FEDERAL AID ANNUAL RESEARCH PERFORMANCE REPORT

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

PROJECT TITLE: Import of predation and habitat quality to moose in Game Management Unit 13

PRINCIPAL INVESTIGATOR: Bruce Dale

FEDERAL AID GRANT PROGRAM: Wildlife Restoration

GRANT AND SEGMENT NO. W-33-7

PROJECT NO. 1.64

WORK LOCATION: Game Management Unit 13A, Southcentral Alaska. The exact boundaries will be determined by movements of radio-collared moose, research needs, and other related research projects but will likely include the drainages of the Oshetna River, Tyone River, Nelchina River, and Goose Creek and may include the drainages of Tolsona Creek and Moose Creek

STATE: Alaska

PERIOD: July 1, 2008 – June 30, 2009

I. PROGRESS ON PROJECT OBJECTIVES SINCE PROJECT INCEPTION

OBJECTIVE 1: Continue to monitor the dynamics of GMU 13A moose population.

We continue to monitor population dynamics through annual assessments of pregnancy, twinning rate, and calf survival. At this point, pregnancy appears to be constant, twinning rate increasing, and calf survival remains poor. Moose trend counts, however, indicate an increasing population.

OBJECTIVE 2: Utilize multiple predator-multiple prey models to assess the role of predation on population dynamics.

We modified a multiple-predator model developed by Dale et al. (1994) to evaluate trends in neonatal calf survival when wolf predation is reduced but bear numbers remain constant. We also used this model to estimate the range of potential parameters for a Type II functional response of bears to changes in abundance of moose calves.

OBJECTIVE 3: Assess habitat selection of moose.

At present, we have a decent data set for evaluating early summer and winter habitat selection for moose. This data has been used for sampling purposes to evaluate annual variation in protein availability by W. Collins and D. Spalinger (Project 1.59) and may be used to evaluate variation in copper and selenium availability to moose in Unit 13. This dataset is also being used to compare bear distribution relative to moose distribution during summer.

OBJECTIVE 4: Assessment of nutritional condition of cow moose.

We have now collected several years' data on the assessments of nutritional condition of cow moose. These data have been compared to earlier assessments in Unit 13 and nutritional condition of moose in Unit 16B. These comparisons have been used to evaluate Intensive Management population objectives for Unit 13 moose. Continued monitoring of trends in nutritional condition of moose will be used as an additional trigger to institute cow harvests as the population responds to Intensive Management actions.

OBJECTIVE 5: Assessment of nutritional condition factors affecting survival of calf moose.

Data collection is complete for this objective; however, our analysis of these data is not. Preliminary results suggest that fat reserves are slightly lower in Unit 13 calves than in control areas and liver copper levels may be marginal. Further investigation into the copper deficiency is being considered. However, in general, the nutritional condition of neonatal moose calves appears adequate and subsequent growth and development appear to be normal for the overall nutritional state of this moose population. We plan to monitor trends in survival to see if additional work is necessary.

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

JOB/ACTIVITY 1A: Population monitoring. Each year we will capture and radio collar 5-10 female yearlings to serve as an annual cohort. All cohorts will be monitored through time to assess calf, yearling, and adult survivorship (Pollock et al. 1989), productivity, and rate of population increase (Eberhardt 1985).

We captured 6 calves in November 2008. In addition, we monitored survivorship and productivity of the cohort. We had no capture related mortality. We also monitored approximately 50 cows during calving and estimated pregnancy, twinning rates, and survival rates of their offspring.

JOB/ACTIVITY 3A: Habitat selection. We will use location data from already deployed GPS collars along with the GIS layers discussed above to assess habitat selection by moose across seasons and across reproductive class.

We collected information on information on habitat use by aerial radiotracking several times during the summer and in early and late winter.

JOB/ACTIVITY 4A: Moose nutritional condition. We will conduct paired captures of up to 30 adult female moose and their calves in the fall and following spring to assess the nutritional condition of these individuals and determine changes across winter.

We captured and handled 14 cows and 6 calves in the fall. We assessed pregnancy of all adults through blood assays, measured rump fat with ultra-sound, and evaluated lean body mass through body condition scoring (Crouse method). We did not have any captured related mortalities on adults. We did not conduct spring captures due to lack of funds.

JOB/ACTIVITY 5A: Factors affecting calf survival. We will collect up to 20 calves each in Unit 20A and unit 13A and compare nutritional status, growth, development, and frequency of pathologies to identify factors that may affect calf survival rates in Unit 13.

We did not collect or necropsy any calves. We will not collect any more unless there is some indication that the viability of calves has decreased.

JOB/ACTIVITY 6A: Reports/meetings. Results of study and progress on objectives will be reported on.

We are currently synthesizing results for a final report and manuscript next year.

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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