

**PROPOSAL 130A -5 AAC 92.125 Intensive Management Plans.** Authorizes a muskoxen recovery program in Unit 26(B).

(x) **Unit 26(B) Muskoxen Recovery Area:** Notwithstanding any other provisions in this title, and based on the following information contained in this section, the commissioner or the commissioner's designee may conduct selective, lethal, brown bear removal to allow recovery of the muskoxen population in Unit 26B:

- (1) a Unit 26(B) muskoxen recovery area is established and consists of all lands within Unit 26(B); this recovery program does not apply to any National Park Service or National Wildlife Refuge lands unless approved by the federal agencies;
- (2) muskoxen and brown bear objectives are as follows:
  - (A) Unit 26(B) muskoxen are not managed intensively for high levels of human harvest, but they are managed to provide hunting opportunities; the population objective is a minimum of 300 muskoxen  $\geq$  1 year old during April surveys; achieving this objective will allow re-establishment of a hunting season and also enhance and maintain viewing opportunity; the harvest objective is 3–9 muskoxen annually, once the population reaches 300 and a harvestable surplus is available;
  - (B) the brown bear population objective for Unit 26(B) is to maintain the current estimated population of 200–320, while annually removing up to 20 brown bears identified as threatening or killing muskoxen; limiting the number of bears that can be removed will assure that brown bears persist as part of the natural ecosystem and will assure continued brown bear hunting and viewing opportunities;
- (3) findings of the Board of Game concerning populations and human use are as follows:
  - (A) the Unit 26(B) muskox population and harvest objectives have not been achieved;
    - (i) the muskoxen population size was estimated at 190 in April 2011; muskoxen numbers in Unit 26(B) increased during 1990–1995 from 122 to 330; some of this increase was the result of immigration from Unit 26(C); during the mid to late 1990s, numbers stabilized at around 265–300 muskoxen through 2003; subsequently, the population declined to 216 by 2006, and during 2007–2011, the population in Unit 26(B) slightly declined and stabilized at its current, reduced population size;
    - (ii) the hunting season for Unit 26(B) muskoxen has been closed since regulatory year 2006–2007; the first hunting season in Unit 26(B) was in 1990; during 1990–1997, all hunting was by Tier II permit; in regulatory year 1998–1999, the Alaska Board of Game determined that the amount necessary for subsistence (ANS) was 20 muskoxen in Unit 26(A) and Unit 26(B), west of the Dalton Highway Management Corridor and established a Tier II hunt; the board also determined an ANS of 4 muskoxen in Unit 26(B), east of the Dalton Highway Management Corridor and established a Tier I registration hunt for residents only; a drawing permit hunt was also established for residents only; 3 permits were issued annually for bull muskoxen in Unit 26(B), east

of the Dalton Highway, and up to 5 muskoxen were authorized by the Alaska Board of Game; beginning in regulatory year 2005–2006, permits were not issued for the drawing and Tier I registration hunts, east of the Dalton Highway in Unit 26(B); this was in response to the sharp decline in muskoxen numbers following 2003; however, the Tier II subsistence hunt west of the Dalton Highway remained open until regulatory year 2006–2007, when no permits to hunt muskoxen were issued for any of the hunts;

(B) predation by brown bears was identified as a primary source of mortality on muskoxen and is an important cause of the failure to achieve the population and harvest objectives;

(i) during 2007–2011, brown bear predation was identified as the primary source of mortality; 62 percent of the documented total adult muskoxen mortality ( $n=73$ ) was attributed to brown bear predation, which accounted for an average of 9 adult muskoxen deaths annually; during the same time period, 58 percent of documented calf mortality ( $n=45$ ) was caused by brown bear predation; this resulted in an annual average of 5 calves known to be preyed on by brown bears; over the 5 years, a total of 74 calves were classified as “missing”; their fates were unknown and not included in the above calculations;

(ii) during 2007–2011, the habitat appeared capable of supporting a larger muskoxen population; captured muskoxen were generally in good condition, and birth rates were sufficient to provide for population growth, but growth was not realized because of poor survival; concentrations of some trace nutrients in muskox body tissues were believed to be suboptimal for survival; an imbalance of trace minerals (particularly low copper and selenium with elevated concentrations of zinc and iron) can negatively affect immune systems and make muskoxen more susceptible to diseases and potentially more vulnerable to predation; thus, it is possible that habitat limitations may have been obscured by high mortality due to predation, controlling predation will help answer this question;

(C) reducing predation can reasonably be expected to aid in achieving the objectives;

(i) during 2004–2011, the population remained relatively stable at around 200 muskoxen; evidence indicates that the number of yearlings being recruited annually approximately equaled the number of adult muskoxen dying annually; if survival rates of either adult muskoxen or calves increase, then the muskoxen population would be expected to increase; reducing predation on adults and calves should change survival rates of one or both; during 1987–1995, the annual rate of increase for the entire population was 7%; this time period should be representative of what population growth rate Unit 26(B) muskoxen could experience if bear predation is reduced and habitat is not limiting; therefore, in a best case scenario, it would take approximately 7 years for the muskoxen population to reach 300;

(ii) when the muskoxen population increases to 300 muskoxen  $\geq 1$  year old during April surveys a hunt will be established if a harvestable surplus is available;

(D) reducing predation is likely to be effective and feasible utilizing recognized and prudent active management techniques and based on scientific information; selectively removing brown bears to reduce predation is an experimental approach, based on the hypothesis that relatively few individual bears commonly kill muskoxen; brown bear radiotracking data collected during 1991–2007 indicated that several radio-collared adult males were responsible for multiple muskoxen predation events in early spring in a given year or over several years; this suggests that targeting individual bears should be effective, especially for reducing the incidence of multiple kills in spring; most of the predation was caused by male bears prior to the time when females emerge from dens;

(E) reducing predation is likely to be effective given land ownership patterns;

(i) most of Unit 26(B) is state land; the land ownership pattern is 69 percent state, 29 percent federal, and 2 percent private; of the 29 percent federal lands, 12 percent is Bureau of Land Management, and these lands are available for bear control; total land available for bear control is 72–74 percent of the unit.

(ii) only two of the 8–15 total muskoxen groups in Unit 26(B) occasionally occur on federal lands within the Arctic National Wildlife Refuge;

(F) reducing predation is in the best interests of subsistence users because no harvest is currently taking place; an increase in the population that results in sustainable harvest will benefit all Alaska residents;

(4) permissible methods and means are as follows:

(A) hunting of brown bears by the public in Unit 26(B) during the term of the program may occur as provided in the hunting regulations set out elsewhere in this title; however, hunting will be restricted as necessary to maintain the current estimated population of 200–320.

(B) notwithstanding any other provisions in this title, the commissioner may allow agents of the state, or department employees to conduct aerial, land and shoot, or ground based lethal removal of any sex and age of brown bear using state owned, privately owned, or chartered equipment, including helicopters, under AS 16.05.783;

(5) time frame is as follows:

(A) during March 15, 2012–June 30, 2018 the commissioner may authorize removal of bears in the Unit 26(B) Muskoxen Recovery Area;

(B) annually the department shall, to the extent practicable, provide to the board a report of program activities conducted during the preceding 12 months, including implementation activities, the status of the muskoxen and brown bear populations, and recommendations for changes, if necessary to achieve the objectives of the plan;

(6) the program will be reviewed and modified or suspended if there is no evidence of improved survival or a detectable increase in the Unit 26(B) muskoxen population following 3 years of bear removal.