

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

**Grant Number:** W-33 **Segment Number:** 10  
**Project Number:** 2.15  
**Project Title:** Movement patterns, home range, and habitat use by Sitka black-tailed deer in Southeast Alaska  
**Project Duration:** July 1, 2008–June 30, 2013  
**Reporting Period:** July 1, 2011 – June 30, 2012  
**Report Due to HQ:** September 1, 2012  
**Principal Investigators:** Karin McCoy, Phillip Mooney, David Person  
**Work Location:** Southeast Alaska, primarily Chichagof Island.

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

**Objective 1:** Use GPS collars to collect fine-scale deer movement data.

**Job/activity 1a:** Order collars, purchase animal capture equipment, program collars, review literature, develop a work plan, organize and mobilize personnel.

In 2008, 30 GPS collars were ordered, received, and programmed. Capture equipment was purchased. The literature was reviewed and a work plan developed. A capture permit was received. Personnel began ground captures for the first time in August 2008. In June 2011, 7 new collars were received from the manufacturer. Four of these collars had failed and were replaced by the company at no cost and 3 were refurbished after hunter or winter kills.

**Job/activity 1b:** Conduct ground and aerial based activities instrumental in the collaring of Sitka black-tailed deer and retrieve collars.

Multiple ground capture sessions were conducted every year July 2008-June 2012, but the length of each session has varied depending on personnel availability. In 2008, we collared 1 deer and the collar failed. In 2009, 4 deer were collared and 1 died during the winter. During fall 2010, a commercial contractor was brought down from Fairbanks to conduct aerial net gunning (2 days) due to the lower than expected success with ground captures. A total of 24 deer were collared in 2010: 7 by ground captures and 17 via net gunning. Three of the collars failed. In 2011, 1 deer was collared by ground captures.

As of June 30, 2012, 4 collars had failed, 3 deer were killed by hunters, and 3 deer were killed by winter severity. Seven collars were still on deer in the field for retrieval during August 2012. Nine collars are available for deployment.

**Job/activity 1c:** Monitor snow depths through nearby weather stations and by ground checks of snow conditions.

Snow depths were recorded from nearby existing NOAA weather stations.

**Job/activity 1d:** Identify deer home range characteristics and investigate differences in home range size due to habitat fragmentation.

Some preliminary analyses were conducted from collars retrieved in August 2011. Data will be joined with collars retrieved in 2012 for further analysis.

**Job/activity 1e:** Identify differences in deer movement and activity patterns relative to seasonal use of habitat types and level of POG forest fragmentation.

Some preliminary analyses were conducted from collars retrieved in August 2011. Data will be joined with collars retrieved in 2012 for further analysis.

**Job/activity 1f:** Identify diet and seasonal patterns of deer habitat use.

Some preliminary analyses were conducted from collars retrieved in August 2011. Data will be joined with collars retrieved in 2012 for further analysis.

**Objective 2:** Provide information for public education and outreach.

**Job/activity 2a:** Write annual reports detailing activities and accomplishments to date, including results of animal captures and collar status.

Prepared annual performance reports.

**Job/activity 2b:** Write final report.

Not active. To be accomplished at a later date.

**Job/activity 2c:** Prepare manuscript for submission.

Not active. To be accomplished at a later date.

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

**OBJECTIVE 1:** Use GPS collars to collect fine-scale deer movement data.

**JOB/ACTIVITY 1b:** Conduct ground and aerial based activities instrumental in the collaring of Sitka black-tailed deer and retrieve collars.

Deer capture, radio collaring, monitoring

Although no ground captures had initially been planned, Telonics replaced 4 collars that had malfunctioned. We paid to refurbish an additional 3 collars that we retrieved from hunters and winter mortalities. Those 7 collars, in addition to the 3 that were never originally deployed, gave us 10 collars that we attempted to deploy in the field between July 2011 and June 2012.

July 13-17, 2011: One doe was captured but died of a capture-related mortality (shot in front shoulder but needle punctured through shoulder and rib cage and hit heart).

August 2-10, 2011: One adult doe was captured and collared. Another doe died of a capture-related mortality (twig deflected shot into jugular and deer bleed out).

October 21-23, 2011: One fawn was captured, but not collared due to small size.

March 2-4, 2012: One adult doe died of a capture-related mortality (the dart broke the doe's femur and she died). A fawn was also captured, but deemed too small and frail to capture. It was decided to discontinue winter captures until researchers have obtained a drug that can be reversed. A reversible drug is important during the winter to speed up processing and avoid issues with hypothermia as well as to enable capturing more than one deer a day.

June 18-20, 2012: One adult doe was captured and collared.

At the end of the June 2012, eight collars remained that could be deployed. We will attempt to get these collars into the field by the end of this year.

#### Aerial Surveys and Monitoring:

August 3, 2011. Telemetry survey using a supercub aircraft to locate 23 collars (survey time 3.5 hours). There were 3 collars for which the VHF was still not located (believed malfunction since deployment). Fourteen of 15 collars that should have released were on the ground, as expected, and located for recovery. One collar was located, but was emitting a "successful" signal, indicating it was still on the deer and had not released. Of the remaining 5 collars that were expected to still be operational and on deer, 4 were located on "successful" and one was on "dead battery," indicating it had likely malfunctioned.

August 7, 2011. We used a helicopter to recover collars. Of the 14 collars we expected to be able to recover, 13 collars were recovered using the helicopter. The remaining collar was in the woods and recovered from the ground.

September 2, 2011. A crew of 2 flew over to Hoonah on a scheduled flight and used the road system to recover the collar in the woods, making 14 collar recovered. The 15<sup>th</sup> collar was still emitting a "successful" signal, and appeared to have moved to a new location, indicating it was still on the deer.

January 10, 2012. A telemetry survey was conducted using a supercub aircraft (survey time 2 hrs). The survey attempted to find the signals of 10 collars, 3 of which had not been heard since deployment and were believed malfunctions. The 3 malfunctioning collars were still not heard. The remaining 7 collars were located and emitting a "successful" signal. One of these collars should have released in August of 2011, but apparently was still operational.

May 2012. A telemetry survey was conducted using a supercub aircraft (survey time approximately 2 hours). The survey attempted to find the signals of 10 collars, 3 of which had not been heard since deployment and were believed malfunctions. The 3 malfunctioning collars were still not heard. The remaining 7 collars were heard and located.

Six collars are scheduled to release on August 1 2012. We hope the collar that did not fall off in August of 2011 will also be recovered. We will continue to periodically monitor the remaining collars until they fall off in August of 2013. No collars should remain on deer after August of 2013.

**JOB/ACTIVITY 1c:** Monitor snow conditions

Snowfall data was compiled from nearby weather stations.

**JOB/ACTIVITY 1e:** Deer movement and habitat use

Some preliminary and exploratory analyses were conducted on the collars that were recovered from the field in 2011. The 2011 data will be added to collars that are recovered in 2012 before full analyses are performed. We will begin full analyses after we receive the data from the collars that release in August of 2012.

**JOB/ACTIVITY 2a:** Summary report of the capture activities and project status

We prepared and submitted the annual performance report.

**V. PUBLICATIONS**

None.

**Prepared by:** Karin McCoy

**Date:** 9/01/2012