This option should be exercised judiciously and may be initiated only when sufficient time allows for it. Such deferrals should not be considered when immediate management actions are necessary for conservation purposes. The Board may determine that a special action request may best be handled by the Board, subsequently rescinding the delegated regulatory authority for the specific action only.

Sincerely,

Anthony Christianson
Chaircc: Federal Subsistence Board

cc: Federal Subsistence Board
Office of Subsistence Management
Chair, Bristol Bay Subsistence Regional Advisory Council
Benjamin Mulligan, Deputy Commissioner, Alaska Department of Fish and Game
Mark Burch, Assistant Director for Wildlife Conservation, Alaska Department of Fish and Game
Interagency Staff Committee
Administrative Record

APPENDIX 2

EXCERPTS FROM STAFF ANALYSIS
WP24-15

ISSUES

Proposal WP24-15, submitted by the Igiugig Village Tribal Council, requests to establish a hunt for a resident caribou herd within Katmai National Preserve in Unit 9C for the residents of Igiugig only.

DISCUSSION

The proponent states that local observations for over 30 years have indicated that a herd of caribou, currently assumed by regulators to be associated with the Mulchatna Caribou Herd (MCH), do not migrate out of the Kukaklek (*Qukaqliq*) Lake area and surrounding hills within Katmai National Preserve. According to the proponents, this caribou herd does not leave the Kukaklek area, indicating that they have separated themselves from the MCH.

Residents of Igiugig have a long customary and traditional use of caribou in the Katmai Preserve, specifically the area around Kukaklek Lake. Residents have harvested caribou in this area for decades after a reindeer herding program operated in this area. Even though the villages of Igiugig and Kokhanok have harvested caribou for decades, this herd remains stable. Caribou hunting opportunities under State and Federal regulations have been closed since 2019. Since then, local observations of the resident caribou herd indicate the population has grown by nearly 50% in four years and could support harvest by the residents of Igiugig.

The proponent adds that if establishment of the Federal hunt is successful and the herd continues to show signs of a stable to increasing population, the hunt could be expanded to Kokhanok residents.

ANILCA Section 804 Subsistence User Prioritization

Section 804 of the Alaska National Interest Lands Conservation Act (ANILCA) mandates that the taking on Federal public lands of fish and wildlife for nonwasteful subsistence uses shall be accorded priority over the taking on such lands of fish and wildlife for other purposes. Section 804 further requires that whenever it is necessary to restrict the taking of populations of fish and wildlife on such lands for subsistence uses in order to protect the continued viability of such populations, or to continue subsistence uses, such a priority shall be implemented through appropriate limitations based on the application of three criteria. The three criteria are: (1) customary and direct dependence upon the populations as the mainstay of livelihood, (2) local residency, and (3) the availability of alternative resources. In other words, an analysis based on Section 804 of ANILCA identifies which residents of communities or areas have a priority for the take of the resource.

In this case, the Board has been asked to decrease the pool of federally qualified subsistence users in the proposed hunt area based on the three criteria in ANILCA section 804. This ANILCA section 804 analysis will identify the communities who will be eligible to hunt for caribou in the proposed hunt area if a Federal hunt opens. The area will be closed to the harvest of caribou except by residents of these communities.

The 23 widely dispersed communities, approximately 6,700 people, with a customary and traditional use determination in the proposed hunt area are the following: Aleknagik, Clark's Point, Dillingham, Egegik, Ekwok, Igiugig, Iliamna, King Salmon, Kokhanok, Koliganek, Levelock, Manokotak, Naknek, New Stuyahok, Newhalen, Nondalton, Pedro Bay, Portage Creek, Pope-Vannoy Landing, Port Alsworth, South Naknek, Togiak, and Twin Hills (ADLWD 2023)

1. Customary and Direct Dependence upon the Populations as a Mainstay of Livelihood

Overall, the communities, listed above, have demonstrated dependence on caribou as a mainstay of livelihood. While reporting local hunter effort and harvest to ADF&G has not been widespread, communities have participated in periodic harvest surveys since 1983 with the purpose of documenting caribou hunting activity in the region. These harvest surveys provide a glimpse of the areas communities depend on for harvesting caribou. These areas are usually in a wide area surrounding each community but are highly dependent on where caribou herds migrate and are available for harvest (ADF&G 1985; Morris 1986; Krieg, Kenner et al. 1996; Krieg, Fall et al. 1998; Holen, Krieg, Walker, and Nicholson 2005; Krieg, Holen, and Koster 2009; Holen, Stariwat, Krieg, and Lemons 2012; Evans et al. 2013).

The analyst focused research on the communities who depend on harvesting caribou in Unit 9C, where the proposed hunt area is situated. **Appendix 2** provides a list of communities with demonstrated use of Unit 9C to harvest caribou, based on periodic household surveys: Igiugig, Iliamna, King Salmon, Kokhanok, Levelock, Naknek, Newhalen, and South Naknek. When caribou are available, these communities depend on caribou that they harvest for subsistence. It has been demonstrated that when caribou are not available, in years when the herd does not pass near a community or the population is low, it is felt by these communities who consistently report on the availability of caribou to them and how far they must travel to find them (ADF&G 1985; Morris 1985, 1986; Kenner 1993; Holen et al. 2005; Fall et al. 2006; Krieg et al. 2009).

During these studies, a subset of households in a community describes the geographic extent of their harvesting activities that when taken together create a minimum estimate of the area used by that community to seek resources over a defined time period.

Based on these maps and other identification of subsistence use areas in various studies, five communities have demonstrated seeking caribou in the proposed hunt area: Igiugig, Iliamna, Kokhanok, Levelock, and Newhalen (ADF&G 1985, Morris 1986, Kenner 1993, Holen et al. 2005, Fall et al. 2006, Krieg et al. 2009). For example, a specific report of use of the proposed hunt area comes from Kokhanok in 2006 when Krieg et al. (2009) reported,

> Residents no longer saw caribou around the village. Caribou were sometimes found south of the village, the respondent said, in the mountains towards Katmai National Park and Preserve, or to the west towards Igiugig. The respondent added that when they did migrate east, the caribou usually traveled on the north side of the lake instead of on the south shore, towards Kokhanok. Therefore, to reach the caribou, Kokhanok residents said they had to travel close to Katmai National Park and Preserve, or to the north side of Iliamna Lake and then towards the Mulchatna River. With rising fuel costs, such travel was no longer an option for many hunters, respondents said (Krieg et al. 2009: 105).

These communities, Igiugig, Iliamna, Kokhanok, Levelock, and Newhalen, happen to be some of the closest in proximity to the proposed hunt area, are related culturally (Yup'ik-Aleut), and many families are interrelated from community to community. The population of these communities combined is approximately 565 people (**Table 1,** ADF&G 1985, Morris 1986, Kenner 1993, Holen et al. 2005, Fall et al. 2006, Krieg et al. 2009).

No permanent contemporary settlements are situated in the proposed hunt area, but the area has many semipermanent camps and dwellings that were lived in seasonally by people historically inhabiting the Alagnak River drainage, who moved between camps with the seasons in order to harvest wild resources. These Alagnak River people and others from the south shore of Lake Iliamna used the proposed hunt area extensively while tending to reindeer herds and traplines. People gradually settled or returned to the contemporary communities of Levelock, Igiugig, and Kokhanok after the scattering of the reindeer herds and the gradual opening up of the commercial fishing industry to local participation after 1940, which came to dominate the local cash economy. They continued to tend to traplines in the proposed hunt area into the 1970s, only declining when declining fur prices could no longer support trapping as a means of generating family income (Morris 1986, Chythook 1988, Kenner 1993).

Table 1. The estimated human population of communities with demonstrated use of Unit 9C to hunt for caribou, from 1960 to 2020, based on the U.S. Census (ADCCD 2023).

Community	1960	1970	1980	1990	2000	2010	2020
Igiugig	36	36	33	33	53	50	68
Iliamna	47	58	94	94	102	109	108
Kokhanok	57	88	83	152	174	170	152
Levelock	88	74	79	105	122	69	69
Newhalen	63	88	87	160	160	190	168
TOTAL	291	344	376	544	611	588	565

The rest of this analysis will focus on these five communities, Igiugig, Iliamna, Kokhanok, Levelock, and Newhalen, who have demonstrated use of the proposed hunt area when seeking caribou.

2. Local Residency

The five communities, Igiugig, Iliamna, Kokhanok, Levelock, and Newhalen, are in close proximity to the proposed hunt area compared to other communities in the customary and traditional use determination; however, almost no roads for highway vehicles exist in the Kvichak/Iliamna area and access may be easy or difficult depending on the season. Iliamna and Newhalen are situated on the north shore of Lake Iliamna, approximately 30 miles from the proposed hunt area. Levelock is situated near the outlet of the Alagnak River that can be used to access the proposed hunt area, approximately 35 miles away. The source of the Alagnak River are the lakes encompassed by the hunt area. Igiugig is approximately 12 miles away, and Kokhanok is approximately 10 miles from the hunt area.

Kokhanok accesses the proposed hunt area using off-road vehicles (ORVs) and snowmachines. A network of trails leads from the community to the hunt area. Igiugig uses ORVs and snowmachines, also, sometimes waiting until after freeze-up in order to safely cross creeks and streams along the way. Levelock accesses the hunt area by way of the Alagnak River corridor likely by boat, ORV, or snowmachine, depending on the season. Iliamna and Newhalen must travel around the western shoreline of Lake Iliamna or take an airplane to Kokhanok where they likely hunt with extended family members (Chythlook 1988; Morris 1986; Patterson 2023b, pers. comm.).

3. Availability of Alternative Resources

Igiugig, Iliamna, Kokhanok, Levelock, and Newhalen are all highly dependent upon the annual cycle of subsistence harvests of resources (ADF&G 2023). The harvest of wild resources is a critical component of the economies in these communities, and the communities rely on the harvest of a wide diversity of resources, including salmon, nonsalmon fish, land mammals (caribou, moose), marine mammals (seals, sea lions), migratory waterfowl (ducks, geese), other birds (ptarmigan, grouse), furbearers, berries, greens, and wood. It is typical for harvests to be dominated by fish and large land mammals, including caribou and moose.

These communities harvest caribou when they are available to them. Generally,as the Mulchatna caribou herd population has declined since the mid-1990s, at the same time, regulations have become more restrictive, and some seasons have closed. Caribou in the proposed hunt area are the only caribou within the use area territories of these communities, other than Mulchatna caribou.

The Mulchatna Caribou Herd has been known to migrate past these communities. The herd population was estimated at 200,000 in 1996, followed by a steep decline to approximately 85,000 caribou by 2004 and 30,000 by 2008. The most recent estimate, obtained in July 2022, shows that the population, at 12,112 caribou, is less than half of the State's minimum population objective, and hunting opportunity has been reduced or closed across much of its range, which is generally in Units 9B, 9C, 17A, 17B, 17C, 18, 19A and 19B. It is unlikely that hunting pressure or unreported harvesting was responsible for this decline. "Overgrazing of available forage precipitated the Mulchatna caribou herd population decline, which resulted in malnutrition, decreased productivity, susceptibility to disease, and increase in disease prevalence in the population. . . Although the hunting pressure was intense during periods of high

abundance, it is not thought to be responsible for the precipitous decline the Mulchatna caribou herd population" (Barten and Watine 2020:4).

Declining caribou populations in the area have led to increased dependence on moose, but moose do not exist in large numbers nearby these communities. For example, in 2005, Iliamna and Newhalen reported that moose had supplanted caribou as a dominant large land mammal species in the immediate hunting area, but moose were scarce near the communities (Fall et al. 2006). All communities opportunistically harvest caribou or moose, depending on what is available and the regulations in place. Restricting the harvest of caribou in a given area will presumably have an impact on moose populations and vice versa, because many hunters are opportunistic and will harvest whatever large land mammals are available.

Recreational opportunities, especially for sport fishing, exist in several of these communities. There are lodges in Iliamna and located across the Kvichak River from Igiugig that may provide some jobs and other sources of income for these communities, and estimated median incomes in Kokhanok and Levelock are below those of the other communities. Iliamna, being the transportation hub of the region, supports some commercial activity, including a general store (ADCCED 2023).

Conclusion

The villages of Igiugig and Kokhanok have the higher customary dependence on caribou in the proposed hunt area, based on the three criteria in ANILCA section 804. Only these two communities will be eligible to harvest caribou in the area. Both communities are highly dependent on caribou, are situated in closest proximity to the proposed hunt area compared to other communities, and neither have significant alternative resources to depend on in terms of other populations of caribou, other wild resources, local commercial activity, or grocery stores.

OSM CONCLUSION

Support Proposal WP24-15 **with modification** to clarify regulatory language, establish a "may be announced" season, delegate authority to the Katmai National Park and Preserve superintendent to manage the hunt via delegation of authority letter (DAL) only (**Appendix 1**), and limit eligibility to harvest caribou in the area to residents of Igiugig and Kokhanok only.

Justification

This proposal, as modified by OSM, provides for greater subsistence opportunity for the residents of Igiugig and Kokhanok. Adoption of this proposal also maintains a meaningful priority. Delegating in-season management authority to the Katmai NP superintendent through a DAL provides the management flexibility to address any conservation concerns, while maximizing subsistence opportunity. As more information becomes available about the Kukaklek caribou, hunting opportunity can be adjusted accordingly through in-season management.

The villages of Igiugig and Kokhanok have the higher customary dependence on caribou in the proposed hunt area, based on the three criteria in ANILCA §804. Only these two communities will be eligible to

harvest caribou in the area. Both communities are highly dependent on caribou, are situated in closest proximity to the proposed hunt area compared to other communities, and neither have significant alternative resources to depend on in terms of other populations of caribou, other wild resources, local commercial activity, or grocery stores.

LITERATURE CITED

ADCCED. 2023. Community Database Online. https://www.commerce.alaska.gov/web/dcra/ResearchAnalysis.aspx. Alaska Department of Commerce, Community, and Economic Development, Division of Community and Regional Affairs.

ADLWFD. 2023. Online database https://live.laborstats.alaska.gov/pop/index.html. Labor and Market Information, Population and Census, Alaska Population Estimates, Places and Other Areas, Cities and Census Designated Places (CDPs) 2020 to 2022. Alaska Department of Labor and Workforce Development. Juneau, AK.

ADF&G. 1985. Alaska Habitat Guide Reference Maps. Southwest Region, Volume IV: Human Use of Fish and Wildlife Resources. Division of Habitat. Juneau, AK.

ADF&G. 2017. Winfonet. Retrieved: April 12, 2017.

ADF&G. 2019a. Winfonet. Retrieved: August 27, 2019.

ADF&G. 2019b. Community Subsistence Information System. http://www.adfg.alaska.gov/sb/CSIS/ Retrieved: August 22 – 23, 2019.

ADF&G. 2020. Fall Mulchatna and Nushagak Peninsula Caribou Hunting Opportunities. Advisory Announcement. July 17, 2020. ADF&G. https://www.adfg.alaska.gov/static/applications/webintra/wcnews/2020/releases/07-17-2020.pdf. Accessed May 17, 2021.

ADF&G. 2021a. Mulchatna Caribou and Nushagak Peninsula Caribou Hunting Seasons. July 22, 2021. chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://www.adfg.alaska.gov/static/applications/publicnotification/2021/releases/07-22-2021.pdf. Retrieved: May 15, 2023.

ADF&G. 2021b. Harvest Lookup. ADF&G. https://secure.wildlife.alaska.gov/index.cfm?fuseaction=harvest.lookup. Accessed May 18, 2021.

ADF&G. 2022. Alaska Board of Game Central & Southwest Region Meeting. Wasilla, AK. https://www.adfg.alaska.gov/static/regulations/regprocess/gameboard/pdfs/2021-2022/csw/soa.pdf. 11pp, Retrieved: May 2, 2023.

ADF&G. 2023. Community Subsistence Information System. Online database http://www.adfg.alaska.gov/sb/CSIS/index.cfm?ADFG=harvInfo.harvestCommSelComm. Division of Subsistence, Anchorage, AK.

ADF&G. 2024. Recording of the Alaska Board of Game Meeting. https://www.adfg.alaska.gov/static/regulations/regprocess/gameboard/swf/2023-2024/waw/index.html?mediaBasePath=/Meeting%2001-26-24%20%28Jan-26-24%205-09-36%20PM%29. 1:29:40 of the recording. January 26, 2024. Kotaebue, AK.

Barten, N.L. 2015. Mulchatna herd caribou. Units 9B, 17, 18 south, 19A, and 19B. Pages 3-1 – 3-22 *in* P. Harper and L.A. McCarthy, eds. Caribou management report of survey-inventory activities 1 July 2012 – 30 June 2014. ADF&G. Juneau, AK.

Barten, N. L., and L. N. Watine. 2020. Caribou management report and plan, Game Management Units 9A, 9B, 9C, 17, 18, 19A, 19B: Report period 1 July 2012–30 June 2017, and plan period 1 July 17–30 June 2022. Alaska Department of Fish and Game, Species Management Report and Plan ADF&G/DWC/SMR&P-2020-2, Juneau.

BBSRAC. 2020. Transcripts of the Bristol Bay Regional Subsistence Advisory Council proceedings. March 10, 2020. Naknek, AK. Office of Subsistence Management, USFWS. Anchorage, AK.

BBSRAC. 2022. Transcripts of the Bristol Bay Regional Subsistence Advisory Council proceedings. November 2, 2022. Dillingham, AK. Office of Subsistence Management, USFWS. Anchorage, AK.

BBSRAC. 2023. Transcripts of the Bristol Bay Subsistence Regional Advisory Council proceedings. March 8, 2023. Naknek, AK., Office of Subsistence Management, USFWS. Anchorage, AK.

Chythlook, M. 1988. Field notes in From *Neqa* to *Tepa, Łuq'a* to *Chuqilin*: a database with traditional knowledge about the fish of Bristol Bay and the Northern Alaska Peninsula. Database disc version 1.0. 2005. ADF&G, Div. of Subsistence. Anchorage, AK.

Evans, S, M. Kukkonen, D. Holen, and D.S. Koster. 2013. Harvests and uses of wild resources in Dillingham, Alaska, 2010. ADF&G, Div. of Subsistence Tech. Paper No. 375. Anchorage, AK.

Fall, J.A. 1993. An overview of subsistence uses of the Northern Alaska Peninsula Caribou Herd by communities of Game Management Units 9C and 9E. ADF&G, Div. of Subsistence Tech. Paper No. 224. Anchorage, AK.

Fall, J.A., D.L. Holen, B. Davis, T. Krieg, and D. Koster. 2006. Subsistence harvests and uses of wild resources in Iliamna, Newhalen, Nondalton, Pedro Bay, and Port Alsworth, Alaska, 2004. ADF&G, Div. of Subsistence Tech. Paper No. 302. Anchorage, AK.

Holen, D.L., T.M. Krieg, R. Walker, and H. Nicholson. 2005. Harvests and uses of caribou, moose, bears, and Dall sheep by communities of Game Management Units 9B and 17, Western Bristol Bay, Alaska 2001–2002. ADF&G, Div. of Subsistence Tech. Paper No. 283. Anchorage, AK.

Holen, D.L., T.M. Krieg, T. Lemons. 2011. Subsistence harvests and uses of wild resources in King Salmon, Naknek, and South Naknek, Alaska, 2007. ADF&G, Div. of Subsistence Tech. Paper No. 360. Anchorage, AK.

Holen, D., J. Stariwat, T.M. Krieg, and T. Lemons. 2012. Subsistence harvests and uses of wild resources in Aleknagik, Clark's Point, and Manokotak, Alaska, 2008. ADF&G, Div. of Subsistence Tech. Paper No. 368. Anchorage, AK.

Kenner, P.A. 1993. Field notes. USFWS, Office of Subsistence Management, Anchorage, AK.

Krieg, T.M., J.A. Fall, C.J. Utermohle, and L. Brown. 1998. Subsistence harvests and uses of caribou, moose, and brown bear in 12 Alaska Peninsula communities, 1995/96 and 1996/97. ADF&G, Div. of Subsistence Tech. Paper No. 244. Anchorage, AK.

Krieg, T.M., D.L. Holen, and D. Koster. 2009. Subsistence harvests and uses of wild resources in Igiugig, Kokhanok, Koliganek, Levelock, and New Stuyahok, Alaska, 2005. ADF&G, Div. of Subsistence Tech. Paper No. 322. Anchorage, AK.

Morris, J.M. 1985. The use of fish and wildlife resources by residents of the Bristol Bay Borough, Alaska. ADF&G, Div. of Subsistence Tech. Paper No. 123. Anchorage, AK.

Morris, J.M. 1986. Subsistence production and exchange in the Iliamna Lake Region, Southwest Alaska, 1982-1983. ADF&G, Div. of Subsistence Tech. Paper No. 136. Anchorage, AK.

Patterson, D. 2023a. Anthropologist. Personal communication: email. Alaska Regional Subsistence Program, National Park Service, Anchorage, AK.

Patterson, D. 2023b. Anthropologist. Personal communication: telephone. Alaska Regional Subsistence Program, National Park Service, Anchorage, AK.

Reiley, B. 2021. Personal communication: e-mail. ADF&G. Anchorage, AK.

WISRAC. 2020. Transcripts of the Western Interior Alaska Regional Subsistence Advisory Council proceedings. March 3, 2020. Fairbanks, AK. Office of Subsistence Management, USFWS. Anchorage, AK.