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: 1.68

Project Title: Factors affecting moose forage quality and subsequent reproductive success.

Project Duration: 1 July 2009 to 30 June 2016

Report Due Date: 1 September 2015.

PRINCIPAL INVESTIGATOR: William B. Collins

COOPERATORS: Don Spalinger, University of Alaska Anchorage

WORK LOCATION: Matanuska Research Farm, Togiak Valley, Colville River, Nelchina Basin, Game Management Units 15, 17.

I. PROGRESS ON PROJECT OBJECTIVES DURING LAST SEGMENT

OBJECTIVE 1: Nitrogen as a potentially limiting nutrient to moose. We are analyzing data collected for this objective.

OBJECTIVE 2: Effects of climate and utilization on browse quality. We established a set of controlled experiments which will enable us to begin assessing the effects of soil temperature, soil fertility, soil moisture, and solar radiation on the productivity and quality of two important willow forages—an upland species, *Salix pulchra*, and a riparian species, *Salix alaxensis*. We cloned 128 plants of each species and subjected them to all 4 treatments for this period.

We are analyzing 2014 nitrogen and tannin samples collected from these treatments in summer.

OBJECTIVE 3: Hormonal link between diet quality and reproductive performance of moose. Completed.

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

JOB/ACTIVITY 1: Moose forage nitrogen and protein binding

We completed all laboratory analyses of forage samples from each of our study areas, and we are summarizing results.

JOB/ACTIVITY 2: Diets by fecal alkane analysis

A second manuscript regarding analysis of moose diets by the fecal alkane technique is in review.

JOB/ACTIVITY 3: Climate/utilization effects—potted willows

Treatments have been maintained during the 2015 growing season.

JOB/ACTIVITY 4: Hormonal link

Manuscript in review.

JOB/ACTIVITY 5: Forage availability by remote sensing

One manuscripts based on remote sensing of Nelchina and Placer Valley habitats has been published, and another has passed through peer review.

III. COSTS INCURRED DURING THIS SEGMENT

75% federal, 25% state.

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

V. PUBLICATIONS

Walton, K. M., D. E. Spalinger, W. B. Collins, and J. J. Willacker. 2013. High spatial resolution mapping for assessment of wildlife habitat. Wildlife Society Bulletin 37(4):906-915.

VI. RECOMMENDATIONS FOR THIS PROJECT

Publish results.

Prepared by: William B. Collins

Date: 25 August 2015