

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

**Grant Number:** AKW-10 Wildlife Restoration FY2016  
**Project Number:** 14.28  
**Project Title:** Deciphering wolf diets in Southeast Alaska using stable isotope analyses and prey remains in scats  
**Project Duration:** 1 July 2015–30 September 2018  
**Report Due Date:** 1 September 2016  
**PRINCIPAL INVESTIGATOR:** Gretchen Roffler  
**COOPERATORS:** Taal Levi and Aimee Massey (Oregon State University)  
**WORK LOCATION:** Game Management Units 1-5, Region I, Southeast Alaska

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

**OBJECTIVE 1:** Collect scat samples

**OBJECTIVE 2:** Diet analysis of scats

**OBJECTIVE 3:** Collect samples for stable isotope analysis

**OBJECTIVE 4:** Stable isotope analysis

**OBJECTIVE 5:** Data synthesis and preparation of publications

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

**JOB/ACTIVITY 1A:** We will collect georeferenced and date-specific wolf scats.

**Accomplishments:** During the reporting period we collected 186 wolf scats. The majority were collected in GMU 2 (146), 66 of which were collected during the denning period (15 April – 31 July), 63 during the hair snare monitoring period (1 October – 31 December), and 13 collected during late winter (1 January – 14 April). We also collected 21 samples in GMU 1A, 8 samples in GMU 1C, 8 samples in GMU 3, and 3 samples in GMU 4.

**JOB/ACTIVITY 1B:** We will prepare collected scats for lab analysis, and record collection information in a database.

**Accomplishments:** Samples were stored frozen, and shipped to Oregon State University for analysis. Data were entered into a database.

**JOB/ACTIVITY 2A:** We will characterize food habits by quantifying the relative proportion of prey species consumed by individual wolves based on undigested remains contained in each scat.

**Accomplishments:** Laboratory analysis was underway by the end of the reporting period. Results are pending.

**JOB/ACTIVITY 3A:** We will collect hair and muscle tissue samples from wolves to obtain sufficient representation of different biogeographical areas throughout southeast Alaska.

**Accomplishments:** We coordinated with area biologists, trappers, sealers, and other ADF&G staff to obtain wolf muscle tissue and hair samples from across Region I for stable isotope analyses. On 27 July 2015, we sent 128 wolf samples (59 hair samples, 67 muscle tissue samples, and 2 vibrissae samples) to the University of Wyoming Stable Isotope Facility. We received results from these samples by May 2016.

**JOB/ACTIVITY 3B:** We will collect muscle tissue samples from putative prey species to obtain sufficient resolution to distinguish different prey species from each other in the stable isotope analyses.

**Accomplishments:** We collected samples from 13 beaver (5 from GMU 1A, 3 from GMU 2, 5 from GMU 3, and 4 from GMU 1B), 11 deer (2 from GMU 1A, 8 from GMU 2, and 1 from GMU 3), and 4 small mammals (GMU 1A). We sent these samples to the University of Wyoming Stable Isotope Facility on 27 July 2015, and received results by May 2016.

**JOB/ACTIVITY 4:** We will use a Bayesian stable isotope mixing model approach to analyze the data and to estimate prey species consumed by wolves seasonally.

**Accomplishments:** No work was completed on this objective during the reporting period.

**JOB/ACTIVITY 5:** We will complete data analysis and comparison of data sets from wolves throughout the region, and will prepare final reports and publications.

**Accomplishments:** No work was completed on this objective during the reporting period.

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

We originally proposed to send our scat samples to Pacific IDentifications for mechanical sorting and prey species identification. We instead sent them to Oregon State University Department of Fisheries and Wildlife because they offer a

more economical rate, and because we are also pursuing prey species identification via DNA metabarcoding which they are able to additionally provide.

#### **IV. PUBLICATIONS**

**Prepared by:** Gretchen Roffler, Wildlife Biologist III

**Submitted by:** Anthony Crupi, Acting Research Coordinator

**Date:** 9/1/2016