Draft Wildlife Closure Review
WCR26-16

ISSUE: Wildlife Closure Review WCR26-16 is a standard review of a Federal subsistence wildlife closure to the harvest of moose by non-federally qualified users hunting on Federal public lands in Unit 22E.

Closure Location and Species: Unit 22E– Moose

Should this closure be retained, rescinded, or modified? Please provide as much supporting information as possible.

Closure Dates: Year-round.

Current Federal Regulations

Unit 22E—Moose

Unit 22E—1 antlered bull.	*Aug. 1–Mar. 15.*
Federal public lands are closed to the taking of moose except by federally qualified subsistence users hunting under these regulations	

Current State Regulations

Unit 22E−Moose

Unit 22E	*Residents: One bull*	*HT*	*Aug.1–Dec. 31*
	OR		
	Residents: One antlered bull	*HT*	*Jan. 1– Mar. 15*
	Nonresidents: One bull with 50-inch antlers or antlers with 4 or more brown tines on at least on side by permit.	*DM855*	*Sept. 1–14*

Regulatory Year Initiated: 2002

Closure last reviewed: 2022 – WCR22-16

Justification for Original Closure

Section 815(3) of ANILCA states:

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

Federal public lands were closed by the Board through the adoption of WP02-34. This was due to conservation concerns for the declining moose population and to provide federally qualified subsistence users an opportunity to harvest the limited number of moose on Federal public lands in Units 22B, west of the Darby Mountains; 22D, that portion within the Kougarok, Kuzitrin, and Pilgrim river drainages (22D Kuzitrin); 22D, that portion west of the Tisuk River drainage and Canyon Creek (22D SW); and 22E. The Board adopted Proposal WP02-34 with the Office of Subsistence Management (OSM) modification, which shortened the moose seasons in 22B West, 22D Kuzitrin, 22D SW, and 22E and changed the harvest limit to bulls only in Units 22B West, 22D SW, and 22E. The Board adopted these changes to protect the cows in the area, as calf survivability was believed to be depressing the population. This proposal also restricted the harvest in all units to federally qualified subsistence users. The Board felt closing Federal public lands to all but federally qualified subsistence users would improve subsistence harvest opportunities in an area where the State had recommended restricting moose harvest.

Council Recommendation for Original Closure

The Seward Peninsula Regional Advisory Council (Council) unanimously supported Proposal WP02-34, as modified by OSM. The Council believed this proposal would provide sufficient opportunity for federally qualified subsistence users while taking the most conservative approach to conserving the moose population. The Council also supported Proposal WP02-35 as modified by OSM. They felt restricting harvest to the most dependent users of the resource was a conservative measure that would still provide a subsistence priority.

State Recommendation for Original Closure

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

Extent of Federal Public Lands

Unit 22E is comprised of approximately 56% Federal public lands and consists of 50% National Park Service (NPS) and 6% Bureau of Land Management (BLM) managed lands.

Customary and Traditional Use Determination

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

Regulatory History

In 2002, WP02-34 requested to close Federal public lands to the harvest of moose by non-federally qualified users in units 22B West; 22D Kuzitrin and SW; and 22E for the conservation of a declining moose population. The proposal also asked to shorten the season length and limit the number of moose harvested from each unit. The Board adopted WP02-35 with OSM modification to require either a Federal or State permit and to limit harvest to bulls only other than the fall 22D Kuzitrin hunt and the

winter 22D SW hunt. Adoption of this proposal addressed conservation concerns for the moose population while still providing for the continuation of subsistence uses of moose on Federal public lands in Unit 22. The Board felt closing Federal public lands to all except federally qualified subsistence users, or a subset of them, would improve subsistence harvest opportunities for moose. The Alaska Board of Game (BOG) also adopted new regulations for moose in Unit 22E in 2002, changing the harvest limit from one moose to one antlered bull, shortening the season by three months, and closing the nonresident season.

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

In 2008, the BOG adopted a proposal that established a resident winter season from Jan. 1–Jan. 31 for one antlered bull, as well as a nonresident antler-restricted registration hunt from Sept. 1–14 with a 10-bull harvest quota in Unit 22E. These changes were a result of an increasing moose population as determined by ADF&G.

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

At its February 2011 meeting, the Council voted unanimously to submit a proposal requesting that the closure of Federal public lands to moose harvest, except by federally qualified subsistence users be rescinded in Unit 22E due to the recovery of the population. However, no proposal was submitted during the regulatory cycle.

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

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

In 2016, the Board rejected Proposals WP16-46 and WP16-47, both submitted by the Council. Proposal WP16-46 requested rescinding the moose hunting closure to non-federally qualified users in Unit 22E. While the Unit 22E moose population had increased above State management objectives, the adjacent moose population in Unit 22D had declined. New information suggested the apparent population increase in Unit 22E may have been due to redistribution of moose during low snow years.

Therefore, the Council opposed, and the Board rejected Proposal WP16-46. Proposal WP16-47 requested establishing an antlerless moose season from July 15 ─ Dec. 31 in Unit 22E. The Board rejected Proposal WP16-47 due to conservation concerns as part of the consensus agenda.

In August 2020 the Board approved a revised closure policy, which stipulated all closures will be reviewed every four years. The policy also specified that closures, similar to regulatory proposals, will be presented to the Councils for a recommendation and then to the Board for a final decision. Previously, closure reviews were presented to Councils who then decided whether to maintain the closure or to submit a regulatory proposal to modify or eliminate the closure.

This closure was reviewed by the Council and the Board in 2022 as WCR22-16. Both determined not enough information was available to rescind the closure as updated harvest information was needed, and it was unclear whether the observed population increase was due to increased productivity or to immigration from Unit 22D. Therefore, the Board voted to maintain the closure as part of the consensus agenda.

Also, in 2022 the BOG adopted Proposal 265 as amended. This proposal changed the nonresident RM855 permit for moose in Unit 22E to a nonresident drawing permit (DM855). The BOG amendment to this proposal was to allow up to 25 permits to be available. This hunt was previously managed by harvest quota with an unlimited number of registration permits available. The drawing hunt was adopted to restrict the number of hunters accessing Unit 22E which reduced competition among user groups. The permit was set to be available for Regulatory Year (RY) 23, as the drawing application period for RY22 had already occurred.

Biological Background

Moose migrated onto the Seward Peninsula starting in the 1930s and occupied almost all the suitable habitat by the late 1960s. Even though moose are a relatively recent addition to the Seward Peninsula, once established they rapidly became an important food source for rural subsistence users. Fortunately, populations grew rapidly and expanded through the 1980s. But then, severe winters in the late 1980s and early 1990s caused declines in moose numbers. Densities went from highs of 1.0–1.5 moose/mi^2, to lows of 0.2–0.5 moose/mi^2. Populations in Units 22B and 22D experienced the largest declines and have never recovered to these higher numbers but have stabilized at lower densities (Germain 2023). Brown bear predation on calves is considered the main limiting factor on Unit 22 moose populations (Henslee 2024, pers. comm.).

State management goals for moose in Unit 22 are to protect, maintain, and enhance the moose population and its habitat. The goal of ADF&G is to increase or stabilize the moose population to achieve recovery in Units 22A, 22B, and 22D (Germain 2023). Specific population objectives include:

- Unit 22: 5,000 – 7,000 moose
- Unit 22D: 2,000–2,500 moose
- Unit 22E: 600–800 moose
- Units 22A, 22B, 22D and 22E: post-hunt sex ratio of 30 bulls:100 cows

- Harvest objective: 300–680 moose

In 2024, ADF&G estimated the total Unit 22 moose abundance as 6,700 moose which is within State management objectives (ADF&G 2024a). Between 2003 and 2020, the moose population in Unit 22E ranged from 504–662 moose (Henslee 2024, pers. comm.) (**Figure 1**). The population estimate for Unit 22E increased from 2003–2014, then showed a slight decrease in the 2020 estimate. However, moose move between Unit 22E and the Agiapuk River Drainage in Unit 22D where moose abundance declined in 2015. The apparent population increases in Unit 22E may be due to the redistribution of moose between areas, possibly because of a low snow year (SPRAC 2015). In 2023, ADF&G changed their analysis method for moose estimation due to these movements between subunits (Henslee 2024, pers. comm.). They now estimate moose abundance for Units 22D and 22E combined. This new method resulted in an estimation of 1,922 moose in Units 22D and 22E in 2023, which is well below the combined minimum population objective for Units 22D and 22E of 2,600 moose (**Figure 1**).

Age-sex composition ratios of bulls and calves to cows are used to evaluate harvestable surpluses, trends in abundance and calf recruitment. Calf:cow ratios may also be used as an index to estimate population trajectory, as fall ratios of < 20 calves:100 cows, 20–40 calves:100 cows, and > 40 calves:100 cows may indicate declining, stable, and growing moose populations, respectively (Stout 2012). Calf:cow ratios in all surveyed years are close to expected numbers for a stable population (**Figure 2**). Between 2014 and 2022, bull:cow ratios met or exceeded State management objectives, ranging from 30–41 bulls:100 cows (**Figure 2**) (Henslee 2024, pers. comm.). However, since 2014, the bull:cow ratio has been decreasing, with the lowest ratio occurring in 2022 just meeting State objectives, indicating few surplus bulls available for harvest.

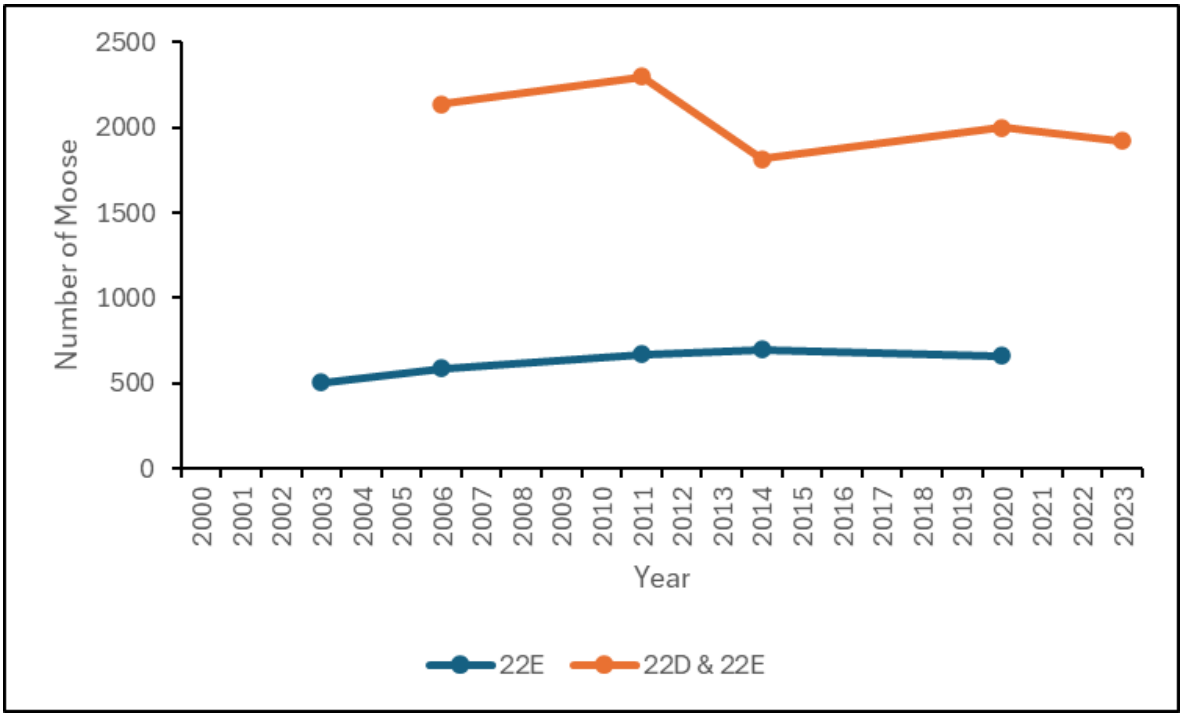

Figure 1. Moose population estimates for Unit 22E and combined Unit 22D and 22E (Henslee 2024, pers. comm.).

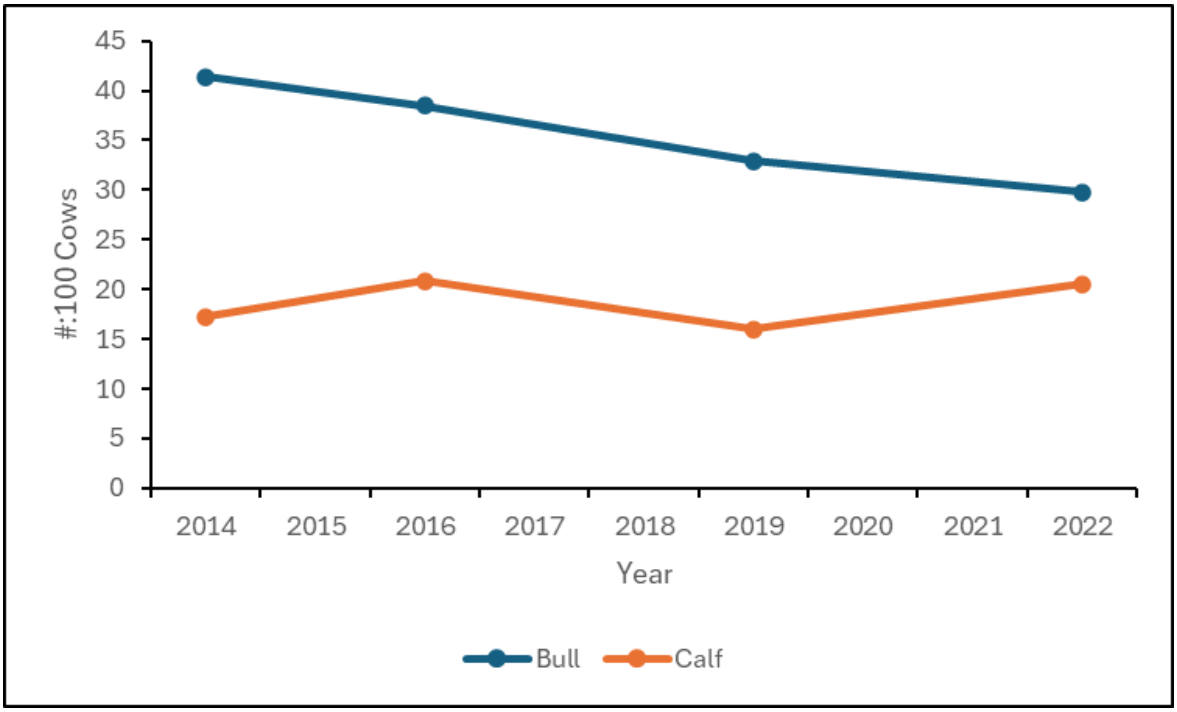

Figure 2. Bull:100 cow and calf:100 cow ratios for Unit 22E moose (Henslee 2024, pers. comm.).

Cultural Knowledge and Traditional Practices

The Inupiaq, Siberian Yupik, and Central Yup'ik people of the Seward Peninsula area have a deeply rooted practice of subsistence hunting, fishing, and gathering of wild resources (Raymond-Yakobian and Zdor 2020). Until European contact in the early 19th century, many of these groups were semi-nomadic, moving with the seasons, based on the availability of wild resources. During the winter months, people often lived in permanent villages along the coast where they harvested seals, belugas, other marine mammals, fish, and small land mammals. During warmer months they established family fish camps near rivers and lakes to harvest fish and plant resources (Ray 1984).

Ethnographic evidence indicates people living in the Seward Peninsula region harvested caribou prior to European contact (Finstad et al. 2007, Ray 1975). While caribou were hunted traditionally, the introduction of firearms, increased reliance on permanent settlements, and influx of nonresident whalers increased hunting pressure throughout the 1800s (Finstad et al. 2007). Increased hunting pressure and caribou migration patterns led to significant declines in caribou populations by the mid-1800s (Braem et al. 2017, Finstad et al. 2007, Dau 2000). Reindeer were introduced from Siberia in 1892 under a Federal program to provide more meat for the Inupiat people in the area, although management of this program did not equitably grant access and ownership of reindeer herds to Inupiat residents (Finstad et al. 2007; Dau 2000).Caribou migrated back into the area in the 1990s, causing the reindeer industry to decline as reindeer integrated with migratory caribou groups and left the region (Finstad et al. 2007).

Historically, people in the Seward Peninsula area hunted a variety of species opportunistically. Following major fires in the region, moose began migrating to the area in the mid-1900s, and harvest of this species grew as their population increased (SPRAC 2019a, 2019b, Braem et al. 2017, Soboelman 1985). In addition to harvest by hunters, local knowledge shared at Council meetings indicates that predation by wolves and brown bears is increasingly impacting the Unit 22 moose population in recent years (SPRAC 2020, SPRAC 2019a, 2019b).

This analysis considers a closure in Unit 22E. Currently, only residents of Unit 22 are considered FQSUs and may harvest moose in this subunit. Unit 22 communities include Brevig Mission, Diomede, Elim, Gambell, Golovin, Koyuk, Nome, Port Clarence, Saint Michael, Savoonga, Shaktoolik, Shishmaref, Stebbins, Teller, Unalakleet, Wales, and White Mountain. As of 2023, a total of 9,412 people resided in these communities. An additional 216 people resided in other areas of the Nome Census Area (ADLWD 2023), which covers approximately the same geographic extent as Unit 22. Nome is the main population center in the region, with 3,506 residents. The communities of Shishmaref (population: 579 people) and Wales (population: 112 people) are the only populated communities in Unit 22E (ADLWD 2023). Neither community is connected to other communities by road. However, a winter trail does connect Wales, Brevig Mission, and Shishmaref (Mikow et al. 2020).

Subsistence household surveys conducted by ADF&G provide insight on the local importance and use of moose. Based on moose search and harvest areas mapped in household subsistence surveys,

residents of Shishmaref and Wales harvest nearly all of their moose in Unit 22E, and FQSUs from other surveyed communities do not typically hunt for or harvest moose in Unit 22E (Gonzalez et al. 2020, Mikow et al. 2020, 2018, 2014, Braem et al. 2017, Braem 2012, OSM 2004). Although there are no subsistence surveys from the larger community of Nome, ethnographic data suggests that residents of Nome typically harvest moose in Units 22B and 22C (Braem et al. 2017).

Moose hunting areas in Unit 22E used by residents of Wales include areas north of the community near Lopp Lagoon, areas southeast of the community that encompass the Ocean Creek drainage, and areas east of the community that include lowlands along the southern edge of Lopp Lagoon as far east as the mouth of Mint River (Mikow et al. 2020). Residents of Shishmaref hunt moose primarily in the areas southeast of the community near the Serpentine River, and areas east of the community near Cowpack River and Cape Espbenberg (Gonzalez et al. 2020).

Based on household survey data, an average of 44% of households in Shishmaref and an average of 57% of households in Wales use moose (**Table 1**) Available data indicates the estimated number of moose harvested per year has declined over time (**Table 1**). Although moose harvest has decreased over time, moose remain an important resource that is used throughout both communities (**Table 1**).

Survey data indicates that most moose hunting by Unit 22 residents occurs in September and October, before moose are in rut, when access by roads and rivers is best (SPRAC 2019a, Mikow et al. 2018, Persons 2000). Most local users in Unit 22 will typically only hunt moose in winter if they do not successfully harvest in the fall (SPRAC 2019a). However, in Unit 22E, there are no roads that facilitate access to moose habitat and access via rivers is limited (Braem et al. 2017). While in some years moose are primarily harvested in fall (e.g., Braem et al. 2017), people also rely heavily on hunting opportunities in January, February, and March. During winter, hunting areas that are inaccessible in Fall become accessible by snow machine, and during later winter increased light makes hunting easier than during darker months (Gonzalez et al. 2020, Mikow et al. 2020, Braem and Kostick 2014, Persons 2000).

Declines in moose harvest may be due to increased use of caribou instead of moose, declines in moose populations, and/or because winter moose hunts were not permitted during some years (Gonzalez et al. 2020, Braem 2012). These trends may also be influenced by climate change, which is increasingly impacting moose hunting. In Shishmaref, later freeze up is associated with fewer moose available in fall, and in some years, insufficient snow in October and November to travel by snowmachine (SPRAC 2019a, Braem et al. 2017). Simultaneously, rain in winter and melting snowpack makes travel for winter hunting more dangerous (SPRAC 2020, Braem et al. 2017). The changing climate has meant that weather patterns are highly variable from year to year, requiring subsistence users to remain flexible in response to unpredictable hunting conditions (SPRAC 2019a). A Council member from Brevig Mission recently described these dynamics, stating that subsistence users “have to be pretty much—we have to adapt to what is before us and then, you know, try to live within the means of what is being regulated” (SPRAC 2019a: 61).

In addition to challenges posed by climate change, Council members have reported notable concern about nonlocal harvest of moose in Unit 22E and 22D, particularly in light of declining harvests by local users. Nonlocal hunters, facilitated by hunting guides, often use planes to access hunting areas that cannot typically be accessed by subsistence hunters (SPRAC 2019a, 2019b). One resident in Unit 22 highlighted the discrepancy between guided hunters and subsistence users, stating that nonlocal hunting pressure may be negatively impacting the Unit 22D / 22E moose population:

> ...I sat there daily, all the way from early daytime to nighttime, before the sun was going down, and then I watched SuperCubs flying around, zipping around finding moose over there for their hunters and I'm sitting there in a boat in a river and I don't even have a shot at it until I see where I might find one the next day, on the last day [of the season]. So, you know, it's really a heartburn to me to see that all this money can drive people in Teller and Brevig out of a moose hunt because it's necessary to give a guide opportunity to take moose out in an area that's pretty grim at this point... (SPRAC 2019b: 37)

As of 2023, State regulations were modified to reduce the number of nonresidents hunting moose in Unit 22E, which may have diminished these concerns (see Regulatory History).

Table 1. Estimated harvest and use of moose by residents of Shishmaref and Wales (ADF&G 2024b).

Community	Survey year	Estimated number of moose harvested	Estimated pounds of moose harvested per person	% surveyed households using moose
Shishmaref	1989	39	45	76%
	1995	68	65	82%
	2000	46	44	77%
	2009	33	31.5	35%
	2014	18	15.6	49%
	2017	15	15.5	44%
Average	--	**36.5**	**36.1**	**61%**
Wales	1993	6	22.1	41%
	2000	14	51.6	61%
	2010	5	17.2	61%
	2017	2	5.6	65%
Average	--	**6.8**	**24.1**	**57%**

Harvest History

Resident harvest in Unit 22E is likely underreported because only general harvest tickets are required, which have no reporting requirement like a registration permit. Data from household subsistence surveys indicates that harvest is typically higher than reported, so total harvest estimates are made to account for assumed unreported harvest (SPRAC 2019a). In 2021, reported harvest and estimates of unreported harvest from household subsistence surveys estimated total harvest to be approximately 8% of the total Unit 22E population (Dunker 2021, pers. comm.). In 2017, ADF&G estimated a 6–8% harvest rate for moose in Unit 22E, while the estimated sustainable harvest rate is only 4–6% of the population (ADFG 2017). A State drawing permit (DM855) is required for non-residents, which results in accurate harvest numbers for nonresidents. All harvest under State regulations has occurred on non-Federal lands since 2002 due to the Federal lands closure.

Reported moose harvest has been relatively low in Unit 22E, averaging 17 moose annually and ranging from 6–30 moose/year between 2000 and 2023 (**Figure 3**). But total reported moose harvest has increased considerably from 2013–2023, with a range of 16–30 and an average of 23 moose per year. Local residents (federally qualified subsistence users), defined as those with a customary and traditional use determination, accounted for 78% of the reported harvest between 2000 and 2012. However, from 2013–2023 they accounted for only 42% of the total reported harvest. Although it is unknown how many of these harvests occurred on Federal vs. non-Federal lands. While local and nonlocal state resident harvest has remained constant at low levels, annual nonresident harvest has increased substantially since 2008, when the State reopened a nonresident season. Nonresident harvest has accounted for between 15%–63% of the Unit 22E moose harvest and has averaged 41% of total harvest since 2013 (**Figure 3**). But, since 2020, nonresident harvest has decreased, due to State Emergency Orders closing seasons early and the start of the drawing permit DM855 in 2023.

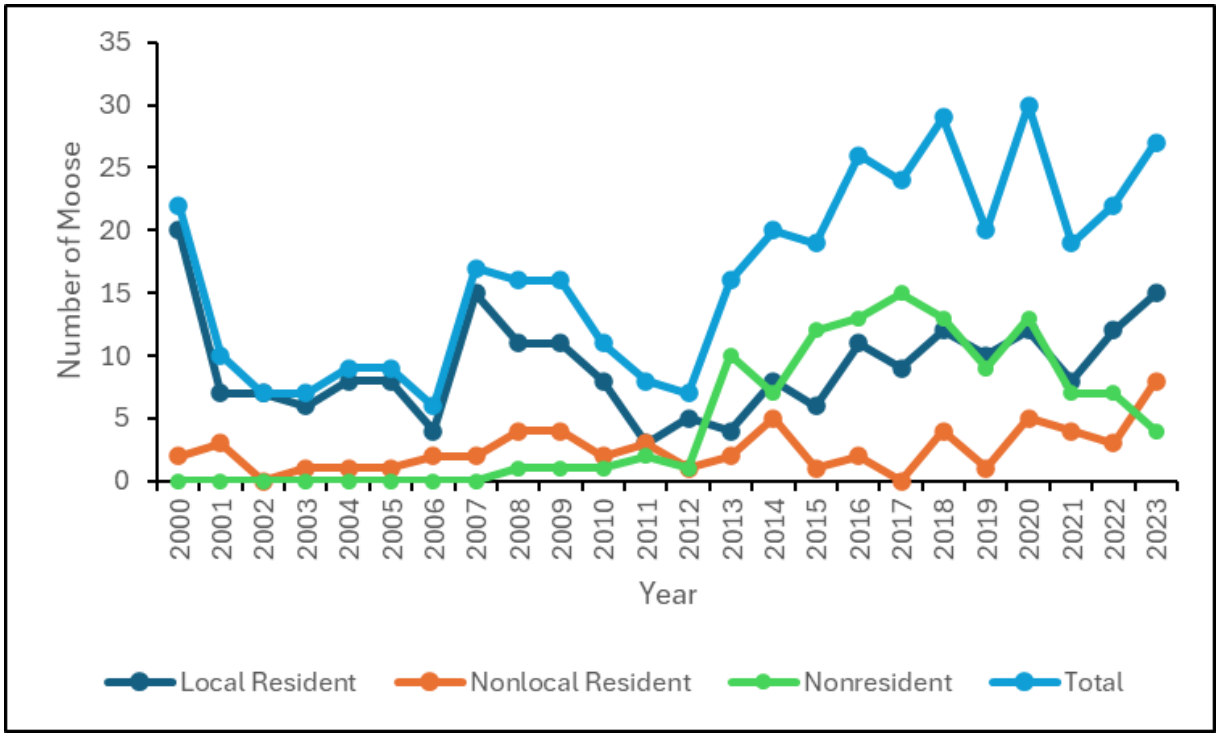

Figure 3. Reported moose harvest by user group in Unit 22E (Henslee 2024 pers. comm.).

Alternative(s) Considered

One alternative considered was to require a Federal registration permit for the Unit 22E moose hunt to obtain more accurate harvest data. This alternative is outside the scope of a closure review, although the Council may consider submitting a proposal to effect this change during the next call for wildlife proposals in early 2025. A similar proposal could be submitted to the BOG to request a State registration permit be required to hunt moose in Unit 22E under State regulations.

Effects

If this closure is rescinded, all users could hunt moose on Federal public lands in Unit 22E. This could increase total moose harvest within the subunit, especially from nonresident harvest, which has substantially increased since 2012, although ADF&G may adjust the number of permits available each year. Unit 22E is one of four subunits on the Seward Peninsula that requires only a harvest ticket (with no harvest quota) and no registration permit (managed by harvest quotas that are met or exceeded each year), which also limits harvest reporting. If the closure is rescinded, increased hunting pressure from State residents may cause user conflicts and increase harvest to unsustainable levels. Harvest estimates from 2017 and 2021 indicate harvest exceeded sustainable rates. Declining bull:cow ratios indicate few surplus bulls are available for harvest.

OSM PRELIMINARY CONCLUSION

☒ **Retain the Status Quo**
☐ **Rescind the Closure**
☐ **Modify the Closure to**
☐ **Defer Decision on the Closure or Take No Action**

Justification

The Unit 22E moose population has been above the minimum State management objective since 2011. However, in the same timeframe there has been a decline in the moose population in Unit 22D and the combined Unit 22D and 22E population estimate has trended downward since 2006. This combined 22D and 22E population estimate is well below the combined subunit population objective. More investigation into the cause of this is needed before decisions affecting harvest can be made. Additionally, the bull:cow ratio has consistently declined since 2014, and the most recent survey in 2022 yielded ratios just meeting State objectives. This decline in bulls indicates there are fewer available for harvest. If the closure is rescinded, hunting pressure from non-federally qualified users may cause user conflicts, increase harvest to unsustainable levels, and reduce subsistence opportunity for federally qualified subsistence users. Retaining the status quo balances providing subsistence opportunity with conserving the moose population, which cannot withstand any increases in harvest.

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