

**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: AKW-4 Wildlife Restoration FY2015

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 2016

REPORT DUE DATE: 1 September 2015

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)

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

OBJECTIVE 2: Estimate and evaluate nutritional differences among 6 high-density subpopulations using short-yearling weights.

JOB/ACTIVITY 2B: Compare nutrition among 6 high-density subpopulations.

I conducted a preliminary analysis comparing nutritional condition among the 6 populations, as well as several other populations at different nutritional levels across the state. Trace mineral levels, 10-month weights and pregnancy rates were compared at individual and population levels.

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

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

We continued to monitor moose mortality among radiocollared moose in Units 20A and 20C each month. We continued to receive fine-scale GPS locations from GPS collars via

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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) Wildlife Biologist II to summarize and 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 Wildlife Biologist 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 and prepare a preliminary report to be used in the final report.

JOB/ACTIVITY 6C: Collect fine-scale movement information to determine movement and use patterns in burned and unburned habitat.

We continued to receive and process GPS location information that was collected and transmitted from collared moose in Units 20A and 20C.

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 2016.

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

I hired retired ADF&G biologist Rod Boertje to assist with parturition flights in Unit 20A (Job 4a) during May–June 2015. During this period, I met with him several times to discuss analyses, manuscript direction, and future research.

In addition, under objective 3, I continued to collaborate 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: 6 August 2015