

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

Grant Number: W-33

Segment Number: 12

Project Number: 13.01

Project Title: Elk movements and habitat use, Unit 3

Project Duration: 1 July 2010 to 30 June 2015

Report Due Date: 1 September 2014

Principal Investigator: Richard Lowell

Cooperators: Rocky Mountain Elk Foundation

Work Location: Etolin and Zarembo islands in Alaska, GMU 3

I. PROGRESS ON PROJECT OBJECTIVES DURING LAST SEGMENT

OBJECTIVE 1: Delineate summer and winter ranges of elk and identify calving and rutting areas.

Ten of the 11 elk Etolin Island successfully fitted with GPS radio collars in 2011 and 2012, remained “on the air” through at least January 1, 2014. During the report period, research efforts focused primarily on continuing to collect relocation data from the 10 radiocollared elk and retrieval of the 10 GPS collars when they released automatically from elk in winter and spring of 2014.

All 10 GPS collars were recovered, 8 of which released on scheduled, and 2 of which were recovered from elk that had died. Nine of the 10 recovered collars have been submitted to the Regional Office and are currently awaiting download of GPS relocation data stored within. One badly damaged radiocollar recovered from a dead elk was no longer functioning and has been returned to the manufacturer (Telonics, Inc.) in hopes that any relocation data stored within can be successfully extracted.

Efforts to capture and radiocollar additional elk on Etolin and/or Zarembo in spring 2013 were unsuccessful. No attempt was made to capture and collar additional elk in RY2014.

Once relocation data has been downloaded from the 10 GPS collars recovered from the field in RY2014, it will be combined with relocation data collected from 6 previously

collared elk and analyzed to delineate summer and winter ranges of elk and identify calving and rutting areas.

OBJECTIVE 2: Identify habitats that are important to elk.

Complete analysis of GPS data to characterize habitat use by collared elk will be conducted after relocation data has been downloaded from the 10 elk radio collars recovered during the report period.

OBJECTIVE 3: Facilitate locating herds for minimum population estimates and composition counts.

During the report period, we conducted 4 separate overflights of Etolin and Zarembo islands in an attempt to obtain minimum population estimates and herd composition counts.

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

JOB/ACTIVITY a: Capture and radiocollar elk on Etolin and Zarembo islands.

Efforts to capture and collar additional elk on Etolin and Zarembo islands proved unsuccessful in spring 2013. No attempt was made to capture and collar additional elk during the report period.

JOB/ACTIVITY b: Determine seasonal movement patterns of radiocollared elk on Etolin and Zarembo islands.

In March 2013, the department entered into an elk data-sharing agreement with Jean Davidson (a graduate student at the University of Denver, Denver, CO) who conducted a preliminary GIS analysis of available elk relocation data for the purpose of satisfying the academic requirements of her Master's Degree in Geographic Information Sciences. Ms Davidson completed her preliminary analysis in fall 2014.

JOB/ACTIVITY c: Determine seasonal habitat selection patterns of radiocollared elk.

In March 2013, the department entered into an elk data-sharing agreement with Jean Davidson (a graduate student at the University of Denver) who will be conducting a preliminary GIS analysis of available elk relocation data for the purpose of satisfying the academic requirements of her Master's Degree in Geographic Information Sciences. Ms. Davidson completed her preliminary analysis in fall 2014.

Complete analysis of GPS data to determine seasonal movement patterns of radiocollared elk on Etolin and Zarembo will be conducted after relocation data has been downloaded from the 10 elk radio collars recovered during the report period.

JOB/ACTIVITY d: Prepare annual and final reports.

This annual performance report and a brief progress report to the Rocky Mountain Elk Foundation were prepared.

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

During the report period, staff conducted periodic fixed-wing and rotor-wing over flights to determine the status of 10 radiocollared elk on Etolin Island.

Relocation data download from 6 previous radiocollared elk was entered in a database, to which data stored within 10 recently recovered radiocollars will be added. Once relocation data has been downloaded from the 10 GPS collars recovered from the field, all elk relocation data will be merged into a single dataset and analyzed to determine elk home range size, seasonal movement patterns, and habitat selection.

V. PUBLICATIONS

Lowell, R., L. Beier, and C. Koch. 2012. Elk Movements and Habitat Use in Unit 3. Progress report to the Rocky Mountain Elk Foundation. Unpublished report. Alaska Department of Fish and Game, Division of Wildlife Conservation. Petersburg, Alaska.

VI. RECOMMENDATIONS FOR THIS PROJECT

The Minimum Requirements Decision Guide (MRDG) authorizing the department to conduct a limited number of helicopter landings within the South Etolin Wilderness will expire in 2015; thereby preventing future helicopter assisted capture, radiocollaring, and collar recovery efforts within the South Etolin Wilderness. As a result, we currently have no plans to radiocollar additional elk within the South Etolin Island Wilderness. In addition to occupying Zarembo Island and the South Etolin Island Wilderness, elk are also known to inhabit the western lobe of Etolin Island (west of Mosman Inlet), including several smaller associated islands located in Rocky Bay and Three-Way-Passage. Little is known about the distribution, population size or movement patterns of this segment of the Unit 3 elk population. Therefore, future elk research efforts will focus on trying to radiocollar a sample of elk on Zarembo Island and western Etolin Island in an attempt to improve our understanding of those segments of the Unit 3 elk population.

In recent years we have become concerned about the status of the elk herd on Zarembo Island where the population appears to be declining. There are currently no radiocollared elk on Zarembo Island, and to date we have only successfully collared a single animal here. In order to monitor the population status and herd composition in this segment of the Unit 3 population, we should continue to radiocollar 1 or more elk on Zarembo Island.

Prepared by: Richard Lowell

Date: 9/01/2014