

WP26–51 Executive Summary	
General Description	Wildlife Proposal WP26-51 requests to establish a draw permit hunt for muskoxen in Units 21D and 24D to match the current State hunt, which has a harvest limit of one bull by drawing permit and a season of Feb. 1–Mar. 15. <i>Submitted by the Western Interior Alaska Subsistence Regional Advisory Council.</i>
Proposed Regulation	<p>Unit 21—Muskox</p> <p><i>Unit 21D— 1 bull by Federal drawing permit</i> <i>Feb. 1–Mar. 15</i></p> <p><i>Unit 21 remainder</i> <i>No Federal open season</i></p> <p>Unit 24—Muskox</p> <p><i>Unit 24D— 1 bull by Federal drawing permit</i> <i>Feb. 1–Mar. 15</i></p> <p><i>Unit 24 remainder</i> <i>No Federal open season</i></p>
OSM Preliminary Conclusion	Support Proposal WP26-51 with modification to delegate authority to a Federal land manager to be determined by the Federal Subsistence Board at their April 2026 meeting. Delegated authority includes determining the number of permits to be issued and the method of permit allocation between State and Federal permits for muskox in Units 21D and 24D.
Western Interior Alaska Subsistence Regional Advisory Council Recommendation	
Interagency Staff Committee Comments	
ADF&G Comments	
Written Public Comments	None

DRAFT WILDLIFE ANALYSIS WP26-51

ISSUE

Wildlife Proposal WP26-51, submitted by the Western Interior Alaska Subsistence Regional Advisory Council (Council), requests to establish a draw permit hunt for muskoxen in Units 21D and 24D to match the current State hunt, which has a harvest limit of one bull by drawing permit and a season of Feb. 1–Mar. 15.

Proponent statement

The proponent states this proposal would establish a Federal muskox hunt in Units 21D and 24D in alignment with State regulations.

Current Federal Regulations

Unit 21—Muskox

None

Unit 24—Muskox

None

Proposed Federal Regulations

Unit 21—Muskox

Unit 21D– 1 bull by Federal drawing permit

Feb. 1–Mar. 15

Unit 21 remainder

No Federal open season

Unit 24—Muskox

Unit 24D– 1 bull by Federal drawing permit

Feb. 1–Mar. 15

Unit 24 remainder

No Federal open season

Current State Regulations

Unit 21D–Muskox

Residents– One bull by permit

DX080 Feb. 1–Mar. 15

Unit 24D–Muskox

Residents– One bull by permit

DX080 Feb. 1–Mar. 15

Extent of Federal Public Select Land or Water

Unit 21D is comprised of approximately 55% Federal public lands that consist of 29% U.S. Fish and Wildlife Service (USFWS) and 26% Bureau of Land Management (BLM) managed lands.

Unit 24D is comprised of approximately 76% Federal public lands that consist of 67% USFWS and 10% BLM managed lands.

Customary and Traditional Use Determination

The Federal Subsistence Board has not made a customary and traditional use determination for Muskox in Units 21 or 24. Therefore, all rural residents of Alaska may harvest muskox in these units.

Regulatory History

In March 2020, the Alaska Board of Game (BOG) considered two muskox related proposals at their Interior and Western Arctic/Western Region meeting. Proposals 31 and 74 both requested to establish a registration hunt for muskox in Units 21D, 22A, and 24D. The BOG amended Proposal 74 to establish a resident drawing permit hunt in Units 21D and 24D, with a season of Feb. 1–Mar. 15 and a harvest limit of 1 bull with up to 5 permits available. The BOG felt the amended season dates of Feb. 1–Mar. 15 would protect muskox during the calving season, and they felt establishing a drawing permit would offer more protection from overharvest than a registration permit would. The BOG also established a negative customary and traditional use finding for muskox in both Units 21D and 24D. They also adopted Proposal 31 as amended to apply only to Unit 22A (ADF&G 2020).

Biological Background

Seward Peninsula Muskox Population

Muskoxen are adapted for survival in arctic habitats. Their large body size, thick undercoat and long guard hairs allow muskoxen to stay warm in arctic climates and conserve energy (Klein 1992).

However, their thick fur does not allow them to regulate their body temperature, especially following

high exertion activities, such as running. Their lower chest height and smaller hooves make travelling through deep snow difficult (Klein 1992; Ihl and Klein 2001); therefore, they tend towards wind swept areas with reduced snow depth (Dau 2005). These adaptations limit suitable habitat and lead muskox groups to remain localized during winter months (Klein 1992). Therefore, disturbance to muskox groups during the winter by hunters or predators could decrease survival through increased energetic requirements and movement to unsuitable habitat (Nelson 1994; Hughes 2018).

Muskoxen were extirpated in Alaska by the late 1800s, and perhaps even earlier on the Seward Peninsula (Gorn and Dunker 2015). Muskoxen were reintroduced to Units 22C and 22D in 1970 and have since expanded their range to the north and east (Gorn and Dunker 2015). Currently, muskoxen from the Seward Peninsula population occupy suitable habitat in Units 22, 21D, 24D and the southern portion of Unit 23 (Dunker and Germain 2022).

Muskox management on the Seward Peninsula has been guided by recommendations developed by the Seward Peninsula Muskox Cooperators Group (Cooperators). The group was composed of staff from NPS, BLM, USFWS, ADF&G, Bering Straits Native Corporation, Kawerak Inc., Reindeer Herders Association, Northwest Alaska Native Association, residents of Seward Peninsula communities and representatives from other interested groups or organizations. The Cooperators Group has not met since January of 2008 and is now defunct (Braem 2022, pers. comm.). The following management goals formed the basis of the cooperative interagency management plan for Seward Peninsula muskoxen developed from 1992 through 1994 (Nelson 1994): 1) manage populations to allow for growth while providing for harvest; 2) protect habitats; and 3) encourage cooperation and information sharing among agencies.

Aerial survey methods used to monitor the Seward Peninsula muskox population include minimum counts, distance sampling and composition surveys. Survey areas include the core count area of Units 22B, 22C, 22D, 22E, and 23 SW, and the expanded count area, which includes northern Unit 22A, southeastern Unit 23, western Unit 21D, and western Unit 24. Beginning in 2010, distance sampling techniques, conducted during the winter, were implemented to estimate abundance of Seward Peninsula muskox. This methodology replaced the minimum count surveys used since 1980. The minimum count surveys assumed 100% coverage but had varying effort from year to year. The distance sampling protocol was developed to provide more useful data and improve long-term monitoring efforts (Gorn and Dunker 2015). Surveys of the expanded count area were also implemented in 2010 to better understand the eastward migration of muskoxen from the Seward Peninsula, their current distribution and total population. Composition surveys, completed in the spring after distance sampling, document large scale patterns in the age and sex structure of the population.

After reintroduction, the Seward Peninsula muskox population experienced periods of growth between 1970 and 2000 (14% annual rate of increase) and 2000 and 2010 (3.8% annual rate of increase), peaking at 2,903 muskoxen in 2010 (Gorn 2011). However, a 23.4% decrease in abundance occurred in 2012 and from 2015–2021, the muskox population experienced an annual rate of decline of 2%, to an estimated 2,071 muskoxen (**Figure 1**). The latest survey, conducted in 2024, estimated a total 1,932 muskoxen, indicating stability in the population since the last survey (ADF&G 2025). It was

hypothesized the decline was related to the high mortality rates of adult cows and declines in the number of short yearlings (10–12-month-old muskoxen) (Gorn 2012); however, some caution should be used when interpreting these mortality rates as they are based on a small sample size (Gorn 2011).

As the Seward Peninsula muskox population has continued to grow and expand, more individual muskox groups have been found in the expanded count area. From 2010–2021, the muskox population in the expanded count area ranged from 258–473, averaging 361 muskoxen and accounting for about 17% of the total Seward Peninsula muskox population in 2021 (**Figure 2**) (Gorn and Dunker 2015, Dunker 2017, 2022). Additionally, 147 or 53% of these muskoxen are found in Unit 22A, which is outside of the proposed hunt area (Burch 2025, pers. comm.)

Composition surveys indicate stable and high ratios of mature bulls in the Nulato Hills count area between 2015 and 2024, ranging from 45–84 mature bulls:100 cows (**Figure 3**). ADF&G management objectives for the Seward Peninsula require maintaining a bull:cow ratio of at least 40:100 cows (Dunker and Germain 2022). Mature bull ratios range-wide were consistently lower during this time period, ranging from 29–46 mature bulls:100 cows (Carson 2025, pers. comm.; Gorn and Dunker 2015; Dunker 2017, 2022). In 2024, the range-wide ratio increased to 46 mature bulls:100 cows, indicative of a healthy and stable population of mature bulls (ADF&G 2025).

Short yearlings (SY) are muskox between 10 and 12 months old and provide a measure of recruitment and population growth. Composition surveys indicate a decrease of short yearlings in the Nulato Hills count area from the high in 2012 but remained relatively stable between 2015 and 2024, ranging from 22–33 (Carson 2025, pers. comm.; Dunker 2020) (**Figure 3**). In 2024, the range-wide ratio was 43 SY:100 cows, indicative of a healthy and stable population of SY. The next muskox population abundance and composition survey is tentatively scheduled for spring 2028 (ADF&G 2025).

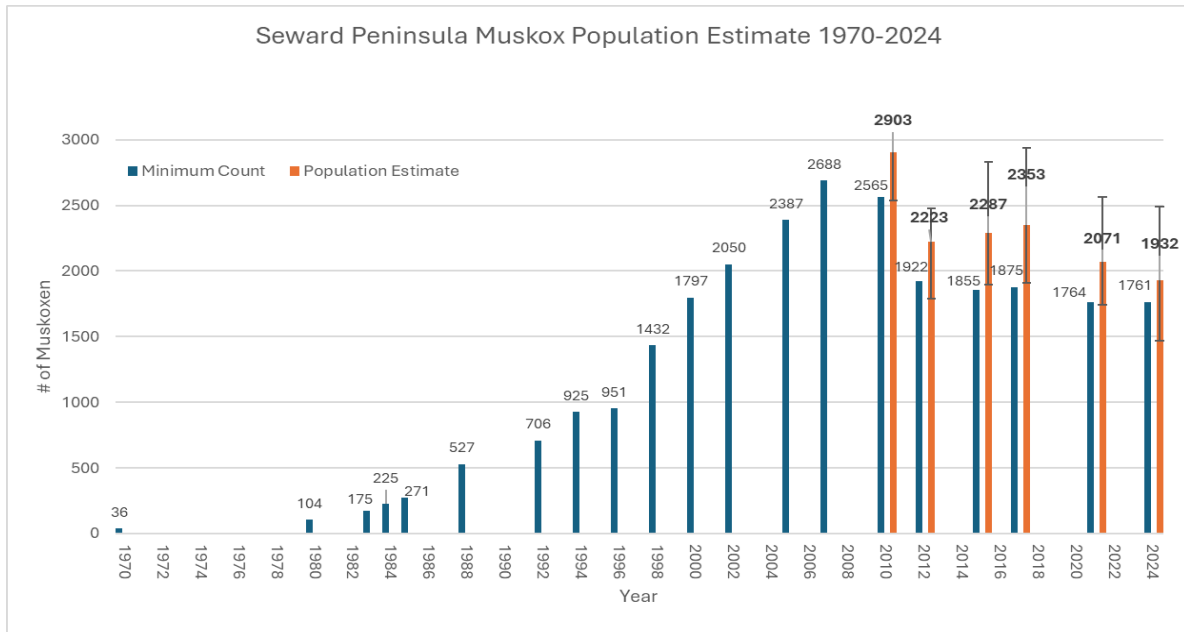


Figure 1. Population estimates for Seward Peninsula muskox. The results pre-2010 are from the minimum count surveys and only include the core-count area (Units 22B, 22C, 22D, 22E, and 23 SW). Results post-2010 are from the distance sampling technique and is range-wide (core count area and the expanded count area of northern Unit 22A, southeastern Unit 23, western Unit 24, and western Unit 21D) (Carson 2025, pers. comm.).

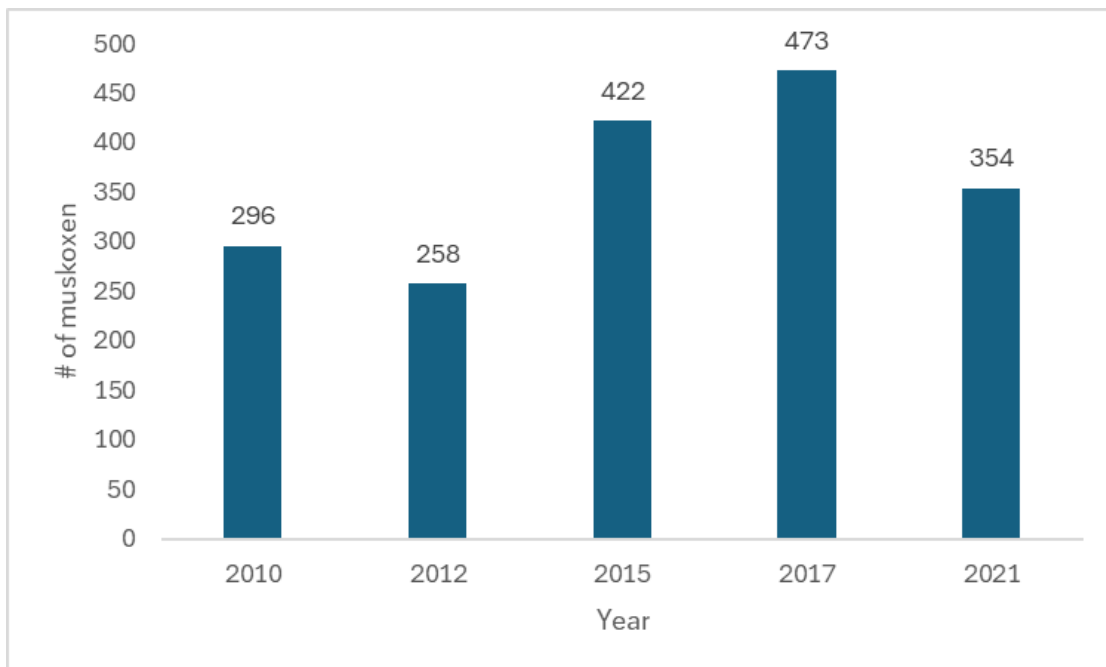


Figure 2. Population estimates for expanded count area only. This includes Units 21D, 22A, 23, and 24D.

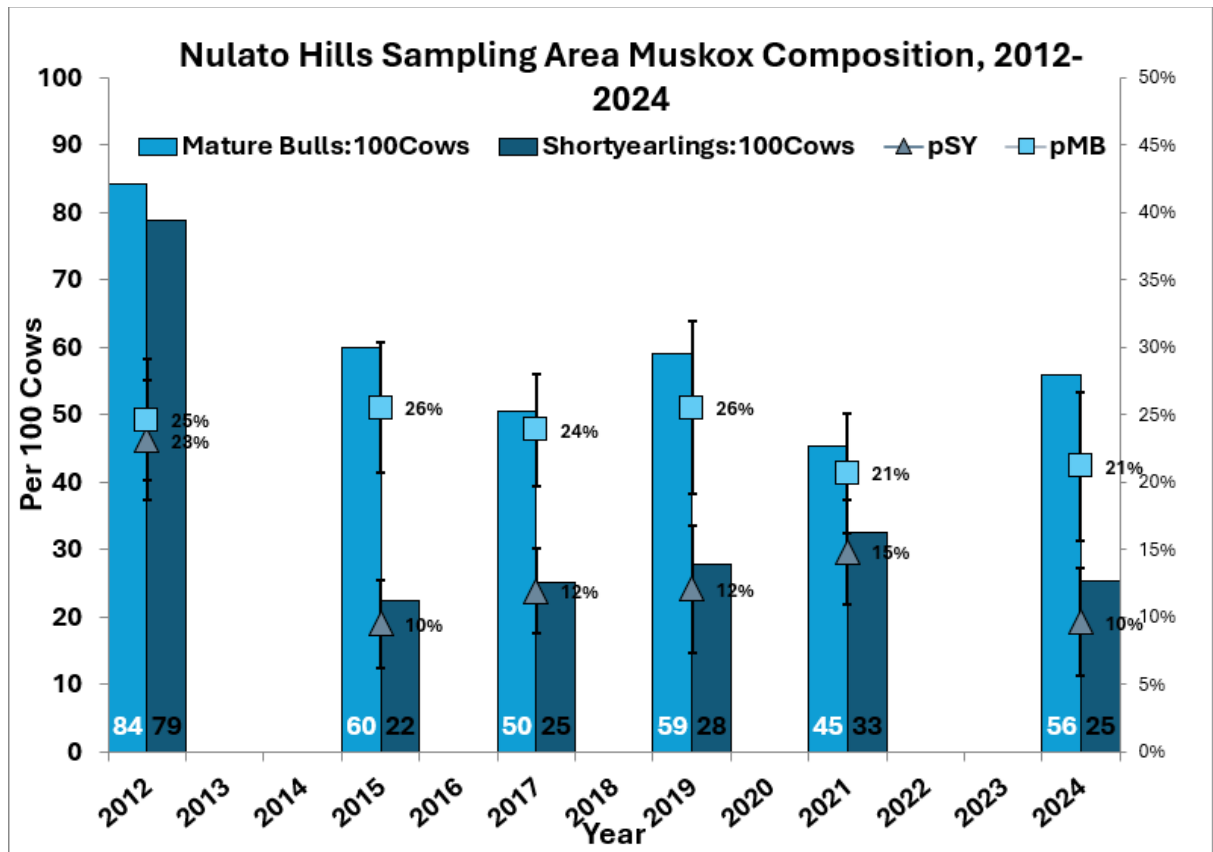


Figure 3. Population composition for Nulato Hills muskox population. Ratios are the number of mature bulls:100 cows and short yearlings:100 cows. Mature bulls are ≥ 4 years old. Short yearlings are muskoxen between 10 and 12 months old (Carson 2025, pers. comm.).

Cultural Knowledge and Traditional Practices

Subsistence practices of the residents of Units 21 and 24 reflect the cultural traditions of the Nunamiut Inupiat, Koyukon Athabascans, and Euro-American settlers (Marcotte 1986, McFayden Clark 1991, Nelson 1986, Oswalt 1967). Residents' broad knowledge of and dependence on available resources shapes their adaptive and opportunistic practices that flexibly shift in response to fluctuations of human and wildlife populations, migrations, and continuous environmental change (Trainor et al. 2019, Brown et al. 2015, Wilson and Kostick 2016, Nelson 1986).

In Inupiaq, muskoxen are called *umingmak*, "the one with hair like a beard" (Lent 1999). The earliest archaeological evidence for use of muskoxen in arctic Alaska dates to Birnirk culture, beginning in approximately 600 A.D. (Lent 1999). Birnirk people used ladles and spoons made of muskox horn and have been found buried in muskox robes (Lent 1999). Muskoxen were likely always present at relatively low numbers, and their use was limited but continuous over approximately 1500 years. Historically, muskoxen provided fat when caribou were lean in late winter and early spring and provided an alternative food source in years when caribou were scarce. In comparison to caribou, the availability of muskoxen was more predictable in time and space (Klein 1989). Muskoxen are

considered an efficient and economical big game harvest because they cluster together when approached by hunters (Ikuta and Park 2013).

Muskoxen were more heavily hunted following the introduction of firearms, and were also intensively harvested by whalers, trappers, and traders in the 1800s. According to ethnohistoric research, the last muskoxen in Northwestern Alaska were hunted in the late 1850s around Wainwright, but the exact timing of their local extirpation further south in the Northwest Arctic and Seward Peninsula regions is difficult to determine (Lent 1999). In Alaska, muskoxen persisted the longest in the eastern Brooks Range, where they were extirpated by the 1890s (Lent 1998). Due to their extirpation, residents of the Seward Peninsula, Unit 21D, and 24D were unable to hunt muskoxen for an extended period.

Muskoxen were first reintroduced to the region in 1970 and gradually expanded east (Machida 1997, Lent 1999). In 1990, the U.S. Fish and Wildlife Service reported that muskox had been sighted in the Koyukuk River drainage only 3 times in recent history (USFWS 1990). The population in this region has since grown (see Biological Background section) but remains limited (WIRAC 2025: 89).

Muskoxen represent both a valuable subsistence resource and a potential nuisance or threat to communities and hunters (Lent 1999, Mason 2015). Across their range in northern Alaska, the presence of muskoxen is reported to deter caribou and prevent successful caribou harvests (Kutz et al. 2017). Local knowledge suggests this impact may result from the fact that both caribou and muskox forage on lichen. Describing the reintroduction of muskox near Brevig Mission in the early 1970s, a member of the Seward Peninsula Subsistence Regional Advisory Council stated that in “the area south of Brevig Mission we had the [caribou] herd and the muskox feeding on winter ground, therefore pretty much depleting everything in and around the area” (OSM 2024: 60). Local knowledge also suggests that muskoxen are heavily preyed upon or deterred by brown bears, and that muskox populations appear to be more robust in areas where there is heavy brown bear hunting (WIRAC 2017: 104).

If this proposal is adopted, all rural residents would be eligible to apply for a draw permit to hunt muskox under Federal subsistence regulations in Units 21D and 24D. The communities closest to this area include those in Unit 21D (Koyukuk, Galena, Nulato, Kaltag, and Ruby) and 24D (Huslia). Household subsistence surveys have documented very little use of muskox in these communities, with just one muskox reported harvested by a resident of Galena in 2010 (CSIS 2025). However, not all household subsistence surveys have specifically inquired about muskox harvest (e.g., Brown et al. 2015), so it is possible that the available data underestimates use of this species. Data indicating low use of muskox may also be due to few hunt opportunities (limited State hunt opened in 2021), historically low population numbers, and the long-term interruption of subsistence use of muskox after the species was extirpated in the 19th century. While muskoxen are not currently a major source of food in relation to other subsistence resources, a harvested muskox yields a large amount of meat and is shared with the community. For instance, the muskox harvested by a resident of Galena provided 295 pounds of wild food to the community (Brown et al. 2015). Previous analyses of customary and traditional use of muskox in Unit 22 highlight that, once available, local subsistence users are likely to participate in muskox hunting opportunities (OSM 1995).

Harvest History

Prior to 2012, muskox harvest rates on the Seward Peninsula were calculated as 3% of the total population size. Since 2012, Seward Peninsula muskox harvest rates have been based primarily on the number of mature bulls in the population. Specifically, harvest quotas are calculated as 10% of the estimated number of mature bulls within the hunt area, and range-wide harvest targets are set at 2% of the estimated population size (Gorn and Dunker 2013; Gorn and Dunker 2015). In 2020, ADF&G estimated the harvestable surplus in Units 22A, 21D and 24D combined to be nine bulls (ADF&G 2020).

This shift in harvest management was accompanied by a significant reduction in harvest. Range-wide, harvest declined from 111 muskox in 2011 (5.5% of the total population) to 26 muskoxen in 2012 (1.2% of the total population). In 2024, total muskox harvest from the Seward Peninsula population was 60 muskoxen, about 3% of the total estimated population. Total reported harvest has remained below 2% of the total population, which has likely been influential in the subsequent increase in mature bulls (**Figure 4**) (Gorn and Dunker 2015; Dunker 2022, pers. comm.; Carson 2025, pers. comm.). After the population decline in 2012, the realized harvest rate has ranged from 1%–1.7% with an average of 1.3% between 2012 and 2021 (Dunker 2022, pers. comm.). Harvest of muskoxen on the Seward Peninsula by Federal permit has remained low with most muskox harvest occurring by State permit.

Since 2021, when the Units 21D and 24D muskox hunts began under State regulations, three DX080 permits have been issued each year and harvest has been less than one muskox per year (Caikoski 2025).

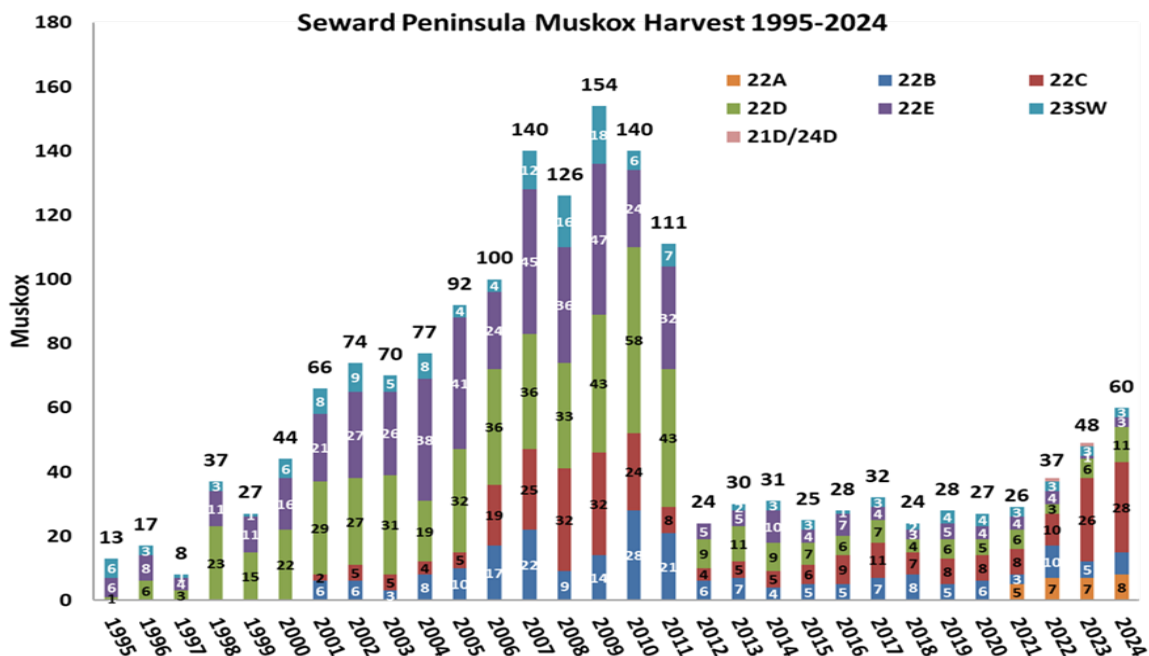


Figure 4. Reported harvest of Seward Peninsula muskox by subunit (Carson 2025, pers. comm.).

Alternative(s) Considered

One alternative considered was to delegate authority to administer the Federal muskox hunts in Units 21D and 24D to a Federal in-season manager. The number of permits in draw hunts typically changes each year. As the State offers limited permits, coordination with ADF&G on permit numbers and allocation would also be beneficial.

The Federal land managers in Units 21D and 24D are the Northern Interior Refuge Complex manager (includes Kanuti/Koyukuk/Nowitna/Innoko NWRs) and the BLM Anchorage Field Office manager. Historically, authority has been delegated to the Federal manager with the most land in the area, which is the Northern Interior Refuge Complex based out of Galena, AK. However, muskox mostly occur on the BLM managed lands. The BLM Anchorage Field Office manages the Unit 22 muskox hunts, and is based out of Anchorage, AK.

Discussion and Effects

Establishing a Federal season for muskoxen in Units 21D and 24D would provide additional opportunity for federally qualified subsistence users to harvest muskoxen on Federal public lands. Currently, there is no Federal subsistence season for muskoxen in Units 21D and 24D, making Federal regulations more restrictive than State regulations. Additionally, federally qualified subsistence users must compete with all Alaskan residents for the limited number of State drawing permits available in each unit.

According to local users of the Middle Yukon Fish and Game Advisory Committee who submitted Proposal 74 to the BOG in 2020, muskox are frequently observed in these units and could provide an additional source of meat for Alaskan hunters.

Adopting this proposal would also increase alignment between State and Federal regulations as directed by Executive Order 14153 3(b)(xxii) to “ensure to the greatest extent possible that hunting and fishing opportunities on Federal lands are consistent with similar opportunities on State lands.”

Conservation concerns for these hunts would be mitigated by the limitation on the number of draw permits issued, which could be adjusted annually in response to the status of the muskox population. However, high mature bull:cow ratios suggest there is a harvestable surplus in these areas. Due to the small size of the muskox population, habitat limitations and susceptibility to over hunting, this population is closely managed by the State. Since the demand for muskoxen is greater than the harvestable surplus, a drawing permit is recommended so that harvest is limited, and the threat of overharvest minimized. The Federal manager will need to work closely with the State to monitor harvest under both State and Federal hunts if this proposal is adopted.

OSM PRELIMINARY CONCLUSION

Support Proposal WP26-51 with modification to delegate authority to a Federal land manager to be determined by the Federal Subsistence Board at their April 2026 meeting. Delegated authority includes determining the number of permits to be issued and the method of permit allocation between State and Federal permits for muskox in Units 21D and 24D.

The draft regulations read:

Unit 21—Muskox

Unit 21D— 1 bull by Federal drawing permit

Feb. 1–Mar. 15

The [NWR or BLM land manager] after coordination with ADF&G, OSM, the [NWR or BLM land manager], and the Chair of the affected Council(s) is authorized within the parameters set by the Board, to determine the number of permits issued and the method of permit allocation between State and Federal permits.

Unit 21 remainder

No Federal open season

Unit 24—Muskox

Unit 24D— 1 bull by Federal drawing permit

Feb. 1–Mar. 15

The [NWR or BLM land manager] after coordination with ADF&G, OSM, the [NWR or BLM land manager], and the Chair of the affected Council(s) is authorized within the parameters set by the Board, to determine the number of permits issued and the method of permit allocation between State and Federal permits.

Unit 24 remainder

No Federal open season

Justification

Establishing a Federal muskox season in Units 21D and 24D provides additional opportunity for federally qualified subsistence users to harvest muskoxen on Federal public lands. Conservation concerns are mitigated by drawing permits limiting harvest. Currently, there is no Federal subsistence season for muskoxen in either unit, and adopting this proposal increases alignment with State regulations.

Delegating authority to an in-season Federal manager to set the number of drawing permits each year and administer the issuance of permits is necessary for this hunt to be effectively implemented. OSM is neutral on which Federal manager is delegated authority, but looks forward to receiving feedback from the Councils, Federal field agency staff, and the Board. It is OSM's intent that whomever is delegated authority will be required to coordinate with the other Federal manager prior to taking any in-season management actions.

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