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: 8.0

Project Title: Alaska Citizen Science Program

Project Duration: 16 April 2011 – 30 June 2015

Report Period: July 1, 2013 - June 30, 2014

Report Due Date: September 30, 2014

Principle Investigator: David Tessler, ADF&G

Project Location: ADF&G Region II, III, IV, V

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

Objectives:

- *To create a cooperative, coordinated, inter-agency citizen science program to:*
  - *Collect region-wide baseline biological data;*
  - *Use baseline data to construct and implement monitoring;*
  - *Coordinate efforts between the Education, Wildlife Viewing, and Wildlife Diversity Programs at Alaska Department of Fish and Game;*
  - *Develop working alliances between ADF&G and local partners to focus efforts on wildlife diversity issues;*
  - *Pool resources to widen the scope and relevance of selected citizen science research projects;*
  - *Increase programmatic visibility for all partners, and build a constituency to support nongame efforts.*
  - *Provide a mechanism to deliver targeted information and products to the Alaskan public about the conservation of our shared wildlife heritage.*
  - *Provide a mechanism for Alaskan's and their families to participate in a diverse array of wildlife studies.*

Objective 1.
Develop and maintain a coordinated partnership – the Partnership for Citizen Science - of Agencies and institutions to collectively develop and implement the Alaska Citizen Science Program and its projects.

Job/Activity a.: *Meet with partners on regular basis to develop shared priorities for citizen science, develop project ideas, and define roles for executing projects.*

Job/Activity b.: *Meet with and maintain connection to other regional, statewide, and continental citizen science efforts and organizations to maintain current perspective on applications of citizen science; and to follow best practices guidelines for citizen science.*

Accomplishments:

Objective 1. Job/Activity a.:

We held multiple meetings among the original core partners of the Alaska Citizen Science Program to discuss programmatic needs and direction, as well as to plan specific events. Some examples include:

International Migratory Bird Day preparation meetings – 2013 and 2014
Multiple meetings in preparation for 2013 and 2014 International Migratory Bird Day. Meeting partners included Elizabeth Manning, ADF&G Region II Education Program, David Tessler, Marian Snively of the ADF&G Wildlife Diversity Program, and partners from USFWS, Alaska Zoo, Chugach National Forest, Alaska Audubon, and others.

Potter Marsh Days preparation meetings – 2013 and 2014
Multiple meetings and teleconferences in preparation for 2012 and 2013 Potter Marsh Days. Meeting partners included Elizabeth Manning, ADF&G Region II Education Program, Marian Snively of the ADF&G Wildlife Diversity Program, and partners from USFWS, Alaska Zoo, Chugach National Forest, Alaska Audubon, and others.

Objective 1. Job/Activity b.:

We participated in a number of meetings with potential partners and other organizations that deliver citizen science products in order to determine areas of potential overlap, identify shared priorities, and highlight areas in which cooperation and collaboration might be beneficial to all parties in terms of meeting our goals in providing citizen science opportunities to Alaskans. Some examples of these meetings include:

Meetings and webinars with the Alaska Native Tribal Health Consortium (ANTHC) –
April 2014, June 2014
These meetings discussed the possible synergies between the Alaska Citizen Science Program and the Local Environmental Observer (LEO) program of the ANTHC. Northern communities are changing due to environmental impacts, climate change, and development. The LEO Network is an attempt to monitor environmental change in Alaska's remote Native villages as an aid to understanding the risks and benefits of these changes and to assist in community adaptation. The LEOs are local citizen observers who are the eyes, ears and voices of environmental change in these communities. We delivered a series of webinars for the LEO Network on our Alaska Citizen Science Program and its constituent projects, and LEO partnered us to insure LEO members will contributing observations of bats and frogs from Alaska Native communities around the state.

Meetings with Alaska Audubon and US Fish and Wildlife Service –
November 2013, January 2014, and March 2014
These meetings discussed Alaska Citizen Science Program in general, and how it might interface with upcoming research projects in the Anchorage Bowl focusing on declining Boreal wetland

bird species – specifically titled Boreal Birds and Bogs. We developed a strong Citizen Science component for an upcoming research initiative examining declining boreal birds and their habitats in the Anchorage area. The research project focusses on Lesser Yellow Legs, Rusty Blackbird, and Olive-sided flycatcher and will identify important wetland features for conservation and will track birds during migration and identify habitats for conservation at key stopover and wintering areas, allowing conservation on lands in Alaska to be directly linked to conservation throughout these species' annual ranges. The project enlists citizen scientists in monitoring efforts both on the breeding grounds in Anchorage and the non-breeding destinations that we track our birds to. In Anchorage, local citizen scientist volunteers will survey wetlands and locate birds for geolocator deployment and subsequent recapture, (conducted by agency biologists) and will conduct repeated bird surveys at specific wetlands with historical baseline data from the 1980s, 1990s, and 2000s. Some of these wetlands have undergone considerable change and development while others remain pristine. On the wintering grounds, we will summarize bird observations submitted to the citizen science program eBird (http://ebird.org) to give us insight on the habitats these species use at the stopover and overwintering regions identified by the geolocators. The combination of targeted research and citizen science will 1) identify local wetlands in Anchorage that remain important to these declining species and those which have been altered to the point that they no longer support substantial numbers of these species; 2) identify important wetland features for conservation and levels of fragmentation that reduce bird numbers and lead to local extirpation; and 3) illustrate the migratory pathways that link wetland birds breeding in Alaska to locations throughout the western hemisphere. This work will be conducted in partnership with several agencies and conservation groups including U.S. Air Force, U.S. Army, Alaska Department of Fish and Game, Canadian Wildlife Service, Cornell Laboratory of Ornithology, National Audubon Society, Smithsonian Institute, University of Alaska Anchorage, U.S. Geological Survey, U.S. Fish and Wildlife Service.

Objective 2.
Develop and implement distinctive Citizen Science projects that encourage broad public participation to collect useful baseline data that informs basic understanding of species distribution, abundance, life history, and/or habitat associations.

> ***Job/Activity a.:*** *Develop/implement projects based on species priorities defined in the AWAP, with information needs easily addressable with citizen science.*
>
> ***Job/Activity b.:*** *Solicit volunteers throughout the state to collect specific data on the target species using a variety of marketing alternatives and media outlets.*
>
> ***Job/Activity c.:*** *Collect, quality control, curate, and analyze data. Share data and analyses with state land managers, partners, and the public. Contribute data to statewide database initiatives to facilitate discovery and use in land use planning. Geographically linked data will be submitted to the University of Alaska Museum and the Alaska Natural Heritage Program for inclusion in their GIS linked conservation database each Fall.*

Job/Activity d.: *Use and promote the use of collected data whenever possible to inform more intensive and directed research on AWAP priorities and conservation actions than are appropriate for citizen science.*

Job/Activity e.: *Report project results back to volunteers on an annual basis and thank them for their participation.*

Job/Activity f.: *Report findings whenever appropriate in agency reports or in peer reviewed journals and at professional meetings.*

Accomplishments:

Objective 2. Job/Activity a.:

We continue to expand the reach of the Alaska Citizen Science Program and deliver a number of of distinctive projects that address information needs identified in the Alaska Wildlife Action Plan (or CWCS):

- The Alaska Wood Frog Monitoring Project;
- The Alaska Bat Monitoring Project;
- Alaska Loon and Grebe Watch;
- The Alaska Wetland Climate Change Project (AWCCP);

Each target species group or project has a unique set of information objectives, methodologies, and target audiences. We expect to include additional target species and projects in the Alaska Citizen Science Program in the coming years. These projects target baseline data needs for these four specific species or groups of species.

Objective 2. Job/Activity b.:

We conducted public programs at various civic and educational venues around the state. We held programs in: Kotzebue, Fairbanks, North Pole, Salcha, Wasilla, Palmer, Anchorage, Soldotna, Homer, and Yakutat.

We also used free local radio Public Service Announcements, notices in local newspapers and community calendars, and leveraging our websites, we informed Alaskans throughout the state of the existence of the Alaska Citizen Science Program and the various opportunities to participate.

Objective 2. Job/Activity c.:

All survey data collected from 2013 have been entered and quality controlled. Data from 2014 have yet to be entered and quality controlled. Data will be analyzed in winter 2014-2015.

Objective 2. Job/Activity d.:

Quality controlled data from all constituent citizen science projects through 2012 have been shared with the Alaska Natural Heritage Program (AKNHP) for inclusion in statewide databases that track wildlife occurrence through space and time. These data have also been incorporated in that statewide Alaska GAP analysis effort conducted by AKNHP; GAP is an advanced effort to model the distributions and habitat of all terrestrial vertebrates in the state. Data are included in

the AKNHP BIOTICS conservation database, and spatial data from BIOTICS may be viewed and downloaded at http://aknhp.uaa.alaska.edu/maps/biotics.

Data from 2013 and 2014 will be uploaded to AKNHP and BIOTICS winter 2014.

Data from the Alaska Bat Monitoring Program on the locations of bat roosts and maternity colonies has guided the location of study areas in a new research project: "Addressing the Conservation Risks of White-Nose Syndrome and Wind Energy Development for Alaska's bats, and Assessing Bat Related Human Health Concerns: A Coordinated Research Approach." See Federal Aid Interim Project Report for T-21-1-16.0, "Population and habitat assessments for CWCS featured species in Southcentral Alaska" for more information.

Objective 2. Job/Activity e.:
In December 2013 we mailed every citizen science participant a "Thank You" letter which included a synopsis of the program each volunteer participated in, and described the results from the previous year in the context of contribute to answering the fundamental questions the projects were created to address.

Objective 2. Job/Activity f.:
We were invited by the conveners of the 7th Western Alaska Interdisciplinary Science Conference and Forum in Kotzebue to present a talk on the importance of Traditional Ecological Knowledge and Local Native Knowledge in informing the Alaska Citizen Science Program and its constituent projects.

Tessler, D.F., M.L. Snively, T.A. Gotthardt. 2014. Traditional ecological knowledge and citizen science yield new insights on the distribution, ecology, and overwintering behavior of the little brown bat (*Myotis lucifugus*) in Alaska. Poster presented at the 7th Western Alaska Interdisciplinary Science Conference and Forum, Kotzebue, AK. April 2014.

We published a peer-reviewed paper on the results of the Alaska Bat Monitoring Program for in the Northwest Naturalist. The paper was reviewed and was recommended for publication after revisions were completed.

Tessler, D.F., M.L. Snively, T.A. Gotthardt. 2014. New insights on the distribution, ecology, and overwintering behavior of the Little Brown Bat (Myotis lucifugus) in central, northern, and western Alaska. *Northwestern Naturalist* 95(3) pp TBD, *accepted 10 February 2014.*

Objective 3.
Deliver a range of education, outreach, and participation opportunities for the wider Alaska public, and insure citizen science opportunities and educational products exist in rural areas away from the railbelt as well as for communities on the road system.

> ***Job/Activity a.:*** *Develop, update, and revise a range of age-appropriate public/school presentations and lectures specific to each of the citizen science target projects, insuring there are programs suited to grade schools, middle schools, high schools, and the adult Alaskan public.*

Job/Activity b.: *Present public education/outreach programs and lectures on citizen science target species in communities and schools on and off the road system.*

Job/Activity c.: *Develop supplementary education and outreach materials for distribution through a variety of forums and media outlets that convey the important conservation issues relating to the citizen science target species and that promote public involvement in citizen science (such as: activities, lesson plans, instructional materials, educational posters, newspaper stories, magazine articles, books and booklets), and insure schools and communities on and off the road system have access to these materials.*

Job/Activity d.: *Develop and maintain websites for each of the citizen science projects that describe the biology of the target species, the nature of each citizen science project, how to become involved and conduct projects, and how to submit data. The web sites should also answer common questions and provide direction to additional information resources, and report results of previous years.*

Accomplishments:

Objective 3. Job/Activity a.:

We continue to distribute the four excellent educational posters (wood frogs, Alaska's amphibians, Alaska's bats, and loons and grebes) that we developed to schools and youth groups throughout the state. In this reporting period we distributed 127 sets of these posters. Over 600 classrooms have received these posters to date.

Objective 3. Job/Activity b & c.:

We conducted 167 public presentations from 1 July 2013 to 30 June April 2014 reaching over 2452 adults and children.

For logistical reasons, most of our public and school presentations occur in the greater Anchorage / Matanuska-Susitna region. However, we have made a concerted effort to serve a broader range of Alaskan communities around the state. In this reporting period We held programs in: Kotzebue, Fairbanks, North Pole, Salcha, Delta Junction, Tok, Wasilla, Palmer, Anchorage, Soldotna, Homer, and Yakutat.

We also participated in five regional Citizen Science Events (Potter Marsh Days, a kick off for No Child Left Inside, Alaska Forum on the Environment, and International Migratory Bird Day among them) reaching upwards of 2,000 people with our public programs and information booths.

We worked with ADF&G Wildlife Education Specialist to develop and deliver a 15 hour graduate-level teacher workshop for recertification purposes. The course was offered through the University of Alaska Anchorage, College of Education, Department of Professional and Continuing Education. The course, ED580, titled, "Alaska Wildlife Curriculum Workshop: Citizen Science - Bats and Frogs" was offered Spring Semester 2014. The course had 23 middle and high school teachers enrolled and received excellent evaluations from all participants. One objective of the course was to build bat houses for

installation at schools for ongoing monitoring related tied to biology and life sciences courses.

We answered dozens of email and telephone requests from around the state for information on our projects. We continue to provide "Do Not Disturb – Bird Nesting Area" signs to landowners and land managers to protect floating or shoreline nests of loons and grebes. We continued the free distribution of the popular "Landscaping for Wildlife" brochure in nurseries and greenhouses throughout Southcentral Alaska. Each of our projects has been the subject of numerous stories in local newspapers in Anchorage, Turnagain, Kenai, Wasilla, Homer, and Fairbanks. We continue to do radio interviews on local radio stations and utilize radio public service announcements to reach out to people in communities off the road system. All partner organizations are represented on our programmatic web pages and in all distributed materials, including informational handouts, survey instructions, data sheets, and educational posters.

Objective 3. Job/Activity d.:

For each project, we updated and revised the background materials, handouts, powerpoint presentations, school activities, web-sites, data sheets, and instructions to volunteers, to reflect changes in the projects and advances in knowledge. We have been working to revise and update our web pages and our electronic data sheets to make it easier for the public to find information, and more convenient to submit their observations.

We continue to maintain and update four programmatic websites (www.akcitizenscience.net, www.akbats.net, www.akfrogs.net, and www.akloonwatch.net) that receive substantial traffic. In February of 2011 we began to migrate these websites from their previous home on servers at the Alaska Natural Heritage Program to servers at ADF&G. The migration and redesign of the new pages was completed in April 2014. We are continually updating content for all projects.

II. PUBLICATIONS

Tessler, D.F., M.L. Snively, T.A. Gotthardt. 2014. New insights on the distribution, ecology, and overwintering behavior of the Little Brown Bat (Myotis lucifugus) in central, northern, and western Alaska. *Northwestern Naturalist* 95(3) pp TBD, *accepted 10 February 2014.*

Conference Presentations

Tessler, D.F., M.L. Snively, T.A. Gotthardt. 2014. Traditional ecological knowledge and citizen science yield new insights on the distribution, ecology, and overwintering behavior of the little brown bat (*Myotis lucifugus*) in Alaska. Poster presented at the 7th Western Alaska Interdisciplinary Science Conference and Forum, Kotzebue, AK. April 2014.

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

Date: September 26, 2014