

**Central Kuskokwim Wolf Predation Control Implementation Plan and Activities
Report to the Alaska Board of Game
March 2006**

Background

For several years the Central Kuskokwim Fish and Game Advisory Committee expressed concern to the Board about declining moose numbers in Units 19A and 19B. The committee submitted several regulation proposals and recommended wolf predation control to stop the decline of the moose population and boost moose numbers in the area. In response to the concerns of the advisory committee and other users, the Alaska Department of Fish and Game initiated a comprehensive planning process for the area with a citizen based planning committee composed of a broad cross-section of stakeholders in Units 19A and B wildlife management. Upon reviewing information on the moose populations the majority of the Central Kuskokwim Moose Management Planning Committee agreed:

“There is a major concern that the moose populations in Units 19A and 19B will not meet the needs of local subsistence users and other consumptive users. Local observations and available scientific data indicate that the moose population has substantially declined and in some areas is very low and will continue to jeopardize subsistence and other uses.”

The Central Kuskokwim Moose Management Plan (CKMMP) developed by the planning committee is a comprehensive plan for the area that includes a recommendation for a wolf predation control program for Units 19A and B. The control program is one component of a multifaceted plan to rebuild the moose populations in the Central Kuskokwim region. The planning committee recommended that the first priority for wolf predation control efforts should be the areas most important for providing moose for subsistence uses. Unit 19A is where the majority of subsistence moose hunting by local residents and residents of Unit 18 occurs.

A wolf control implementation plan was adopted by the Board of Game in March 2004 for the Central Kuskokwim and consists of Units 19A and 19B. It is in effect for 5 years and began on July 1, 2004. However, the Board is currently considering changes to the plan. The objective for the program as adopted in March 2004 and as listed in 5 AAC 92.125 is:

- To initiate an increase toward the intensive management moose population objective of 13,500–16,500 moose with a sustainable annual harvest of 750–950 moose.

Plan Implementation Activities

WOLF CONTROL

The Board authorized the commissioner to issue public aerial shooting permits or public land and shoot permits as method of wolf removal pursuant to AS 16.05.783.

For the 2004–2005 wolf predation control program, the Department incorporated the March 10, 2004 Findings of the Alaska Board of Game Authorizing Wolf Predation Control in the Unit 19A Portion of the Central Kuskokwim Wolf Predation Control Area with Airborne or Same Day Airborne Shooting. The board recommended the Department seek to reduce the wolf population in Unit 19A by 80%. Based on the wolf population estimate of 180–240 wolves, approximately 140–190 wolves should be taken the first year of the program. Further, the board found that at no time should the wolf population in the Central Kuskokwim Wolf Control Implementation Area be reduced to fewer than 40 wolves. Thus, the wolf kill objective for 2004–2005 was 140 wolves.

Permits for the wolf control program were issued beginning November 2004. Two hundred applications (includes both pilot and gunners) were received. A total of 120 applications were approved (35 pilot and 85 gunner). Control activities were authorized during December 01, 2004–April 30, 2005. There were 2 time periods (January and February 2005) when activities were suspended for safety reasons because department staff were conducting wolf and moose surveys. There were 16 pilot permittees that reported going into the field. Of these 16 permitted pilots, 10 reported taking 43 wolves (22 males and 21 females). Approximately 79% of the wolves ($n=34$) were taken in the Holitna-Hoholitna River drainage, 16% in the Stony River drainage ($n=7$), and 5% in the Buckstock River (Aniak River drainage; $n=2$). Tracking conditions in the Aniak River were poor during 2004–2005, deterring most permittees. An additional 28 wolves were reported taken by trappers (24 in the Aniak drainage and Kuskokwim west of Aniak, and 4 in the Holitna drainage).

Prior to the 2005–2006 wolf predation control period, the Department estimated 125–175 wolves in Unit 19A. This was based on the fall 2004 wolf population estimate, the 2004–2005 total wolf take, prey densities estimates, habitat, and observations by Department personnel and the public. By not reducing the population to fewer than 40 wolves as recommended in the March 10th 2004 Board of Game Findings, the wolf take objective in the Unit 19A is 85–135 for 2005–2006. This includes wolves killed during wolf control and wolves harvested by trappers and hunters. The average number of wolves harvested by trappers and hunters was 31 during regulatory years (RY) 00–04 (range =25–49) (regulatory year begins on July 1 and ends June 30, e.g., RY05 = July 1, 2005–June 30, 2006). The wolf population estimate will be revised throughout the year as more information is obtained from permittees, trappers, and wolf surveys. Trapper harvest and wolf control take will be monitored so that 40–53 wolves remain in Unit 19A.

In March 2006, the Department revised the fall 2005–2006 wolf estimate based on a wolf survey conducted during the last week of January 2006. A range of 127–149 wolves was estimated to inhabit Unit 19A prior to the 2005–2006 wolf control period.

As of March 2, 2006, 88 control permit applications (includes both pilot and gunner) were received. Seventy-five applications were approved, resulting in 29 pilot and 46

gunner permits being issued. The control period opened December 3, 2005 and 29 wolves were reported taken during December 3, 2005–March 2, 2006.

Status of Prey and Predator Populations

MOOSE POPULATION

Composition surveys and population estimates completed in Unit 19A during 2005 suggest moose numbers have declined in Unit 19A over the past 7 years. In Unit 19B, no composition data was available until fall 2005. However, extrapolation of data from Unit 19A and other information suggest the Unit 19B population has also declined.

Population Composition—In November 2001, a trend count area survey on the Holitna-Hoholitna Rivers in Unit 19A included a 1 mile corridor along the river of approximately 96 mi². A total of 196 moose were observed with an observed bull:cow of 6:100 and an observed calf:cow ratio of 8:100. The low numbers observed could have been due to atypical moose distribution caused by shallow snow and relatively temperate late fall weather.

In November 2004, a modified Geo-Spatial Population Estimate (GSPE) technique was used to estimate composition in the Holitna-Hoholitna, Oskwalik, and Stony Rivers portion of Unit 19A (4828 mi²). A total of 226 moose were classified and the bull:cow (19:100, ±76%, 90% CI) and calf:cow ratio (32:100, ± 38%, 90% CI) estimates were higher than observed in the November 2001 trend count survey. Some improvement in the ratios is indicated, however, results of the two surveys cannot be directly compared because the 2004 survey covered a much larger geographic area and was done using different methods than the 2001 survey. The estimated percent moose calves during the November 2004 composition survey was 22% (± 38%, 90% CI).

In November 2005, composition surveys were conducted in the Holitna-Hoholitna drainage in Units 19A and in the Aniak drainage including the Kuskokwim River from Lower Kalskag to Napiamiut. A different technique was implemented than what was used for previous composition surveys because of the concern about possible atypical moose distribution when confining the survey area to the river corridor and the concern about wide confidence intervals in the November 2004 survey. A total of 307 moose were observed and the observed bull:cow ratio was 8:100 with most bulls classified as yearlings (12 of 19). The observed calf:cow ratio was 24:100 and the percent calves was 18%. The low bull:cow ratios observed during the past 3 composition surveys indicate that hunting pressure has been high in the Holitna-Hoholitna drainage. In the western portion of Unit 19A, the Aniak drainage and the Kuskokwim River from Lower Kalskag to Napiamiut was also surveyed (1,700 mi²). No composition data had been collected previously in this portion of Unit 19A. A total of 410 moose were counted with an observed bull:cow ratio of 20:100 and an observed calf:cow ratio of 23:100. The percent calves was 16%.

Population size—Moose population size was calculated for Unit 19A during the planning process and for the March 2004 Board of Game meeting, based upon earlier estimates of density in portions of the Unit. In March 1998, 1.25 moose/mi² ($\pm 14\%$, 80% CI) was estimated using Gasaway survey methods in a portion of the Holitna-Hoholitna drainage (1733 mi²). In March 2001, 0.7 moose/mi² ($\pm 21\%$, 90% CI) was estimated using GSPE methods in a portion of the Aniak drainage (1731 mi²). Extrapolation of data from both estimates to all of Unit 19A resulted in a total population size of 4300–6900.

The population size for Unit 19A was revised in February 2005, based upon an estimate of 0.27 moose/mi² ($\pm 16\%$, 90% CI) obtained using GSPE survey methods for the portion of the unit south of the Kuskokwim River (7,155 mi²). A sightability correction factor of 1.25 was applied to obtain a density of 0.35 moos3/mi². Extrapolation of this data to all of Unit 19A resulted in a total population size of 3000–4000, which is lower than our 2004 total and indicates numbers have declined over the past 7 years.

Estimated percent calves in the population during the February 2005 survey was 17% ($\pm 29\%$, 90% CI), which was consistent with the 22% calves estimated during November 2004. It was also within the 16–22% calves commonly observed in southwestern interior late winter surveys. However, it was higher than the estimated 11% calves in the March 2001 survey in a portion of the Aniak River drainage.

During the Central Kuskokwim moose management planning process, many of the local representatives and other participants believed the Unit 19A moose population estimates provided by the Department were too high. Because of this input and lack of conclusive moose population data, the CKMMP includes a statement that “ADF&G survey data is limited and traditional ecological knowledge and the knowledge of all users has played an important role in judging the status and trend of the moose population.” The February 2005 survey data support the supposition incorporated into the CKMMP that the moose population has declined significantly since previous moose population estimation surveys were conducted.

Combining current extrapolations for Units 19A and 19B results in a total estimate of 5000–7000 moose, which is well below the intensive management objective of 13,500–16,500.

Harvest—Reported moose harvest in Units 19A and 19B by Alaska residents and nonresidents during fall 2004 was 160 and preliminary reported moose harvest during fall 2005 is 201, which is well below the intensive management harvest objective of 750–950.

WOLF POPULATION

Population Size— The pre-control wolf population in Unit 19(A) was estimated in fall 2004 using an extrapolation technique combined with sealing records and anecdotal observations. The population in the entire 9,969 square mile area was estimated at 180–240 wolves in 24–28 packs or approximately 1.8–2.4 wolves per 100 square miles.

In January 2006, the department conducted a reconnaissance wolf survey in Unit 19A, south of the Kuskokwim River (6,417 mi²). Staff observed 38 wolves, and based on tracks and observed wolves, we estimated 93–97 wolves south of the Kuskokwim River in 23 packs and 5 singles. Average pack size was 4 wolves, 9 packs were pairs, and the largest packs had 7–8 wolves. Pack size and wolf behavior indicated that wolf control activities are having a greater effect in the eastern portion of the control area (Holitna, Hoholitna, and Stony River drainages) compared to the western portion (Aniak River drainage). Indeed, most of the wolves taken in the wolf control program were taken in the Holitna drainage. Average pack size in the Aniak drainage was 5.3-5.5 wolves (n=6) and 3.5 wolves in the Holitna and Stony River drainages (n=11). Based on tracks and observing wolves in both areas, it appeared that wolves residing in the Holitna and Stony River drainages were more secretive.

A density of 1.0–1.6 wolves/100mi² and an average pack size of 7 wolves was used to estimate wolf densities north of the Kuskokwim River (3,282 mi²). This resulted in an estimated 34–52 wolves in 5–7 packs. This extrapolated wolf density is commonly used in areas of low moose density with no alternative prey and where wolves are lightly harvested. Based on the January 2006 survey and the extrapolation, Department revised it’s earlier estimate of the autumn 2005 wolf numbers in Unit 19A from 125–175 wolves to 127–149 wolves.

Harvest— Hunting and trapping harvest over the past 5 years (regulatory years 2000–2004) averaged 31 wolves annually in Unit 19A (Table 1). Periodically, higher harvests occurred and are probably related to effects of snow on travel in the Aniak and Holitna drainages. An additional 43 wolves were taken in the wolf control program during 2004–2005.

Table 1. Wolf harvest and wolf control take in Unit 19A, regulatory years 2000–2004.

Regulatory Year	Hunting and Trapping Harvest	Wolf Control Take	Total Kill
2000–2001	25	-	25
2001–2002	49	-	49
2002–2003	25	-	25
2003–2004	29	-	29
2004–2005	27	43	70

Recommendations to Achieve Plan Objectives

Continue to implement the plan as approved by the Board.