

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

Grant Number: W-33

Segment Number: 10

Project Number: 13.01

Project Title: Elk movements and habitat use, Unit 3

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

Report Due to HQ: September 1, 2012

Reporting Period: July 1, 2011 – June 30, 2012

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.
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 ≥ 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.

In August 2011 the department successfully obtained USDA Forest Service authorization to conduct a limited number of helicopter landings within the South Etolin Wilderness in support of GMU 3 elk research efforts. Although inclement weather limited elk capture opportunities, we were able to capture and successfully radiocollar 3 adult cow elk during a 1.5 day favorable weather window in August 2011. We suspended capture efforts in late-August 2011 due to the approach of the September elk hunting season because we wanted to allow elk to resume normal activities and movement patters prior to the start of the season. During a second capture session in February 2012, we successfully captured and radiocollared 2 additional adult cow elk. Finally, during a third capture session in March 2012 we successfully captured and radiocollared 5 additional adult cow elk. The 10 elk captured and radiocollared on Etolin Island during the report period brings the number of elk currently fitted with radiocollars to 11. Attempts to capture and collar elk on Zarembo Island and western Etolin Island were unsuccessful.

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

Not active.

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

Not active.

JOB/ACTIVITY d: Prepare annual and final reports.

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

III. 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.

Having received authorization to land helicopters within the South Etolin Wilderness, in August 2011 we were able to successfully retrieve 2 radiocollars attached to elk in 2009 that became stationary in remote areas. As a result, we were able to confirm the death of 1 collared elk whose collar became stationary in June 2010, and download the remaining relocation data from 1 collar that released on schedule in April of 2011 but was no longer transmitting data. We used ArcGIS software to conduct a preliminary analysis of available GPS location data to identify seasonal use areas and movement patterns for 6 collared elk for which we possessed > 1 full year of GPS location data.

Relocation data download from radiocollared elk was entered in a data base for future analysis of home range size, seasonal movement patters, 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 general, the current sample size of radio-marked individuals is marginal for deriving meaningful inferences about GMU 3 elk populations, habitat selection, and for accomplishing the overall objectives. We need to increase sample size over time in order to properly address management goals.

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.

The radio collar on the 1 elk captured on Zarembo in 2008 released on schedule in spring 2010. As a result, there are currently no radiocollared elk on the island. 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: 9/01/2012