

**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 2015
Report Period: 1 July 2013 – 30 June 2014
Report Due Date: 28 September 2013
Principle Investigator: Karen Blejwas, ADF&G
Project Location: Southeast Alaska (GMUs 1 – 5)

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 47 walking surveys of 15 trails along the Juneau road system during July 3-August 27, 2013. We also completed 5 driving transects in Juneau during July 15-August 14, 2013. We continued to operate a network of 12 SM2Bat bat detectors along the Juneau road system; 10 sites were monitored into November and 2 sites were monitored year-round. In addition, we used Anabat SD2 bat detectors to monitor 5 maternity roosts in the Juneau area; detectors were operated through the end of October, 2013, and were re-deployed in February and March, 2014. Beginning in November, 2013, we deployed 7 SM2Bat detectors at beach sites and 8 on steep, rocky hillsides in the Juneau area to monitor for winter activity in those habitats. We also continued to partner with USFS, NPS, UAS, and ADF&G fisheries and wildlife biologists, as well as school teachers and community members to operate detectors in 13 communities (Cordova, Yakutat, Haines, Skagway, Gustavus, Sitka, Hoonah, Angoon, Wrangell, Petersburg, Port Alexander, Ketchikan, and Craig), along 3 transboundary rivers (Alek, Taku and Stikine) and at 1 remote site (Hugh Smith Lake). All detectors were programmed to monitor between sunset and sunrise each night. 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 6 bats in the Mendenhall Valley and 30 bats at Fish Creek in Douglas during September 9–25, 2013, and radio-tagged 29 of them. We located day roosts of bats daily and used Lotek SRX600 and ATS 4500 dataloggers to monitor roost attendance. We radio-tracked the bats nightly from the air when weather permitted to track them to their overwintering areas and we subsequently located their winter roosts on the ground. We successfully located 4 winter roosts and monitored microclimate conditions (temperature and relative humidity) over the winter using iButton hygrochrons. We deployed a SM2Bat+ bat detector at each roost to monitor activity of hibernating bats over winter and estimate the probable date of emergence from the roost in spring. Three bats hibernated in old rock slide areas on steep forested hillsides and 1 bat roosted in the ground beneath a root wad system. Three bats roosted within 2 km of the capture site on Douglas Island and the 4th roosted 14 km west of the capture site, on Admiralty Island. We did not biopsy bats due to slow healing times during the pre-hibernation period, but we collected wing swabs from 28 bats for genetic analysis.

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 approximately 80 reference calls (full spectrum and zero cross) from 5 species (little brown myotis, California myotis, Keen's myotis, Yuma myotis, and long-legged myotis) at 13 sites in Juneau and southern Southeast Alaska. We are processing and georeferencing those calls to add to our existing call library. The calls will also be shared with interested parties for development of echolocation auto-ID software. 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 146 captured bats and wing swab samples from an additional 28 captured bats that will be submitted to Dr. Olson for genetic species identification. The carcasses of an additional 15 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 >20 calls from the public regarding sick or dead bats and submitted 15 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 16, 2014