FEDERAL AID FINAL RESEARCH PERFORMANCE REPORT

ALASKA DEPARTMENT OF FISH AND GAME
DIVISION OF WILDLIFE CONSERVATION
PO Box 115526
Juneau, AK 99811-5526

PROJECT TITLE: Response of moose and their predators to wolf reduction and short-term bear removal in a portion of Unit 19D East

PRINCIPAL INVESTIGATOR: Mark A. Keech

FEDERAL AID GRANT PROGRAM: Wildlife Restoration

GRANT AND SEGMENT NO. W-33-7

PROJECT NO. 1.62

WORK LOCATION: Interior Alaska. Unit 19D East, the upper Kuskokwim River drainage upstream of the Selatna River. Intensive study area (also known as the "Experimental Micro-Management Area" or "EMMA"). The 528-mi^2 area along the Kuskokwim and Takotna rivers within Unit 19D East that immediately surrounds the community of McGrath.

STATE: Alaska

PERIOD: 1 July 2008 – 30 June 2009

I. PROGRESS ON PROJECT OBJECTIVES SINCE PROJECT INCEPTION

OBJECTIVE 1: Monitor response of moose populations to recent management actions.

Since the start of this project we have completed 4 moose population estimates, as well as monitored survival of 3 cohorts of calves and 4 cohorts of yearling moose. In addition, we have monitored calving, twinning, and survival rates of adult moose during each year.

OBJECTIVE 2: Characterize winter moose browse in Unit 19D East, with emphasis on the intensive study area.

A winter browse survey was completed under Federal Aid Project 5.20 within the study area during spring 2009 that meets the objectives for this study.

OBJECTIVE 3: Estimate wolf numbers in Unit 19D East with emphasis on the intensive study area.

We completed a wolf population estimate in the study area in spring 2006 and spring 2009.

OBJECTIVE 4: Estimate black bear numbers in the intensive study area.

We completed a black bear population estimate in the study area in spring 2007. We were unable to complete a black bear survey during spring 2009 due to flooding conditions in the study area. This job will be rescheduled for spring 2010.

OBJECTIVE 5: Analyze hair and tissue samples for species, sex, and age information.

During 2008 we had DNA analyzed from hair samples of suspected predators collected from 67 calf mortality sites. DNA was identified to species, sex, and individual when possible. In addition, in 2008, ages of bears captured in 2006 and 2007 were determined through cementum annuli counts from extracted teeth.

OBJECTIVE 6: Review literature, write annual progress reports, write final project report, and publish results in peer-reviewed journals.

Since the start of this project the principal investigator reviewed literature on moose mortality, population dynamics/modeling, and productivity. Additionally, literature on DNA analysis, bear and wolf population estimation techniques, and methods to evaluate browsing intensities by moose were reviewed. The 2006, 2007, and 2008 annual research progress reports for this project have also been completed since the inception of this project.

II. SUMMARY OF WORK COMPLETED ON JOBS IDENTIFIED IN ANNUAL PLAN THIS PERIOD

JOB/ACTIVITY 1A: Estimate moose numbers and population composition in Unit 19D East.

During 4–12 November 2009 we conducted aerial moose surveys within the EMMA (528 mi^2), expanded EMMA (1118 mi^2), and the Unit 19D East moose survey area (5313 mi^2). We estimated 758 (±191) moose in the EMMA, 1718 (±352) moose within the expanded EMMA, and 3889 (±959) moose within the Unit 19D East moose survey area. We used 6 fixed-wing aircraft to complete the survey. No Federal Pittman-Robertson operating funds were used on this job.

JOB/ACTIVITY 1B: Calf mortality study/determine primary causes of mortality of moose calves.

Because of spring flooding in the study area we were unable to radiocollar moose calves and conduct a calf mortality study. Therefore this job was not accomplished during this reporting period. This job will be rescheduled for spring 2010. No Federal Pittman-Robertson operating funds were used on this job.

JOB/ACTIVITY 1C: Determine condition, movements, and mortality rates of yearling moose.

We captured and fitted radiotransmitters to 16 short-yearling female moose during 25 March 2009 (1 capture related mortality). Survival of these radiocollared yearlings from 15 May to 30 June 2009 was 92%. During this report period we also monitored the annual survival of the 2008 yearling cohort, their survival was approximately 93% from May 2008 to May 2009. No Federal Pittman-Robertson operating funds were used on this job.

JOB/ACTIVITY 1D: Determine twinning rates and reproductive indices of moose in Unit 19D East.

During May and June 2009 we conducted approximately 10 flights to determine parturition and twinning rates among both radiocollared and non-radiocollared cows. Six

of 8 radiocollared 3-year-old moose were observed with calves, giving an observed parturition rate of 75% for that age class during spring 2009. Overall parturition rate for 2009 was approximately 85% for all radiocollared cows. Twinning rate was 33% among parturient radiocollared cows and 26% for randomly encountered uncollared cows. No Federal Pittman-Robertson operating funds were used on this job.

JOB/ACTIVITY 1E: Monitor collared adult and yearling moose for survival and movement information.

During this report period we conducted approximately 12 radiotracking flights to determine survival and movements of adult and yearling moose. No Federal Pittman-Robertson operating funds were used on this job.

JOB/ACTIVITY 3: Wolf population estimation.

During 18–20 March 2009 we conducted an aerial wolf survey within the study area. We estimated a post-harvest wolf population in the 3210-mi^2 public wolf control zone (this area surrounds the EMMA and expanded EMMA) of 15–17 wolves. We used 3 fixed-wing aircraft to complete the survey. No Federal Pittman-Robertson operating funds were used on this job.

JOB/ACTIVITY 4: Black bear population estimation.

Because of spring flooding in the study area, this job was not accomplished during this reporting period. However, during this reporting period we did capture 21 previously marked black bears and 9 new black bears (no capture-related mortalities) to maintain an adequate marked sample to complete the population estimate currently rescheduled for spring 2010. No Federal Pittman-Robertson operating funds were used on this job.

JOB/ACTIVITY 6: Literature review, data analysis, reporting writing, and publication of results.

During this report period the principal investigator reviewed literature on moose mortality, population dynamics/modeling, and productivity; bear and wolf population estimation techniques; and methods to evaluate browsing intensities by moose. The 2008 annual research progress report for this project was also completed during this report period. No Federal Pittman-Robertson operating funds were used on this job.

III. ADDITIONAL FEDERAL AID-FUNDED WORK NOT DESCRIBED ABOVE THAT WAS ACCOMPLISHED ON THIS PROJECT DURING THIS SEGMENT PERIOD

None.

IV. PUBLICATIONS

None.

V. RECOMMENDATIONS FOR THIS PROJECT

None.

VI. APPENDIX

None.

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