

**FEDERAL AID  
ANNUAL PERFORMANCE REPORT**

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

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

**Grant Number:** T-21 **Segment Number: 1**  
**Project Number:** 16.0  
**Project Title:** Population and habitat assessments for CWCS featured species in Southcentral Alaska  
**Project Duration:** 16 April 2011 – 30 June 2014  
**Report Period:** July 1, 2012 - June 30, 2013  
**Report Due Date:** 28 September 2013  
**Principle Investigator:** David Tessler, ADF&G  
**Project Location:** Southcentral Alaska (GMUs 6 – 11 and 13 – 17)

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

***Objectives:** It is anticipated that several species' population and habitat assessments may be accomplished during this project. The following objectives would be components of each species' assessment.*

***Objective 1:** Conduct surveys and/or monitoring of selected species in West and Southcentral and Central Alaska to determine population status, abundance, and distribution of the species.*

***Job/Activity 1a:** Recruit, hire, and train a field crew as necessary to carry out fieldwork. Purchase equipment and arrange charters as necessary to support the fieldwork.*

***Job/Activity 1b:** Conduct surveys and studies using identified techniques. Water-borne, aerial, and ground-based approaches may be employed, depending upon taxa studied. Techniques for birds could include standard North American Breeding Bird Survey roadside counts, Alaska Landbird Monitoring System protocols, line transect surveys, point counts, calling surveys, and specialized techniques as needed to produce accurate and credible information on abundance and distribution. Mammal survey techniques include a variety of visual, aural, and sign (track, scat, hair) surveys with more specialized techniques as needed.*

***Job/Activity 1c:** Conduct genetic analysis where deemed appropriate to determine genetic relatedness, demographics, movements, and distinctiveness of area endemic species.*

Accomplishments:

**Objective 1:** The status of the Little Brown Bat (*Myotis lucifugus*) is unknown in Alaska, but is generally expected to be secure. However, the species is in rapid decline in the core of its range in central North America – and has been petitioned for listing under the Endangered Species Act - as a consequence of massive mortality events at hibernacula as a consequence of White Nose Syndrome (WNS), caused by the novel fungal pathogen, *Geomyces destructans*.

Very little is understood about the distribution, habitat usage, and seasonal movements of bats in Alaska, and it remains unclear whether bats throughout most of the state migrate to other locations for the winter or if they hibernate in place. Locations of summer roosts and winter hibernacula remain almost totally unknown, and it is unclear whether bats throughout most of Alaska use natural substrates (caves and/or mines) for roosts or hibernacula or if they are completely dependent on human structures. This last point is likely a function of the recent natural history of bats in the region and whether or not bats were extant at the time of western cultural contact, or if bats followed western settlement across the region. There are likely different answers to these questions for different populations around the state. The current lack of information on the distribution, habitat associations, life history, and ecology of Alaska's bats represents a serious impediment to their conservation with respect to understanding and managing the consequences of WNS. Due to the potential of anthropogenic vectors to spread the pathogen (contaminated equipment and clothing of individuals frequenting caves and mines), geographic separation between affected and unaffected areas offers little protection against the spread of the disease: it could arrive in Alaska tomorrow. To insure the conservation and continued persistence of bats in Alaska, it is important to focus our attention on delimiting the geographic distribution of summer roosts, maternity colonies, and winter hibernacula. We are developing a collaborative, coordinated project using a suite of methodologies (including citizen science, acoustic monitoring, capture, genetics, disease surveillance, and telemetry) to address these issues across land management jurisdictions across Southcentral, Central, and Western Alaska.

We initiated a study on bat distribution, habitat use, and seasonality in Western, Southcentral, and Central Alaska. The initial effort was a short pilot project to investigate habitat use and seasonality of occurrence in the Anchorage vicinity. The purpose of the pilot is to provide background for a more comprehensive project with a much greater geographic scope to begin in 2014.

**Objective 1: Job/Activity 1a:** Biologists David Tessler and Marian Snively worked with UAA Ecology Professor Douglas Causey to develop a new graduate/undergraduate stacked course titled "Exploration Ecology," and worked with Causey, the students, and US Forest Service staff to conduct novel research on bat distribution and seasonal use in the Anchorage vicinity. Tessler and Snively trained the students on the basics of bat ecology, acoustic monitoring for bats, and how to use the equipment to gather and process echolocation data.

**Objective 1: Job/Activity 1b:** We deployed AnaBat and Wildlife Acoustics ultrasonic detectors at eight (8) study sites along the greater Turnagain Arm corridor, stretching between south Anchorage to Portage Valley. The detectors were deployed from 26

September, 2012 through 24 November 2012, and were used to determine the presence, of bats, relative abundance, and quantify the timing and frequency of bat calls as related to habitat and date. Detectors were checked every 6-7 days at which time and batteries and memory cards were replaced.

**Objective 1: Job/Activity 1c:** We have no progress to report for this objective, however, we anticipate initiated a population genetics component to the full scale bat project beginning in 2014.

***Objective 2:** Identify habitat types and needs associated with the selected species and identify existing or potential problems, needs, or concerns regarding habitats*

***Job/Activity 2a:** Based on results of surveys, identify habitats that are important for population maintenance, especially for those species with indicated declines either on a national level or within the state.*

Accomplishments:

**Objective 2; Job/Activity 2a:** This pilot project was designed to examine possible differences in bat activity along a gradient of density of human structures and between fluvial and palustrine water body types. Preliminary data from the pilot season suggest that in this locality during the fall, that bat activity along rivers and creeks is roughly an order of magnitude greater than over lakes and ponds, although the sample sizes were too small to be statistically definitive. We also found no difference in bat activity by density of human structures (capable of serving as roosting substrates – i.e. buildings) or proximity to them. The links between bat activity and human structures and different habitat associations will be explored more fully beginning in 2014.

***Objective 3:** Examine population dynamics and identify factors limiting population growth or reproductive success, such as predators, habitat loss or degradation, and contaminants*

***Job/Activity 3a:** Where possible, gather supplemental ecological data to accompany population parameters on West and Northwest Alaska vertebrates. These data may include demographic information, predation risks and factors, and habitat preference or avoidance parameters.*

Accomplishments:

**Objectives 3; all Jobs/Activities:** There is no progress to report for Objective 3, although we anticipate that a broader study on bats in Alaska will begin to address this objective in 2014.

***Objective 4:** Analyze, disseminate and share information and data with partners, cooperators, the scientific community, and the general public.*

***Job/Activity 4a:** Analyze data, prepare reports, maps, and associated publications and presentations.*

***Job/Activity 4b:** Attend conferences and workshops and/or write articles to present findings*

Accomplishments:

**Objectives 4; all Jobs/Activities:**

Preliminary analyses of the pilot project data suggested moving water locations had more calls (n=495) than did pond locations (n=41) although the differences were not statistically significant (two tailed, t-test with unequal variance,  $t=0.218$ ,  $8=df$ ,  $\alpha=0.5$ ). The data was not randomly distributed (k-s chi square = 6.45,  $P<0.035$ ,  $df=2$ ). The last week of September had little bat activity at any of the sites, likely due to a strong early season winter storm that left 10cm of snow. Calling was detected at seven of the eight sites with most activity occurring in early October. Activity ranged from 19:00 to 07:00 with most calls recorded between 23:00 and 04:00. The last date calls were detected was 12 October.

The results of this first season of effort were distributed in a report to Chugach National Forest, and were published in the Western Bat Working Group Newsletter, Spring 2013. This project was also featured in the Anchorage Daily News, Sunday 2 December 2012.

No new projects were initiated under this particular Federal Aid Project for this reporting period. Therefore there is no progress to report for the above objectives. Existing projects and workload consumed all available personal time this reporting period. We anticipate that as some existing projects begin to wind down, new projects will be initiated under this project title in the coming reporting period.

**II. PUBLICATIONS**

Tessler, D.F., M.L. Snively, J.K Ilse, D. Causey, M. O'Dell, M. Dzierzynski, and B. Hansen. 2013. Autumn acoustic surveys for little brown bats along Turnagain Arm in South-central Alaska. Western Bat Working Group News, Volume 8, Number 1, pp8-9.

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

**IV. RECOMMENDATIONS FOR THIS PROJECT**

**Prepared by:** David Tessler, ADF&G

T-21-16.0, Population and habitat assessments for CWCS featured species in Southcentral Alaska  
FY13 Annual Progress Report

**Date: September 30, 2013**