

**FEDERAL AID ANNUAL  
RESEARCH PERFORMANCE REPORT**

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

**Alaska Department of Fish and Game  
Wildlife Restoration Grant**

**GRANT NUMBER:** W-33

**SEGMENT NUMBER:** 12

**PROJECT NUMBER:** 1.73

**PROJECT TITLE:** Long-term effects of predator reductions on moose abundance, survival, nutrition, and hunting harvest in the Unit 19D East moose management area

**PROJECT DURATION:** 1 July 2012–30 June 2017

**REPORT DUE DATE:** 1 September 2014

**PARTNER:** None

**PRINCIPAL INVESTIGATOR:** John F. Benson, ADF&G

**COOPERATOR:** None

**WORK LOCATION:** Interior, Alaska. Unit 19D East, the upper Kuskokwim River drainage upstream of the Selatna River. Intensive study area (also known as the “Unit 19D moose management area” or “MMA”) comprised of a 2,896 km<sup>2</sup> area along the Kuskokwim and Takotna rivers within Unit 19D East that immediately surrounds the community of McGrath.

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**I. SUMMARY OF WORK COMPLETED THIS SEGMENT ON JOBS IDENTIFIED IN ANNUAL WORK PLAN**

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

No moose survey was planned or conducted during the 2013–2014 reporting period.

**JOB/ACTIVITY 1B:** Determine annual survival rates and primary causes of mortality of moose calves.

We monitored the first-year survival of the 2013 calf cohort. Their survival rate (May 2013–May 2014) was approximately 57% (29 of 51 lived). We attributed 10 deaths to black bears, 3 deaths to unknown (black or brown) bears, 1 death to a brown bear, 1 death to an unknown predator, 4 deaths to natural (nonpredation) causes, and 3 deaths to unknown causes. No federal Pittman-Robertson operating funds were used on this job.

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

We captured 15 female, yearling moose to deploy radio collars and assess condition of the animals. Thirteen of 15 moose were weighed and the mean weight was 417 pounds (SE = 8.9, range 370–465,  $n = 13$ ). No federal Pittman-Robertson operating funds were used on this job.

JOB/ACTIVITY 1D: Determine twinning rates of moose in the MMA.

We did not conduct twinning surveys during May 2014.

JOB/ACTIVITY 2: Conduct moose browse surveys.

The winter moose browse survey has been rescheduled for spring 2015 based on logistical constraints and revision of the research schedule.

JOB/ACTIVITY 3: Wolf population estimation.

The wolf survey was not completed due to poor snow tracking conditions during winter 2013–2014.

JOB/ACTIVITY 4a: Bear population estimation.

We conducted a mark-resight black bear survey in the EMMA between 4–12 May 2014 in which we obtained a total of 134 sightings of independent black bears and 35 sightings of radiocollared bears in 8 survey days. Preliminary modeling of these results yielded an estimate of 111 independent bears (95% CI [88, 146], SE = 15). No federal Pittman-Robertson operating funds were used on this job.

JOB/ACTIVITY 4b: Estimate black bear harvest rates.

Six black bears were taken from the bear control focus area during FY14 including 4 taken by control permittees and 1 by a hunter in the fall and 1 taken by a hunter in the spring.

JOB/ACTIVITY 5: DNA analysis.

We collected 16 predator DNA (hair) samples at calf mortality sites during May–June 2013 and had them processed by the lab of Dr. Lisette Waits at the University of Idaho during summer–fall 2013. DNA analysis identified 8 unique predators at calf mortality sites: 5 male black bears, 2 female black bears, and 1 grizzly bear of unknown sex. No federal Pittman-Robertson operating funds were used on this job.

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

The principal investigator reviewed the literature and prepared an updated research proposal for the project. No federal Pittman-Robertson operating funds were used on this job.

**II. SIGNIFICANT DEVIATIONS AND/OR ADDITIONAL FEDERAL AID-FUNDED WORK NOT DESCRIBED ABOVE THAT WAS ACCOMPLISHED ON THIS PROJECT DURING THIS SEGMENT PERIOD**

The browse survey (job/activity 2) was delayed until FY15 due to the busy fieldwork schedule planned for F14. The wolf survey (job/activity 3) was not accomplished during FY14 because snow conditions were not appropriate.

**III. PUBLICATIONS**

None.

**IV. RECOMMENDATIONS FOR THIS PROJECT**

None.

**PREPARED BY:** John F. Benson

**DATE:** 2 June 2014