

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

**Grant Number:** W-33

**Segment Number:** 12

**Project Number:** 3.52

**Project Title:** Climatic and nutritional regulators of caribou productivity in western Alaska

**Project Duration:** 1 July 2011 to 30 June 2015

**Report Due Date:** 1 Sep 2014

**Partner:**

**PRINCIPAL INVESTIGATOR:** William B. Collins

**COOPERATORS:** Don Spalinger, University of Alaska Anchorage; Andy Aderman, Togiak National Wildlife Refuge.

**WORK LOCATION:** Western Alaska, Game Management Units 9, 10, 17, and 19.

---

**I. PROGRESS ON PROJECT OBJECTIVES DURING LAST SEGMENT**

**OBJECTIVE 1 :** Nutritional factors affecting caribou productivity. We summarized results regarding forage availability and quality on Unimak Island and have begun preparation of a manuscript for publication. We completed aerial photography and ground truthing of Alaska Peninsula caribou range from Cold Bay to King Salmon and are developing a map of the vegetation types comprising that range.

**OBJECTIVE 2 :** Climatic factors affecting caribou productivity. Personnel conducting this objective of the project left unexpectedly, and we are in the process of regrouping to move it forward.

**OBJECTIVE 3 :** We have summarized 10 years of rain-on-snow events on Unimak Island and have begun the same for the Alaska Peninsula.

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

### **JOB/ACTIVITY \_1\_:**

We completed forage maps for Unimak Island. We completed aerial photography and ground truthing of Alaska Peninsula caribou range from Cold Bay to King Salmon and are developing a map of the vegetation types comprising that range.

### **JOB/ACTIVITY \_2\_:**

We collected winter caribou fecal samples, as well as reference plants, from Alaska Peninsula Muchatna, Nushagak Adak, and Kagalaska ranges. We completed our analyses of the Unimak Island winter diet and are in the process of completing the Alaska Peninsula and Adak Island winter diets.

### **JOB/ACTIVITY \_3\_:**

We are evaluating various available methods and data bases for determining historic and current greenup across the study area.

### **JOB/ACTIVITY \_4\_:**

We collected a second year of data from 128 *Salix pulchra* (representing upland species) and 128 *Salix alaxensis* (representing riparian species) plants that we cloned, isolated in pots, and subjected to 4 treatments: 3 levels of fertility, 2 soil temperatures, 3 levels of soil moisture, and 3 levels of solar radiation. We have begun nitrogen and tannin analyses of those samples

### **JOB/ACTIVITY \_5\_:**

We have summarized 10 years of rain-on-snow events on Unimak Island, have begun the same for the Alaska Peninsula, and are beginning to determine ice crust effects on forage availability.

## **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**

## **VI. RECOMMENDATIONS FOR THIS PROJECT**

**Prepared by:** William B. Collins

**Date:** 8/13/14