

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

**Grant Number:** W-33

**Segment Number:** 11

**Project Number:** 13.01

**Project Title:** Elk movements and habitat use, Unit 3

**Project Duration:** July 1, 2010 to June 30, 2014

**Report Due Date:** September 1, 2013

**Partner:**

Principal Investigator: Richard Lowell

Cooperators: Rocky Mountain Elk Foundation

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

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

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

Although sample size is currently limited, we used ArcGIS software to conduct a preliminary analysis of available GPS location data to delineate elk summer and winter ranges for the 6 radiocollared elk for which we possessed  $\geq 1$  full year of GPS location data. Sample size included 5 cow elk collared on Etolin Island and 1 cow elk collared on Zarembo Island. Although the breeding chronology for GMU 3 elk has not been well documented, we used available GPS location data and information on elk breeding chronology found in the literature to conduct a preliminary assessment of 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 not be conducted until the sample size of collared elk has been increased and additional data has been downloading from GPS collars.

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

Research efforts during the report period focus primarily on increasing the sample size of radiocollared elk in GMU 3, therefore, no attempt was made to conduct composition counts or develop minimum population estimates.

## **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.

We attempted to capture elk during the spring of 2013, but were unsuccessful.

**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 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. Analysis and findings derived from elk relocation data by Ms. Davidson will be provided to ADF&G and may be used or referenced in future ADF&G reports and publications. Ms Davidson expects to have the preliminary data analysis completed by the end of August 2013.

**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, Denver, CO) 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. Analysis and findings derived from elk relocation data by Ms. Davidson will be provided to ADF&G and may be used or referenced in future ADF&G reports and publications. Ms Davidson expects to have the preliminary data analysis completed by the end of August 2013.

**JOB/ACTIVITY d:** Prepare annual and final reports.

This annual performance report and a 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 over flights to determine the status of 11 radiocollared elk on Etolin Island, and remotely download GPS relocation data stored within radiocollars.

Relocation data download from radiocollared elk was entered in a data base for future analysis of 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**

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. We should continue efforts to radiocollar a sample of elk within this segment of the Etolin population in the future.

There are currently no radiocollared elk on Zarembo Island, and to date we have only eecollared 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 efforts to radiocollar 1 or more elk on Zarembo Island.

It is critical that the Minimum Requirements Decision Guide authorizing a limited number of helicopter landings within the South Etolin Wilderness remain in place for the duration of the study, through 2014.

**Prepared by:** Richard Lowell

**Date:** 9/01/2013