

**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:** 1.67

**PROJECT TITLE:** Comparative nutritional status among 6 high density moose subpopulations in Interior Alaska

**PROJECT DURATION:** 1 July 2008–30 June 2015

**REPORT DUE DATE:** 1 September 2014

**PARTNER:** None

**PRINCIPAL INVESTIGATOR:** Kalin Ann Kellie Seaton

**COOPERATORS:** John Haddix (U.S. Army), Casey Brown (University of Alaska Fairbanks), Todd Brinkman (Scenarios Network for Alaska and Arctic Planning)

**WORK LOCATION:** Interior Alaska (Units 20A, 20B, 20C, and 20D)

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

**OBJECTIVE 4:** Connect nutritional indices, population estimates and harvest by monitoring the movements of individual moose (% present) during survey and hunting seasons.

**JOB/ACTIVITY 4A:** Radiotrack moose and obtain location information.

We continued to monitor moose in Unit 20C each month during the winter to determine overwinter calf mortality as well as adult mortality and cause of death. We continued to receive fine-scale GPS locations from GPS collars via the ARGOS satellite system for moose in Units 20A and 20C. Finally, we monitored adult, female, collared moose during the calving season to determine whether or not they had a calf. This reproduction information is used as an index of nutrition.

OBJECTIVE 6: Evaluate the progression of nutritional differences between burned and unburned areas of Unit 20A.

JOB/ACTIVITY 6A: Evaluate use of recent burns by collared moose.

We hired a short-term nonpermanent (STNP) technician to analyze preliminary GPS location data delivered via ARGOS with specific reference to use of burns in Unit 20A. The results of those analyses will be included in the final report.

JOB/ACTIVITY 6B: Determine nutritional differences between burned and unburned habitat.

We also used the STNP technician to summarize nutritional information (weight at 10 months, productivity, trace mineral levels) for radiocollared moose with reference to use of burned areas in Unit 20A.

OBJECTIVE 7: Write annual progress reports, write final report, and publish in peer-reviewed journals.

As a result of unforeseen workload issues, this project was extended for 1 year. Writing and final analyses for this project will be conducted during fiscal year 2015.

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

I prepared and proofed a Microsoft Access<sup>®</sup> database that included all Units 20A, B, C, and D mortality data for moose from 1996 to present. I also summarized mortality, reproduction and migration information for radiocollared moose in hunt zones 4 and 5 to explore whether any of these factors helped to explain shifts in relative moose density within those zones.

In addition, under objective 3, I collaborated with ADF&G biologists Thomas McDonough and John Crouse to combine data on trace mineral levels in moose blood. These levels will be examined at the individual and population levels along with nutritional covariate data to determine whether trace mineral values could be used as a population-level index of nutritional condition. Specific results for my study areas will be discussed in the larger context of the final report.

## **III. PUBLICATIONS**

None.

## **IV. RECOMMENDATIONS FOR THIS PROJECT**

It is likely that the publishing goals for this project (objective 7, jobs 7a and 7b) will be replaced with a single peer-reviewed publication relating the variation in nutritional condition at high density with a focus on the potential use of trace mineral analysis as an index of nutrition. The information we have collected on moose dynamics in burns will be summarized as a technical report as additional time is needed before long-term patterns can result in measureable differences in nutrition/behavior.

**PREPARED BY:** Kalin A. Kellie Seaton

**DATE:** 13 August 2014