

# FEDERAL AID ANNUAL RESEARCH 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-4 Wildlife Restoration FY2015  
**Project Number:** 12.01  
**Project Title:** Mountain goat population dynamics in southeastern Alaska  
**Project Duration:** 1 July 2010–30 June 2017  
**Reporting Period:** 1 July 2014 – 30 June 2015  
**Report Due Date:** 1 September 2015  
**Principal Investigators:** Kevin S. White, Ryan Scott, Philip W. Mooney, Boyd Porter, David P. Gregovich  
**Cooperators:** Bureau Land Management, City of Sitka, Coeur Alaska, Glacier Bay National Park, U.S. Forest Service  
**Work Location:** Lynn Canal (GMU 1C/1D), Haines (GMU 1D), Baranof Island (GMU 4), Cleveland Peninsula (GMU 1A/1B), Kodiak Island (GMU 8), Alaska

### I. PROJECT OBJECTIVES DURING LAST SEGMENT

**OBJECTIVE 1:** Capture and radio-collar a sample of mountain goats in each study area.

We captured and deployed GPS/VHF radio-collars on mountain goats in Lynn Canal (n = 5), Haines (n = 8), Baranof Island (n = 7) during Aug-Sept 2013. All mountain goats were captured using helicopter darting methods.

**OBJECTIVE 2:** Annually estimate mountain goat population size and composition in each study area.

We conducted aerial surveys during September–October 2013 in order to estimate mountain goat population size and composition (Lynn Canal, n = 2; Haines, n = 3, Baranof, n = 1, Cleveland Peninsula, n = 2). During these surveys mountain goat sighting probabilities were estimated based on data collected from radio-marked mountain goats.

**OBJECTIVE 3:** Monitor reproductive success and survival of mountain goats in each study area.

We conducted aerial surveys in May–June 2014 (Lynn Canal, n = 3; Haines, n = 3; Baranof, n = 2; Cleveland Peninsula, n = 0) to determine kid status of radio-marked adult female mountain goats (Lynn Canal, n = 10; Haines, n = 11; Baranof, n = 10; Cleveland Peninsula, n = 5).

We monitored survival of radio-marked mountain goats (Lynn Canal, n = 27; Haines, n = 34, Baranof, n = 27; Cleveland Peninsula, n = 7) via air-based radio-telemetry surveys and/or from examining GPS-telemetry data. During 2013–2014, we investigated 15 mortality events involving radio-marked mountain goats (Lynn Canal, n = 6; Haines, n = 3; Baranof, n = 4; Cleveland Peninsula, n = 2).

**OBJECTIVE 4:** Determine seasonal habitat selection patterns.

We developed resource selection function (RSF) models using GPS location data collected from 124 mountain goats in the Lynn Canal area. These data were combined with remote sensing covariate data to derive models for the summer and winter periods. Resulting models were validated using the k-fold cross validation technique. Complete technical details are described in White et al. (2012).

**OBJECTIVE 5:** Analyze data and prepare reports.

We prepared annual progress reports detailing activities conducted in Lynn Canal, Haines and Baranof Island, as required by funding agreements with the BLM, Coeur Alaska and the City of Sitka. We also prepared a report describing aerial survey technique development activities to satisfy funding requirements for the USFS. We had two papers accepted in peer-reviewed journals.

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

**JOB/ACTIVITY 1:** Capture and radio-mark mountain goats.

**Accomplishments:** We captured and deployed GPS/VHF radio-collars on mountain goats in Lynn Canal (n = 7), Haines (n = 7) and Baranof Island (n = 5) during August–September 2014. All mountain goats were captured using helicopter darting methods.

**JOB/ACTIVITY 2:** Estimate mountain goat population size and composition.

**Accomplishments:** We conducted aerial surveys during September–October 2014 in order to estimate mountain goat population size and composition (Lynn Canal, n = 2; Haines, n = 3, Baranof, n = 1, Cleveland Peninsula, n = 1). During these surveys mountain goat sighting probabilities were estimated based on data collected from radio-marked mountain goats.

**JOB/ACTIVITY 3:** Estimate reproductive performance and survival of radio-marked mountain goats

**Accomplishments:** We conducted aerial surveys in May–June 2015 (Lynn Canal, n = 2; Haines, n = 2; Baranof, n = 1; Cleveland Peninsula, n = 0) to determine kid status of radio-marked adult female mountain goats (Lynn Canal, n = 13; Haines, n = 14; Baranof, n = 11; Cleveland Peninsula, n = 4).

We monitored survival of radio-marked mountain goats (Lynn Canal, n = 28; Haines, n = 36, Baranof, n = 31; Cleveland Peninsula, n = 5) via air-based radio-telemetry surveys and/or from examining GPS-telemetry data. During 2013–2014, we investigated 15

mortality events involving radio-marked mountain goats (Lynn Canal, n = 8; Haines, n = 2; Baranof, n = 2; Cleveland Peninsula, n = 2).

**JOB/ACTIVITY 4:** Determine seasonal habitat selection patterns.

**Accomplishments:** Data collected from all GPS radio-marked mountain goats were archived in a geospatial database. A two-stage resource selection function (RSF) modeling framework was developed and described in White et al. (2012). Further refinements to the modeling framework (i.e. computer programming) were conducted in 2014–2015. Preliminary RSF analyses of Haines area mountain goat GPS location data were conducted in 2014/2015.

**JOB/ACTIVITY 5:** Data analysis and reporting.

**Accomplishments:** We prepared annual progress reports detailing activities conducted in Lynn Canal and Haines, as required by funding agreements with the BLM and Coeur Alaska. We had two papers accepted for publication in peer-reviewed journals.

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

None.

**V. PUBLICATIONS**

White, K. S., A. Crupi, R. Scott, and B. Seppi. 2014. Mountain goat movement patterns and population monitoring in the Haines-Skagway area, Alaska. Research progress report. Alaska Department of Fish and Game, Juneau, AK.

White, K. S., D. P. Gregovich, G. W. Pendleton, N. L. Barten, R. Scott, A. Crupi and D. N. Larsen. 2014. Mountain goat population ecology and habitat use near the Kensington Mine, Alaska. Research progress report. Alaska Department of Fish and Game, Juneau, AK.

R. Calero-Bernal, E. Van Wilpe, K. S. White, S. K. Verma, C. K. Cerqueira-Cezar, and J. P. Dubey. (*Accepted*). *Sarcocystis oreamni* n. sp. from the mountain goat (*Oreamnos americanus*). Parasitology.

Fieberg, J. R., K. Jenkins, S. McCorquodale, C. G. Rice, and K. S. White. (*Accepted*). Using the same aircraft to capture animals and build sightability detection models: bad idea or much ado about nothing? Wildlife Society Bulletin.

**VI. RECOMMENDATIONS FOR THIS PROJECT**

This project should be continued as described in the study plan.

**Literature Cited**

White, K. S., D. P. Gregovich, G. W. Pendleton, N. L. Barten, R. Scott, A. Crupi and D. N. Larsen. 2012. Mountain goat population ecology and habitat use along the Juneau Access road corridor, Alaska. Alaska Department of Fish and Game. Final Wildlife Research Report ADF&G/DWC/WRR-2012-02. Juneau.

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**Submitted by:** Rodney W. Flynn, Research Coordinator

**Date:** 1 September 2015