

**Upper Yukon/Tanana Predation Control Implementation Plan and Activities
Report to the Alaska Board of Game
March 2006**

Background

For more than 20 years, communities in and adjacent to Units 12 and 20E expressed concern about chronically low moose densities due to predation by wolves and bears, and proposed various predator control programs to increase moose numbers. During the Spring 2004 Board of Game meeting, the Upper Tanana/Fortymile Fish and Game Advisory Committee and the public provided testimony explaining the problem and made proposals to correct the situation. The Board of Game subsequently requested that ADF&G prepare a draft wolf and brown bear predation control implementation plan.

ADF&G developed the Upper Yukon/Tanana wolf and brown bear predation control plan to increase survival of moose in the dual predator system (wolves and brown bears) in a portion of Unit 12 and southern Unit 20E, and the board adopted the plan at their November 2004 meeting. It is in effect for 5 years, and began on January 1, 2005. However, the Board is currently considering changes to the plan. The objective, as listed in 5 AAC 92.125, is:

- To initiate an increase toward the intensive management moose population objectives of 4,000–6,000 moose with a sustainable annual harvest of 250–450 in Unit 12, and 8,000–10,000 moose with a sustainable annual harvest of 500–1,000 in the Fortymile and Ladue River drainages of Unit 20E.

Reduction of bears will be primarily focused in moose calving areas to improve calf survival, while wolf reductions will be conducted in a larger area of the Fortymile and Ladue River drainages to benefit all age classes of moose.

Plan Implementation Activities

Harvest Management. High moose densities in Units 12 and 20E supported a long hunting season and a bag limit of one moose of either sex during the 1960s. As declines began in the early 1970s, hunting for cows was closed. The season for bulls was shortened in 1973 and closed during 1977–1981. A ten-day bulls-only season was held during 1982–1990, and lengthened to 15 days, including antler restrictions, during 1991–2005, with up to 30 additional days in limited portions of the unit. Restrictive hunting regulations implemented in regulatory year (RY) 2001 kept the Unit 12 and 20E moose harvest within sustainable levels through RY 2005 (regulatory year begins on July 1 and ends June 30, e.g., RY05 = July 1, 2005–June 30, 2006). Hunting pressure is expected to remain at current levels or increase in the future, while the moose population is expected to remain at low levels if the 2004 predator densities persist. If this occurs, even more restrictive moose hunting regulations will likely be required in the next few years, including possible allocation through Tier I or Tier II permits. This predator control program is aimed at preventing this scenario by increasing moose survival through reduction in wolf and brown bear numbers.

Wolf Control. Under the wolf control portion of the program, 17 pilot and 33 gunner permits were issued in RY 2004, while 14 pilot and 17 gunner permits were issued for RY 2005. Current wolf control permits (RY 2005) are valid until control objectives have been met or April 30, 2006.

Bear Control. Under the bear control portion of the program, 111 permits were issued for RY 2004, while 9 permits have been issued so far for the RY 2005. Current bear control permits (RY 2005) are valid until control objectives have been met or June 30, 2006.

Habitat. Habitat quality and availability are likely not important factors limiting the moose populations in Units 12 and 20E. In the 1960s, available evidence indicates Units 12 and 20E supported much higher densities of moose than are currently present; however, no reliable population estimates were obtained. In southern Unit 20E, high twinning rates of 52% for adult cows observed during a 1984 research project and 31% and 24% observed during spring 2004 and 2005 surveys respectively indicate habitat in this area is capable of sustaining a higher moose density. By comparison, in Unit 20A where habitat is an important limiting factor, moose twinning rates averaged 8% since 1996. In addition, wildfires are common in Units 12 and 20E and fire suppression efforts are limited, resulting in favorable habitat conditions. Approximately 1600 and 230 square miles of habitat burned in Units 12 and 20E during 2004 and 2005 respectively, which will benefit future moose productivity. All indications are that moose habitat in the control area is capable of sustaining at least 1.0–1.5 moose per square mile.

Status of Prey and Predator Populations

Moose Population. Available evidence suggests the moose population in Units 12 and 20E was much higher (1.0-1.5 moose/mi²) in the 1960s, but since the late 1970s, it has been at low density (less than 1.0 moose/mi²). During 1981–2005, the department conducted eleven moose density estimation surveys, which confirmed persistently low numbers. The moose population size within the control area was estimated to be 2,310–3,370 in 2004, and 2,840–4,290 in 2005, based upon extrapolation from surveys conducted in a 4,630 mi² area of southern Unit 20E.

Calves and yearling bulls per 100 cows averaged 18 and 9, respectively, during fall 2000–2004. Fall 2005 surveys indicated there were an estimated 23 calves and 11 yearling bulls per 100 cows, within the control area as a whole. However, calf:cow and yearling bull:cow ratios were higher in the western portion (30 and 13) compared to the eastern portion (16 and 8) of the control area. There was a higher level of wolf removal in the western (estimated 57-75% removal) compared to the eastern (estimated 19-24% removal) portion of the control area. Analysis of these differences in ratios will require additional data collection over several years.

Estimated birth rate of moose in the control area is likely 138 calves:100 cows two years of age or older. This is based on research conducted during the 1980s in Unit 20E,

research of other interior Alaska moose populations in similar habitats, and spring twinning rate surveys conducted in southern Unit 20E during spring 2004 and 2005.

Based on current (2005) estimates of recruitment and using a 4% harvest rate for bulls, the harvestable surplus of moose within the control area is 93–172.

Wolf population. The pre-control wolf population in the control area was estimated in autumn 2004 (pre-harvest) using information from department surveys during late-winter 2004 combined with sealing records and anecdotal observations. The population in the control area was estimated at 190–250 wolves in 30–32 packs or approximately 28–38 wolves/1000 mi². During the winter of 2004–2005 a total of 101 wolves were reported taken in the control area. Of those, 58 were taken by wolf control permittees and 43 were taken by trappers and hunters. The level of wolf reduction was greater in the western half (estimated 57–75% reduction), compared to the eastern half (estimated 19–24% reduction), of the control area. Following the first year of the control program, the autumn 2005 wolf population (pre-harvest) was estimated to be 147–181 (77% of pre-control estimate), based on information from control permittee reports, department observations, and sealing records.

Brown bear population. The pre-control brown bear population within the focus area was estimated to be 135 (range 125–145) bears in June 2004. It was based on extrapolation of a density estimate obtained in central Unit 20E, including the entire 2,700 mi² bear focus area, during 1986 and on intensive research studies conducted in similar habitats with similar bear food resources during 1981–1998 in Unit 20A, 100 miles to the west. This estimate very nearly reflects the habitat carrying capacity for brown bears within the focus area, because the brown bear population is lightly harvested. During the first year of the control program (January–December 2005), a total of 9 brown bears (6–7% reduction) were taken from the focus area; 2 bears were taken by control program permittees and 7 bears were taken by hunters under state hunting regulations. All indications suggest the brown bear population within the brown bear control area was likely unaffected by harvest during the first year of the control program.

Recommendations to Achieve Plan Objectives

The Department recommends continuation of wolf and brown bear control efforts to benefit moose and also recommends expansion of wolf control to benefit the Fortymile Caribou Herd.

Additional measures that should be taken to help achieve plan objectives for brown bear predation control include:

- Implementation of regulations passed by the Board of Game at their January 2006 meeting that allow for sale of untanned brown bear hides (with claws attached) and skulls taken in active brown bear predation control areas.
- Allowing permittees to take brown bears at bait stations on the same day they are airborne.

- Allowing permittees to use inedible meat from game animals, such as road kills, as bait at authorized bait stations.