

FEDERAL AID INTERIM 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-20

PROJECT NUMBER: 3.52

PROJECT TITLE: Climatic and nutritional regulators of caribou productivity in western Alaska

PROJECT DURATION: 1 July 2016 to 30 June 2020

REPORT DUE DATE: 1 Sep 2017

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

Briefly describe how Federal Aid funds were spent on each active job, listing the results achieved during this segment period. If a job was not accomplished as planned, explain briefly why.

I. PROGRESS ON PROJECT OBJECTIVES DURING LAST SEGMENT

OBJECTIVE 1: Nutritional factors affecting caribou productivity.

We classified vegetation of the Alaska Peninsula as appearing on low-level aerial imagery taken by us in 2015 and up-scaled this information to public domain satellite imagery. This information is being used in conjunction with our forage quality analyses to further develop our understanding of caribou movements, habitat selection, and herd productivity.

OBJECTIVE 2: Climatic factors affecting caribou productivity.

No additional work was done on this objective, because the only locally available pilot and aircraft capable and willing to do this work relocated out of state and is no longer available. Other commercial air support is sometimes available, but at long distances and too unpredictably to meet the needs of this objective.

OBJECTIVE 3: Effects of rain-on-snow events on nutrient intake by caribou on Unimak Island and the Alaska Peninsula.

Going into this project, I understood that the QuikSCAT satellite had stopped operating in November 2009, but that another satellite platform would eventually

take its place in providing the kind of data needed for this objective. Since then, I have analyzed the archived QuickSCAT data, but I have not found any new satellite data or alternative methods which can support this objective.

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

Job/Activity 1: Identify Principal Caribou Range Types by Season

Accomplishments: We classified vegetation recorded in aerial photographs that we took of the Alaska Peninsula in 2015. We then up-scaled those classifications to 6 World View satellite images representative of Alaska Peninsula vegetation. Upon purchase of remaining imagery, a full-coverage map can now be readily assembled.

Job/Activity 2: Forage Selection and Food Habits of Caribou Based on Analysis of Alkanes and Long-chain Alcohols in Feces

Accomplishments: We recollected winter forage samples and reference plants from the Alaska Peninsula, after the original samples had been prepared for analysis, placed in a large contractor's bag, and accidentally disposed of by janitorial. We simultaneously collected a more extensive set of winter fecal samples for representation of diet. We are analyzing those samples. We are also investigating the utility of the genetic bar-coding technique for estimating diet composition, with the intent of comparing the results with analysis of diet by the alkane/alcohol, micro histological, and bite count techniques. So far, we have had limited success with the genetic technique, due to difficulties in concentrating some plant tissues. However, we continue to pursue this technique, because we believe the concentration problem can be solved.

Job/Activity 3: Timing of Green-up and Availability of Important Caribou Forages

Accomplishments: We continued recording dates of green up and leaf senescence in calving areas and locations otherwise important to caribou in those times of year. These dates will be used to identify AFHRR satellite data representative of corresponding phenology.

Job/Activity 4: Effects of Growing Season Conditions on Forage Quality

Accomplishments: No work was done on this job this year.

Performance of this job requires regularly and locally available Super Cub (or equivalent aircraft) and pilot capable and willing to fly in notorious Alaska Peninsula weather and to make off-field landings in remote locations. Shortly

after this objective was established, the only local pilot willing and able to perform this task moved out of state. Since then, capable, approved pilots have only been available for limited times in late March and early June, and they are based in distant locations requiring 4-hour, one-way ferry times to the study area.

Job/Activity 5: Forage Availability as Affected by Ice Crusts Following Rain-on-snow Events

Accomplishments: No additional work was done on this job, since no additional satellite imagery has been identified which can support this job.

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

IV. PUBLICATIONS

V. RECOMMENDATIONS FOR THIS PROJECT

Job 4 should be discontinued due to unforeseen loss of local aircraft and pilot capable of doing this work.

Job 5 should be discontinued unless additional, necessary satellite imagery becomes available.

Prepared by: William B. Collins

Date: September 1, 2017