

# **GAME MANAGEMENT UNITS 25A, 25B, 25D, 26B and 26C**

## **NORTHEAST ALASKA AREA OFFICE**

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### ***DESCRIPTION***

The Northeast Alaska area includes the drainages of the Upper Yukon basin in Game Management Units 25A, 25B, and 25D upstream from Fort Hamlin (upstream from the Dalton Highway Bridge on the Yukon River) and the eastern North Slope (Units 26B and 26C) from the Itkillik River drainage to the Canadian Border. The area encompasses 73,800 mi<sup>2</sup>, including more than 26,000 mi<sup>2</sup> of arctic, alpine and subalpine tundra in the eastern Brooks Range and on the north slope, and over 40,000 mi<sup>2</sup> of boreal forest in Game Management Unit 25. The Upper Yukon basin is subject to frequent lightning-caused fires. Abundant successional and riparian shrub habitat and low snowfall provide excellent habitat for moose. The Yukon Flats includes numerous lakes and meadows and is a major waterfowl nesting area. Road access is limited to the Dalton and Steese Highways. The area includes the Arctic and Yukon Flats National Wildlife Refuges, small portions of the Gates of the Arctic and Yukon–Charley National Preserves, as well as large areas managed by the Bureau of Land Management, the State, and additional areas owned by Native corporations.

Game Management Units and areas are:

25A	—	21,300 mi <sup>2</sup>
25B	—	9,100 mi <sup>2</sup>
25D	—	17,600 mi <sup>2</sup>
26B	—	15,500 mi <sup>2</sup>
26C	—	10,300 mi <sup>2</sup>
Total Area		73,800 mi <sup>2</sup>

There are 9 communities (Arctic Village, Beaver, Birch Creek, Chalkyitsik, Circle, Fort Yukon, Kaktovik, Stevens Village, and Venetie) with a total population of about 1,700. In addition, the Prudhoe Bay complex is located in northern Unit 26B.

Advisory committees in the area include:

- Yukon Flats Fish and Game Advisory Committee
- North Slope Fish and Game Advisory Committee
- Eastern Interior Alaska Subsistence Regional Advisory Council

Conservation system units are:

- Yukon Flats National Wildlife Refuge, U.S. Fish and Wildlife Service (USFWS)
- Arctic National Wildlife Refuge, National Park Service (NPS)
- Yukon–Charley Rivers National Preserve, NPS
- Gates of the Arctic National Preserve, NPS

Controlled use/management areas include:

- Dalton Highway Corridor Management Area

The Dalton Highway Corridor Management Area (DHCMA) includes land 5 miles east and west of the Dalton Highway from the Yukon River north to the Arctic Ocean, with a total area of about 3,600 mi<sup>2</sup>. The DHCMA was established in 1980 and some amendments were made in 1985 and 2002. The area was established based on a perceived need, primarily on the part of communities in Unit 26, to limit access by hunters. Alaska Statute 16.05.789 prohibits hunting with firearms within the corridor; however, regulation allows big game, small game, and fur animals to be hunted in the area by bow and arrow only. No motorized vehicle, except aircraft, boats, and licensed highway vehicles on publicly maintained roads, may be used to transport game or hunters within the DHCMA. Alaska Statute 19.40.210 prohibits the use of off-road vehicles within 5 miles of the highway right-of-way in this area. The DHCMA is achieving its original purpose.

- Prudhoe Bay Closed Area

The Prudhoe Bay Closed Area encompasses the Prudhoe Bay industrial complex, and extends west to include the Kuparuk River area, with a total area of 432 mi<sup>2</sup>. It was established prior to the DHCMA and was based on public safety and security issues associated with the extensive oil field facilities in the area. The area is closed to the taking of big game. In 2002 the Board of Game extended the restrictions on the use of motorized vehicles for hunting in the DHCMA to apply to the Prudhoe Bay Closed Area. This is consistent with statutory intent, and closed a loophole in the regulation. The public generally accepts the restrictions, although difficulty in locating the southern boundary has caused some confusion. The closed area appears to have achieved its purpose.

## ***BLACK BEAR***

**STATUS:** Black bears are common in Units 25D, 25B, and the southern portion of Unit 25A. Black bears are rare in the northern portion of Unit 25A and do not inhabit Units 26B and 26C. Population estimates are largely unknown except for an abundance survey the Department conducted in 2010 in a 530 mi<sup>2</sup> area in Unit 25D. We estimated 225 independent black bears in the study area. The relative precision at the 95% confidence level was 21.4%, resulting in a confidence interval of 186–283 independent black bears. This abundance estimate converts to a density estimate of 425 black bears per 1000 mi<sup>2</sup>, which documents the highest known density of black bears in Interior Alaska.

**MANAGEMENT ACTIVITIES:** Sealing of black bears is not required in these units. However, local harvest was estimated from subsistence household surveys in 2008 and 2009. In 2009, CATG estimated 48 black bears were harvested. Additional harvest by non-local residents and non-residents is estimated at 20-40 black bears annually. Current harvest rates are low and well below sustained yield.

**ISSUES:** Predation by black bears on moose calves has been a long term concern by local residents of Unit 25D. Liberalization of seasons, bag limits, and method of take has occurred within the Unit to provide additional opportunity to harvest black bears. Current season and bag limits for black bears in Unit 25D are more liberal than most interior Units. In addition to a no closed season and a 3 bear annual bag limit, any bear may be harvested including cubs or sows accompanied by cubs. Both a spring and fall baiting season occurs and the use of artificial light associated with customary and traditional activities at den sites is allowed.

### ***GRIZZLY BEAR***

**STATUS:** An estimated 1,500–2,100 grizzly bears occur in the area, with populations north and south of the Brooks Range estimated at 500–900 and approximately 1,200 bears, respectively. In most years, the harvest of bears is below current estimates of sustainable yield in Units 25A, B, D and 26C. Since the mid 1990s, bear populations probably have remained stable because habitat has changed little and harvest was conservative. Grizzly bears are considered to be at medium density relative to interior grizzly bear populations.

**MANAGEMENT ACTIVITIES:** Harvest is monitored via sealing in Units 25A, 25B, 25D, and 26C. Harvest is monitored via registration and drawing permits in Unit 26B. Sealing, tooth aging, and compiling and analyzing harvest data are the primary management activities in all units. In Unit 25D, an objective to temporarily reduce the number of bears was established with the implementation of the Yukon Flats Moose Management Plan in 2002. This resulted in liberalizing grizzly bear seasons and bag limits and eliminating the grizzly tag fee requirement.

During the January 2012 statewide Board of Game meeting, the board authorized a Muskox Recovery program in Unit 26B that authorizes Department personnel to lethally remove up to 20 brown bears annually that are threatening or killing muskoxen. The program began in April 2012 and is authorized through June 2018. The department received funding in RY12 and RY13. In years no funding was available, bears were removed that were threatening or killing muskoxen when ADF&G was conducting other field work. A total of 7 bears were lethally removed by the department.

**ISSUES:** Typically, management issues relate to season length and bag limits in Units 26B, 26C, and 25A and determining a sustainable harvest rate for each area. The 3-year mean annual human-caused brown bear in Unit 26B has approached sustained yield in recent years.

Beginning RY12, harvest objectives were changed in subunits 25A, 25B, 26B and 26C to manage for a 3-year mean annual human-caused brown bear mortality of  $\leq 8\%$  of the bears  $\geq 2$  years old of which no more than 40% in each subunit can be females. In Unit 26B, the bears lethally removed by the department are included in this mortality estimate. Prior to RY12, we managed for a 3-year mean annual human-caused brown bear mortality of  $\leq 5\%$  of the current estimated brown bear population in each subunit with at least 60% males. In Unit 25D, the objective has remained the same to manage for a temporary reduction in brown bear numbers and predation on moose.

Current issues involve reducing brown bear predation on muskoxen in Unit 26B and moose in Unit 25D. In Unit 26B, regulations were liberalized for 2 years in RY10 and RY11 and a Muskox Recovery program was implemented in 2012 in an attempt to achieve this objective. Data are inconclusive whether this was effective in reducing bear predation on muskoxen. In Unit 25D, regulations were liberalized beginning in 2002 and have had little effect on bear harvest levels.

Brown bears in Unit 26B are important to both the hunting and viewing public. Most of the brown bears harvested in Unit 26B are taken while hunting caribou during the fall season. Brown bears along the Dalton Highway provide viewing opportunities, particularly in June during mating season.

## ***CARIBOU***

### ***CENTRAL ARCTIC HERD (CAH)***

**STATUS:** In 2016, we estimated the CAH population at 22,630 caribou, indicating a substantial decline had occurred since 2013 (50,000 caribou) and 2010 (70,000 caribou). The population decreased at an annual rate of 17% since the 2010 photocensus. The population is now below the management objective of 28,000–32,000 caribou.

The CAH traditionally calved near the coast between the Colville and Kuparuk Rivers on the west side of the Sagavanirktok River and between the Sagavanirktok and the Canning Rivers on the east side. During the early 1990s, the greatest concentration of caribou calving in western Unit 26B shifted southwest as development of infrastructure related to oil production occurred in what was originally a major calving area. No directional shift in distribution of caribou calving east of the Sagavanirktok River was noted. During the 2000s, distribution of calving and postcalving caribou was similar among years. The CAH summer range extends from just west of the Colville River, eastward along the coast (and inland approximately 30 miles) to the Katakturuk River. The CAH winters in the northern and southern foothills and mountains of the Brooks Range. The herd's range often overlaps with the Porcupine caribou herd (PCH) on summer and winter range on the east side and the Teshekpuk (TCH) herd on summer and winter range on the west side and occasionally with the Western Arctic (WAH) in fall and winter to the west.

Since the early 1990s, harvest was well below sustained yield when applying a conservative 5% harvest rate. However, because the 2016 population estimate is below the management objective of 28,000–32,000 caribou, the department is recommending a reduction in harvest by applying a 3% harvest rate, of which no more than 75 can be cows. This results in an allowable harvest of 680 caribou. The previous 3-year mean of harvest was 930 caribou. Reducing the overall harvest; particularly the number of cows harvested, may result in some herd growth.

**MANAGEMENT ACTIVITIES:** Parturition rates and calf:cow ratios are determined in early and late June by monitoring radiocollared cows. A photocensus is attempted every 2–3 years to estimate population size. Fall composition surveys will be conducted annually for the next 2 years and then biennially. Approximately 20–30 new radio collars are deployed annually on female caribou to maintain 60–80 active radio collars to assist in estimating parturition rates, calf:cow ratios, seasonal distribution, and conducting photocensuses and fall composition surveys. In addition, 5–10 radiocollared bulls are maintained to assist in photocensuses and composition surveys. CAH caribou harvest and hunter effort are monitored based on harvest ticket reports.

A photocensus will be conducted in 2017 (per favorable conditions) to confirm there was a decline in the population.

**ISSUES:** The CAH has declined substantially and harvest needs to be reduced by approximately 250 caribou.

Other issues include increased mixing with the Porcupine and Teshekpuk caribou herds during censuses and fall composition surveys. Herds are identified according to where they calve. Distribution of caribou varies throughout the year and when overlap occurs during these important survey periods, the department is unable to collect the data to determine trends in population size and bull and calf: cow ratios.

Although access is restricted along the Dalton Highway (AS 16.05.789 prohibits hunting with firearms and AS 19.40.210 prohibits off-road vehicle use within 5 miles of the Dalton Highway), a large number of hunters use the highway in August and early September and some controversial issues affecting caribou hunting in Unit 26B have occurred, particularly during the previous 10 years. The increase in the number of archers and other hunters using the Dalton Highway prompted several public proposals in previous years related to hunt quality and other conditions of the hunt. Some of the issues are wanton waste, poor hunter ethics, stalking caribou that are already being hunted, and traffic concerns with commercial industry. These issues are present in any hunt that occurs along a road; although the conflicts with commercial trucking are likely more common along the Dalton Highway because it was not built to accommodate other kinds of traffic. In addition to concerns directly along the highway, there has also been an increase in the number of hunters using boats to access areas off the highway, particularly the Ivishak River. Some hunters have expressed frustration related to hunting ethics (e.g. transporters going up and down the river dropping off hunters near other camps), similar to those observed along the highway.

***PORCUPINE HERD (PCH)***

**STATUS:** The most recent photocensus conducted in 2013 resulted in a population estimate of 197,000 caribou indicating the herd had increased since 2010 when the population estimate was 169,000 caribou. We attempted to complete a photocensus in 2016, but overcast, high clouds prevented a successful survey. There appeared to be many caribou and based on other demographic data collected (e.g., parturition surveys, early calf survival, and adult survival), we determine the population to be stable, or slightly increasing.

The PCH migrates between Alaska and Yukon and Northwest Territories in Canada. In the 1980s and 1990s, most of the PCH calved along the coast in the Arctic National Wildlife Refuge, Alaska, often in the 1002 area. During 2000–2013, the PCH primarily calved farther east, between the Kongakut River in Alaska and the Babbage River, Yukon, in Ivvavik National Park. Caribou that calve in Canada move into Alaska shortly after calving. Beginning in 2014, the PCH calved primarily in Alaska. Post-calving distribution also changed in recent years in that the herd often does not remain on the coastal plain in large aggregations, but moves south into the mountains in the Brooks Range, including south of the Continental Divide. This distribution has made it extremely difficult to complete photocensuses because caribou are more scattered, in smaller groups, and in steep terrain. Winter distribution varies annually and in some years a portion or most of the PCH winters in Alaska between the Middle Fork Chandalar River and the border, while in other years most of the herd winters in Canada.

The PCH is lightly hunted in Alaska and harvest in Alaska is of minimal management concern. Between 50 and 125 caribou are reported harvested annually by nonlocal residents of Alaska and nonresidents. We estimate that 400–700 caribou are harvested annually by Arctic Village and other Yukon Flats residents during years that a large proportion of the herd winters in Alaska. Historical harvest levels in Canada are largely unknown. However, harvest surveys conducted in 2010 and 2011 resulted in harvest estimates that ranged from 1,750–1,850 caribou, consisting mostly of bulls.

The PCH is internationally co-managed through an agreement with the U.S. and Canada and the establishment of the International Porcupine Caribou Board. The purpose of the agreement and role of the board is to promote international coordination and co-management of the PCH and its range. However, regulatory jurisdiction is segregated between countries.

**MANAGEMENT ACTIVITIES:** Parturition rates and calf:cow ratios are estimated in early and late June by monitoring radiocollared cows. A photocensus is attempted every 2–3 years to estimate population size. Fall composition surveys are conducted occasionally when funding is available. Approximately 20–30 new radio collars are deployed annually on female caribou to maintain 100–110 active radio collars to assist in estimating parturition rates, calf:cow ratios, seasonal distribution, and conducting photocensuses. In addition, 10–20 radiocollared bulls are maintained to assist in

photocensuses and composition surveys. PCH caribou harvest and hunter effort are monitored based on harvest ticket reports for nonresidents and Alaska residents living outside the units of the Porcupine caribou herd range. A model is applied to estimate harvest for residents living within these game management units.

**ISSUES:** The most recent issues that may affect PCH management include the potential listing of barren-ground caribou as threatened in Canada and renewed interest in the 1002 area in Alaska for oil exploration. Both issues will likely result in a demand for more information on the PCH, particularly movement data and calving success.

Obtaining frequent photocensuses of the herd has been the primary management concern in Alaska. Poor herd aggregations and poor light conditions resulted in nearly a decade long period (2001–2009) when the size of the herd was unknown. The department has purchased a digital camera system which will significantly increase our chances of a successful photocensus. Other issues not related to poor aggregation or weather include increased mixing with the Central Arctic caribou herd during censuses and with the Central Arctic and Fortymile caribou herds during fall composition surveys. This mixing makes it challenging to obtain adequate data to determine trends in population size and bull:cow and calf:cow ratios.

Regulating harvest and obtaining accurate harvest rates in Canada has been the primary management concern for wildlife management agencies in Canada. A decline in herd size during 1989–2001, followed by an absence of a population estimate derived from photocensuses during 2002–2009, prompted the development and implementation of a Harvest Management Plan (HMP) by the Porcupine Caribou Management Board (of Canada). The plan allows for unrestricted harvest when the PCH is  $\geq 115,000$ , institutes a voluntary bull-only harvest if herd size is 80,000–115,000, institutes a mandatory bull only harvest with annual limits if herd size is 45,000–80,000, and prohibits harvest (except for ceremonial purposes) if herd size is  $\leq 45,000$ . The plan also requires harvest reporting, regardless of herd size or harvest regime. The HMP was implemented in RY10.

## ***FURBEARERS***

**STATUS:** Furbearers are common and distributed throughout Units 25A, 25B, and 25D. Furbearers are most abundant in the Yukon Flats in Unit 25D especially when lynx are at the apex of their population cycle. Currently, lynx are near the low of their population cycle. Species of most importance for local trappers include lynx, marten, fox and beaver. Observations by trappers, pilots, and Department staff indicate that the muskrat population in Unit 25D is increasing. Populations were low during the previous 10 to 15 years.

In Units 26B and 26C, arctic fox, red fox, wolf and wolverine are the most common furbearers. Fox and wolf populations fluctuate to a great extent, often as a result of rabies outbreaks.

**MANAGEMENT ACTIVITIES:** Sealing records, fur export reports, direct communication with trappers, and the results of a trapper questionnaire are used to monitor population and harvest levels of furbearers.

**ISSUES:** Trapping has been historically important in the culture and to the economy of the Yukon Flats, but trapping activity is presently low due to declining fur prices (except for marten) and other social and economic changes.

## ***MOOSE***

### ***UNITS 25A, 25B, AND 25D***

**STATUS:** Moose in Unit 25A are at a low density ( $\leq 0.25$  moose/mi<sup>2</sup>) because much of Unit 25A consists of less suitable habitat including mountainous terrain and tundra of the Brooks Range. Most moose in Unit 25A are distributed in the lowlands and riparian habitats of major Brooks Range drainages. Annually, 100–120 hunters harvest 30–50 moose in Unit 25A. The number of hunters and harvest has been stable.

Moose in Units 25B and 25D are distributed throughout the area and are an important resource for local communities. However, population density is low compared to other areas in Interior Alaska, ranging from 0.20 moose/mi<sup>2</sup> to 0.45 moose/mi<sup>2</sup>. There is widespread concern about the low density of moose in Units 25B and 25D, which includes substantial areas with excellent moose habitat. Limiting factors include predation by black bears, grizzly bears and wolves. Predation by black bears and grizzly bears are the major source of calf moose mortality during summer, accounting for over 80% of the calves born according to a 2-year study conducted by the USFWS in western Unit 25D.

In Unit 25B, 75–100 hunters reported harvesting 30–40 moose annually. In eastern Unit 25D, 60–100 hunters reported harvesting 15–35 moose annually. In addition, 10–30 moose are reported taken annually in western Unit 25D under Tier II and federal subsistence permits. However, a large proportion of the harvest by local residents is not reported. A harvest monitoring project conducted by the Council of Athabascan Tribal Governments (CATG) and Division of Subsistence indicates that local residents harvest 100–150 moose annually in 25D and 25B.

**MANAGEMENT ACTIVITIES:** Population and composition surveys in Unit 25D are conducted regularly in cooperation with the Council of Athabascan Tribal Governments (CATG) Natural Resources Department and Yukon Flats National Wildlife Refuge. A major management effort took place in 2001 and 2002 in which the Yukon Flats Cooperative Moose Management Plan was developed and implemented. This effort focused on community and agency initiatives that together could maintain or increase moose abundance, especially in key hunting areas near local communities. We continue to work from the 2002 Yukon Flats Cooperative Moose Management Plan.

Periodically, large trend count area surveys are conducted in the eastern portion of Unit 25A.

In Unit 25A, 25B and 25D, harvest and hunter effort are monitored based on harvest ticket reports for and nonresidents and Alaska residents living outside of the game management units. Harvest is occasionally estimated by CATG and Division of Subsistence for Alaska residents living within the game management units.

**ISSUES:** Chronically low moose numbers in Unit 25D continue to be a major concern. Both local and nonlocal users are concerned about predation by wolves and bears and the illegal harvest of cow moose. Although the number of nonlocal moose hunters in Unit 25D is small ( $\leq 30$ ), their presence is sufficient to cause concern among local residents. Obtaining accurate harvest data from Alaska residents living within 25A, 25B, & 25D is a challenging issue.

Approximately 65% of Unit 25D is on federal land and the remainder is state and private owned lands. Identifying state, federal, and private lands and determining the appropriate regulation is often confusing and difficult for hunters in the field. Staff from ADF&G and Yukon Flats National Wildlife Refuge continue to work with the local advisory committees to align state and federal seasons when feasible.

#### ***UNITS 26B AND 26C***

**STATUS:** The moose population in Units 26B and 26C declined dramatically during the early 1990s, probably due to a combination of factors including disease, weather, predation by wolves and grizzly bears, and possibly insect harassment. In Unit 26B, the population gradually increased during the 2000s, and peaked at 550–650 moose during 2006–2009. By April 2014, the moose population had declined dramatically again with only 109 moose and no 11 month old calves observed. This decline was mostly the result of a late spring in 2013; although fewer moose were observed during 2010–2013 compared to the middle 2000s. The most recent surveys indicated the population was slowly recovering with 138 moose observed in April 2016 (28 of the 138 moose were 11-month-old calves). During 1996–2005, moose hunting seasons in Unit 26B were closed. Seasons were re-opened in RY06, because the population had recovered. The seasons were closed again in RY14 following the severe population decline that occurred in late spring 2013. Seasons remain closed.

Moose numbers in central Unit 26C remained stable at approximately 50–60 moose during the 2000–2013. Only 23 moose were observed in spring 2014; however, by 2016, 46 moose were observed. Moose numbers in central 26C never recovered to previous densities following the decline in the early 1990s. Moose were surveyed in southeastern Unit 26C in the upper Kongakut and Firth–Mancha drainages. In fall 2011, 339 moose were observed. The population estimate in all of Unit 26C is approximately 400 moose, recognizing that the eastern portion has a migratory component to its population. Moose seasons in Unit 26C have been closed since 1996.

**MANAGEMENT ACTIVITIES:** Spring surveys are conducted annually to estimate population size and percent 11-month-old calves in the Unit 26B population. Surveys in eastern Unit 26C are conducted periodically.

**ISSUES:** Moose on the North Slope represent the northern limit of moose range in North America, and habitat limits the potential size of moose populations. Moose in Unit 26B and 26C are likely more vulnerable to changes in environmental conditions and predation rates. The most challenging issue is to predict when these declines may occur and be able to maximize hunting opportunity.

The state season in Unit 26C remains closed, but a federal season is open and managed by Arctic National Wildlife Refuge using the central Unit 26C moose population for residents of Kaktovik. In the southeastern portion of Unit 26C, the Board of Game created a drawing hunt in the upper Kongakut and Firth/Mancha drainages during the March 2012 Board of Game meeting because the fall 2011 surveys in the area indicated there was harvestable surplus. However, this hunt area lies within the Arctic National Wildlife Refuge and was still closed to non-federally qualified users at that time the board met in 2012. Since then, the department submitted a proposal to the Federal Subsistence Board to remove the closure; but the Federal Subsistence Board did not pass the proposal and the area remains closed to non-federally qualified users.

## ***MUSKOXEN***

**STATUS:** During the mid 1990s, approximately 500–600 muskoxen inhabited northeastern Alaska (eastern Unit 26A, Unit 26B, and Unit 26C). In 1999, muskoxen numbers began to decline in Unit 26C. By 2001, we determined that the overall population size in northeast Alaska declined considerably, but the population dynamics were different in each unit such that during 2002–2006, few muskoxen were present in Unit 26C and by 2004 muskox numbers in eastern Unit 26A and Unit 26B had declined to approximately 200 animals. Numbers remained relatively stable during 2007–2015, at just under 200 muskoxen. In 2106, we observed 228 muskoxen which was the first time since 2006 that we observed more than 200 muskoxen. Groups of muskoxen migrate back and forth across the border between Canada and Unit 26C. Therefore, in some years, 30–40 muskoxen may reside in Unit 26C.

Beginning in regulatory year 2006–2007, permits to hunt muskoxen were not issued in eastern Unit 26A and Unit 26B. All hunts remain in regulation and permits include a Tier II hunt in eastern Unit 26A and Unit 26B west of the Dalton Highway, and a Tier I registration and a drawing hunt in Unit 26B east of the Dalton Highway. Hunting in Unit 26C is managed by the Arctic National Wildlife Refuge.

During 2007–2011, we conducted a research project to look at potential causes of muskoxen mortality, including nutrition, disease, predation, and re-distribution. Results indicated that the primary source of mortality on both adults and calves was brown bear predation.

**MANAGEMENT ACTIVITIES:** Activities include conducting annual composition and population estimate surveys in April, deploying radio collars, radiotracking, and administering permit hunts when hunts are open. The structure of the permit hunts was developed in the North Slope Muskox Harvest Plan which was approved by the Board of Game in 1999.

During the January 2012 statewide Board of Game meeting, the board adopted a Muskox Recovery program in Unit 26B that authorizes department personnel to annually remove up to 20 brown bears that are threatening or killing muskoxen in Unit 26B. The department is authorized to use lethal means and the program began in April 2012 and is authorized through June 2018. The department received funding in RY12 and RY13. In years no funding was available, bears were removed that were threatening or killing muskoxen when ADF&G were conducting other field work. A total of 7 bears were killed by the department.

**ISSUES:** Current issues involve reducing brown bear predation on muskoxen.

## ***SHEEP***

**STATUS:** Population size for the eastern Brooks Range is unknown, but sheep are distributed throughout the mountains. In the mid 1990s, sheep populations in Interior and northern Alaska declined substantially and these declines appeared to be correlated with deep snowfall during winters between 1988 and 1993. In general, sheep were far less abundant in the mid 1990s compared with the 1980s. Survey data from a minimum count area in a portion of eastern Unit 24A and western Unit 25A indicate that the population was relatively stable at a reduced density, during 2002–2012. In 2013, sheep in the eastern Brooks Range experienced high adult mortality and low lamb survival when a late spring persisted in the Brooks Range and on the North Slope. The population and lamb recruitment was lower in 2013 and 2014, but appeared recover by 2015 in the minimum count area.

Sheep hunting in the eastern Brooks Range continues to be desirable by consumptive users and the number of hunters and harvest has been increasing over the past decade. Current harvest ranges 115–250 rams taken by 330–550 hunters, annually, during the general season hunt in Units 25A, 26B, 26C, and eastern 24A. Although the number of sheep harvested was lower beginning RY14, success rates remained  $\geq 34\%$ . A small number of sheep are also taken in a winter registration hunt in Units 25A and 26C.

**MANAGEMENT ACTIVITIES:** Population surveys in a 730 mi<sup>2</sup> area are conducted annually in the upper Chandalar drainage in an area that is popular for resident sheep hunters and guided nonresidents hunters. Other trend count areas nearby are periodically surveyed. Sheep harvest and hunter effort are monitored based on harvest ticket reports.

**ISSUES:** The most challenging issue regarding sheep in the Northeast Alaska area is obtaining unitwide population estimates. There are some conflict issues between guided

and other sheep hunters in the Chandalar drainage between the Dalton Highway and Arctic Village. Most of this area is on state lands where the number of guides is unlimited. The remaining lands are within the Arctic National Wildlife Refuge where the number of guides is limited.

The Federal Subsistence Board established the Arctic Village Sheep Management Area in Unit 25A in 1991, and its northern boundary was expanded in 1995. This area was closed to sheep hunting by non-federally qualified hunters and has been the subject of debate in connection with dual management. A portion of this area was re-opened in May 2007 to a full-curl season using harvest tickets in order to comply with ANILCA. However, this area was again closed by the Federal Subsistence Board in 2012.

### ***SMALL GAME***

**STATUS:** The overall status of small game populations in the area is largely unknown. Anecdotal information suggests hare numbers were near their peak in 2008 and 2009 and are currently near the low of the 10-year population size cycle. Spruce and ruffed grouse are widespread south of the Brooks Range but relative abundance is unknown. Observations by Department staff indicate that ptarmigan are abundant in the Brooks Range.

**MANAGEMENT/RESEARCH ACTIVITIES:** None

**ISSUES:** None

### ***WOLVES***

**STATUS:** Wolves are widely distributed throughout Units 25A, 25B, and 25D and harvests are low relative to the total population (~4.4–5.3 wolves/1,000 km<sup>2</sup>). Annual harvest, primarily by trappers, has been relatively stable over the past 15 years and averages 50 wolves.

Wolves are present on the North Slope in Units 26B and 26C in low numbers (2.2–3.2 wolves/1,000 km<sup>2</sup>). Approximately 5–35 wolves are harvested annually, primarily by trappers, and likely have little effect on the population.

**MANAGEMENT ACTIVITIES:** Major activities include monitoring harvests, conducting periodic wolf population surveys, and communicating with residents and pilots to obtain anecdotal information on wolf numbers. Wolf surveys in portions of Units 25B and 25D were conducted in spring 2000, 2001, 2006 and 2009.

**ISSUES:** Wolf predation on moose is a concern, particularly in Units 25B and 25D. Local residents are currently exploring methods to increase wolf harvest and reduce moose predation by wolves.