

**FEDERAL AID  
ANNUAL PERFORMANCE REPORT**

ALASKA DEPARTMENT OF FISH AND GAME  
DIVISION OF WILDLIFE CONSERVATION  
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**Alaska Department of Fish & Game  
Division of Wildlife Conservation**

**Funding Source(s):**

COOPERATIVE ENDANGERED SPECIES CONSERVATION FUND (Section 6 ESA)

75% plus 25% State match = 100%

**Grant Number:** E-19

**Starting Segment Number:** 1

**Project Number:** 1

**Project Title:** Wolf population estimation on Prince of Wales Island, Alaska

**Project Start and Ending Dates:** 30 September 2013–30 June 2015

**Location:** Prince of Wales Island, Southeast Alaska

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**I. SUMMARY OF WORK COMPLETED ON JOBS FOR LAST SEGMENT PERIOD ONLY**

**Objective 1:** To live-capture and radiocollar a sample of wolves on POW.

**Job/Activity 1a:** We will live capture and radio collar at least 2 wolves from each pack within our study area ( $N \geq 18$  each year) during spring and early autumn 2012 and 2013. The radiocollars will be GIS capable and remotely downloadable.

Accomplishments: We conducted wolf capture efforts during the fall of 2013, and the spring of 2014. We used foot hold traps set along the road system with lures used as attractants. Wolf captures are summarized in Table 1. A total of 11 wolves have been radio-collared since spring, 2012, including 4 males and 7 females. Captures accomplished during our reporting period (Sept. 30, 2013 – Sept. 30, 2014) are highlighted.

Table 1. Summary of wolf captures on Prince of Wales Island, Alaska, 2012-2014.

<b>Year</b>	<b>Season</b>	<b>Captures</b>	<b>Males</b>	<b>Females</b>
2012	Spring	3	1	2
2012	Fall	4	1	3
2013	Spring	0		
2013	Fall	1	1	
2014	Spring	2	1	1
2014	Fall	1		1
<b>Total</b>		<b>11</b>	<b>4</b>	<b>7</b>

Captured wolves were chemically immobilized and instrumented with spread-spectrum, global position system (GPS) radio-collars that obtain a location every 2-6 hours.

**Objective 2:** Track and observe the radiocollared wolves and their associated pack members

**Job/Activity 2a:** The radiocollared wolves will be located from fixed wing aircraft bi-monthly and the location data will be downloaded.

Accomplishments: Radiocollared wolves were tracked and the collar location data was remotely downloaded approximately every 2 weeks. During the reporting period we conducted 20 tracking and download flights of 4 radiocollared wolves representing 2 wolf packs within the study area. We downloaded ~2,000 locations for spatial analyses of pack home range size and movement patterns. We also monitored radiocollared wolves and determined their fates and status (Table 2). During the reporting period, one wolf was legally harvested, one wolf was not relocated, and one wolf was lost off the air because its collar blow-off mechanism detonated, as programmed. Additionally, during the last week of September, 2014, one wolf was legally harvested (YF250).

Table 2. Fates, status, and number of days POW collared wolves were tracked as of December 31, 2014.

Wolf ID	Status	Fate	Days tracked
AF430	mortality	illegal harvest	293
AF270	mortality	legal harvest	262
AM310	unknown	disappeared	229
AM260	mortality	illegal harvest	352
AF255	mortality	legal harvest	486
JF465	unknown	disappeared	589
JF495	mortality	legal harvest	152
JM435	unknown	collar blow-off	314
YM330	alive		237
YF250	mortality	legal harvest	168
201401	alive		86

**Job/Activity 2b:** Radio-tagged wolves will enable us to locate each pack during autumn and count their numbers aerially. On sunny days in autumn, we will locate the radiocollared wolves and count individual wolves associated with the radiocollared wolves. We will estimate pack size in our study area. Population estimates derived from those counts are minimum numbers alive because nonresident wolves (dispersers and extraterritorials) likely are not included.

Accomplishments: Radiocollared wolves were monitored throughout the year, and observed along with their pack members to obtain counts visually. This information was

used to estimate a minimum wolf population of 21 wolves in the study area for the fall of 2013.

### **Objective 3: DNA-based population estimate**

**Job/Activity 3a:** We will collect hair from wolves within our study area to obtain DNA useful for estimating population size. We will use scent-post stations to attract wolves to hidden hair collection devices. We will send the hair samples to a genetics lab for determining individual identification.

**Accomplishments:** During the 2013 hair trapping period (Oct. 21 – Dec. 27, 2013), a total of 47 boards at 16 of the 36 hair board nodes (38%) collected wolf hair. Genotyping success (the percentage of samples that successfully amplified and passed quality control steps) was 83% in 2013. Based on individual DNA results we had 33 detections of 21 unique wolves. Eight of these 21 wolves were recaptured after the initial detection.

**Job/Activity 3b:** We will analyze the individual capture histories in the capture-mark-recapture framework to arriving at a population estimate. Population estimated derived from DNA will be compared subsequently with population estimates based on aerial counts.

**Accomplishments:** The density estimate from the top-ranked spatially explicit capture-recapture (SECR) model was  $24.5 \pm 6.8$  wolves per 1000 km<sup>2</sup> with a 95% confidence interval of 14.4 – 41.9 wolves per 1000 km<sup>2</sup>. Extrapolating the fall 2013 density estimate to the study area (1,683 km<sup>2</sup>) results in a population estimate of 41 wolves.

The population estimate for the study area based on the minimum wolf count was 21, 51% of the population estimated by the top SECR model. Accounting for an estimated 29% of the population consisting of nonresident wolves, the actual wolf count data in our study area based on radio-collar data was 27 during the estimation period (66% of the population estimated by the top SECR model).

### **Objective 4: Analyze data and prepare technical reports**

**Job/Activity 4a:** Analyze data and prepare final reports or publications.

**Accomplishments:** We completed this annual progress report.

## **II. PUBLICATIONS**

We completed the following publication:

Division of Wildlife Conservation. 2014. The status and outlook of Southeast Alaska's Unit 2 wolves. Alaska Department of Fish and Game, Wildlife Management report ADF&G/DWC/WMR-2014-2, Juneau.

**III. ADDITIONAL FEDERAL AID-FUNDED WORK NOT DESCRIBED ABOVE THAT WAS ACCOMPLISHED ON THIS PROJECT DURING THIS SEGMENT PERIOD**

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**Date: December 22, 2014**