

**FEDERAL AID  
ANNUAL PERFORMANCE REPORT**

ALASKA DEPARTMENT OF FISH AND GAME  
DIVISION OF WILDLIFE CONSERVATION  
PO Box 115526  
Juneau, AK 99811-5526

***Annual PROGRESS REPORT SHELL AND INSTRUCTIONS***

*The purpose of this report is to summarize significant findings and their management implications for the entire project. This template is based on Federal Aid reporting requirements as found in the Federal Aid Handbook, Chapter 11 <http://wsfrprograms.fws.gov/subpages/toolkitfiles/fah52211.pdf>*

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

**Grant Number:** T-21 **Segment Number: 1**  
**Project Number:** 10.0  
**Project Title:** Distribution, Habitat Use, Activity, and Overwintering Strategies of Bats in Southeast Alaska  
**Project Duration:** 16 April 2011 – 30 June 2014  
**Report Period:** 16 April 2012 – 30 June 2013  
**Report Due Date:** 28 September 2013  
**Principle Investigator:** Karen Blejwas, ADF&G  
**Project Location:** Southeast Alaska (GMUs 1 – 5)

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**IV. SUMMARY OF WORK COMPLETED ON JOBS FOR LAST SEGMENT PERIOD ONLY** *Briefly describe how Federal Aid funds were spent on each active job, listing the results achieved during only this segment period (1 paragraph each). If a job was not accomplished as planned, very briefly tell why.*

**Objective 1:** Assess distribution, relative abundance and trend, habitat use, activity patterns, and timing of migration/hibernation for bats in the Juneau area using active and passive acoustic monitoring.

**Job/Activity 1a:** Survey established transects at monthly intervals during April-September.

**Job/Activity 1b:** Develop a method for monitoring population trend of bats using active acoustic surveys.

**Job/Activity 1c:** Partner with USFS and UAS REU program to sample insect prey along established transects and analyze prey remains in guano collected from known roost sites.

**Job/Activity 1d:** Continue year-round passive acoustic monitoring in Juneau. Rotate detectors at monthly intervals during winter (Dec – Feb) to determine the presence of overwintering bats in different areas (downtown, Douglas, Mendenhall Valley, and out the road).

**Job/Activity 1e:** Expand year-round passive acoustic monitoring to 7 additional communities in Southeast Alaska: Yakutat, Gustavus, Haines/Skagway, Sitka,

Wrangell/Petersburg, Ketchikan, and Craig/Thorne Bay. Partner with federal and state biologists and local naturalists to maintain the stations and download the data.

Accomplishments: We conducted 69 surveys of 17 trails along the Juneau road system between 23 May 2012 and 24 June 2013. During summer, 2012, Karen Blejwas mentored an REU student, Jessica Forbes, who sampled insects using sticky traps and UV lights at 4 sites along Montana Creek. Jessica compared insect abundance and diversity between the 2 methods and correlated abundance to numbers of bats recorded by bat detectors stationed at those sites. We continued to operate a network of 12 SM2Bat bat detectors along the Juneau road system during the report period. These detectors were programmed to monitor between sunset and sunrise each night; 7 were operated year-round and 5 were moved to alternate sites during the winter months (December – February). We deployed 2 additional detectors in the Juneau area during the winter of 2012-13. In addition, we used Anabat SD2 bat detectors to monitor maternity roosts in the Juneau area; 2 were monitored throughout the report period and 5 were monitored beginning in the spring of 2013. We also continued to partner with USFS biologists in Craig, Ketchikan, Wrangell, and Hoonah, NPS biologists in Gustavus and Skagway, and educators in Sitka and Angoon to operate detectors in those communities year-round. We added an additional monitoring site in Yakutat in April, 2013, and we also deployed detectors along 3 transboundary rivers (the Alsek, Taku, and Stikine) and 1 lake (Hugh Smith Lake) in the spring of 2013. Collection and analysis of acoustic monitoring data is ongoing.

**Objective 2:** Identify migration routes and hibernacula locations using radiotelemetry.

**Job/Activity 2a:** Trap bats at 4 locations in the Juneau area (Douglas, downtown, Mendenhall Valley, and out the road) during late summer and attach radiotags to 15 adult bats. Collect tissue samples for genetic analysis.

**Job/Activity 2b:** Obtain daily locations on radiotagged bats using a combination of ground and aerial tracking to identify their migration routes, wintering grounds, and hibernacula sites.

**Job/Activity 2c:** If successful in locating migration routes and hibernation sites in Juneau, repeat at 2 other locations in Southeast Alaska (Sitka and POW) in future years.

Accomplishments: We captured 13 bats at Fish Creek during September 17 – October 1, 2012 and radiotagged 8 of them. We radiotracked the bats nightly from the air when weather permitted, beginning at sunset. We tracked 1 bat to the eastern shore of Admiralty Island on the night of September 27, 2012, but fog prevented us from following her any further. On September 30, we followed a second bat west to Admiralty Island near Bear Creek, where we lost the signal. Three bats left late at night, after we had stopped radiotracking. The radiotags died on the remaining 3 bats while they were still in the Fish Creek area. We captured 142 bats at 5 locations in Juneau (Fish Creek, Dredge Lakes, Auke Lake, Mendenhall Campground, and the Moraine Ecology trail) during 18 April – 30 June, 2013. We radiotagged 24 of those bats, tracked them daily to their day roosts, and used Lotek dataloggers to monitor roost attendance.

**Objective 3:** Develop a regional call library for acoustic identification of bats in Southeast Alaska.

**Job/Activity 3a:** Capture bats during June at identified "hotspots" and in fall in conjunction with the radiotagging (Objective 2a).

**Job/Activity 3c:** Record echolocation calls of captured bats using both frequency-division and time-expansion bat detectors.

**Job/Activity 3d:** Determine which species can be identified using acoustic methods and develop an identification key.

**Job/Activity 3e:** Partner with Canadian bat biologists (Dr. Cori Lausen) to develop a regional call library for northern bats.

Accomplishments: During the report period, we collected reference calls (full spectrum and zero cross) from 26 bats (15 little brown bats, 6 California myotis and 5 Keen's myotis). Dr. Cori Lausen contributed an additional 1,195 full spectrum and 2,642 zero cross reference call files for 9 species found in Alaska and adjacent areas of Canada to the call library. We georeferenced those calls and are currently creating a database to store metadata for all reference call files in the library. We contributed 302 reference call files from 4 species to Wildlife Acoustics for development of their auto-ID software program (Kaleidscope). Collection of reference calls and development of the call library are ongoing.

**Objective 4:** Investigate the presence of cryptic bat species in Southeast Alaska using genetics (Dr. Link Olson).

**Job/Activity 4a:** Collect saliva and/or wing biopsy samples from captured bats (Objectives 2a and 3a) and carcasses of dead bats and submit to Dr. Link Olson at the University of Alaska Museum for genetic identification of cryptic bat species.

Accomplishments: We collected wing biopsy samples from 184 captured bats and wing swab samples from an additional 20 captured bats that will be submitted to Dr. Olson for genetic species identification. The carcasses of an additional 14 bats that were submitted to Dr. Kimberlee Beckmen will be sent to Dr. Olson following necropsy. Collection of biopsy samples and carcasses is ongoing.

**Objective 5:** Coordinate with other WDP, state, and federal biologists to develop and implement a WNS surveillance and response strategy in Alaska.

**Job/Activity 5a:** Revise the current protocols for reporting sick or dead bats to include information about WNS and distribute to other ADF&G, city, state, and federal personnel who encounter sick, injured, orphaned, or dead wildlife or interact with the public on these issues. Submit carcasses to ADF&G wildlife veterinarian Kimberlee Beckmen for disease surveillance.

**Job/Activity 5b:** Coordinate with other state and federal agencies to develop and implement WNS prevention and surveillance measures.

**Job/Activity 5c:** Conduct outreach about bats and WNS to the general public, cavers, other natural resource agencies, and mining, utility, and pest control companies.

Accomplishments: We fielded numerous calls from the public regarding sick or dead bats and submitted 14 carcasses to Dr. Kimberlee Beckmen for disease surveillance. None of the bats tested positive for rabies. Since WNS has not yet spread to western North America and there is continuing uncertainty about how WNS may impact bats in Alaska, no surveillance or outreach efforts have been initiated to date.

**V. PUBLICATIONS**

None

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

None

**II. RECOMMENDATIONS FOR THIS PROJECT**

None

**Prepared by:** Karen Blejwas, ADF&G

**Date:** September 24, 2013