

**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 2014
Report Period: July 1, 2012 - June 30, 2013
Report Due Date: September 30, 2013
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 it's 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 – 2012 and 2013

Multiple meetings in preparation for 2012 and 2013 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 – 2012 and 2013

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 with Alaska Audubon and US Fish and Wildlife Service –
August 23, 2012, January 30, 2013, and March 28, 2013

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. Over the year 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 have initiated this program with a number 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 three specific groups of species:

- The Alaska Wood Frog Monitoring Project.
 - Document the presence and approximate number of wood frogs in specific lakes.
 - Expand the range of project coverage to include Interior and Southcentral Alaskan Communities not served previously.
 - Characterize habitats important to wood frog reproduction.
- The Alaska Bat Monitoring Project.
 - Document bat presence and identify roosting sites and maternity roosts in particular communities, locations, structures, and habitats.
 - Identify and investigate potential winter hibernacula.
 - Provide data necessary for an expanded project examining seasonality of habitat use, wintering concentrations, migration, and population structure.
- Alaska Loon and Grebe Watch
 - Collect baseline data on the distribution of Red-necked and Horned Grebes on lakes in Southcentral Alaska.
 - Determine nesting densities on lakes supporting grebes.
 - This project will provide data that will support development of an ongoing monitoring project
- Alaska Wetland Climate Change Project
 - Collect data on physical characteristics (water depth, air and water temperature, pH, conductivity, dissolved organic matter) of wetlands along a latitudinal transect, including sites in Wiseman, Fairbanks, Tok, Talkeetna, Willow, and Anchorage.
 - Collect additional physical information about the site (timing of melt off, timing of green-up, wetness, wetland connectivity, net primary productivity, using a variety of remote sensing satellite platforms.
 - Collect data on the birds and amphibians that depend on these wetlands. Data includes presence, arrival time, breeding phenology, relative abundance.
 - Identify patterns of physical and climatic parameters influencing biological response variables, and make comparisons between years and between sites.

Objective 2. Job/Activity b.:

Using 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. In this reporting period we had participation by 95 citizen science volunteers (61 for Bats, 8 for Frogs, and 26 for Loons and Grebes) who conducted wildlife surveys in 180 locations around the state: 48 locations were monitored for Loons and Grebes, 93 locations were surveyed for bats, and 39 wetlands were monitored for frogs. The majority of volunteers were near Southcentral population centers, but we did have volunteer participation from around the state.

Objective 2. Job/Activity c.:

All survey data collected from 2012 have been entered and quality controlled, Data will be analyzed with 2013 data and data from previous years in winter 2013-2014.

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>.

Objective 2. Job/Activity e.:

In December 2012 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 Alaska Forum on the Environment February 2013 to present a talk on the Alaska Citizen Science Program and its constituent projects and the novel information and results it is generating.

Tessler, D.F., M.L. Snively, T.A. Gotthardt. The Alaska Citizen Science Program: 10 years of unlocking the secrets of Alaskan wildlife with the help of Alaska’s Citizen Scientists. Invited paper at the 2013 Alaska Forum on the Environment, Anchorage, AK. February 2013.

We submitted a peer-reviewed paper on the results of the Alaska Bat Monitoring Program for publication 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. New insights on the distribution, ecology, and overwintering behavior of the Little Brown Bat (*Myotis lucifugus*) in central, northern, and western Alaska. Northwest Naturalist, *In Review*.

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 69 sets of these posters. Over 500 classrooms have received these posters to date.

Objective 3. Job/Activity b & c.:

We conducted 118 public presentations from 1 July 2012 to 30 June April 2013 reaching over 3,337 adults and children. Broken down by constituent project we conducted 57 wood frog presentations with 1,635 participants, 56 bat presentations with 1,579 participants, and 5 loon and grebe programs reaching 123 individuals.

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 provided public programs in Homer, Soldotna, Seward, Anchorage, Girdwood, Eagle River, Sutton, Wasilla, Talkeetna, Fairbanks, Copper Center and Glennallen.

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 answered hundreds 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 is still not complete. We are currently updating content for all projects and plan to have all the redesign on the new pages complete by winter 2012/2014.

II. PUBLICATIONS

Tessler, D.F., M.L. Snively, T.A. Gotthardt. New insights on the distribution, ecology, and overwintering behavior of the Little Brown Bat (*Myotis lucifugus*) in central, northern, and western Alaska. *Northwestern Naturalist*, *In Review*.

Conference Presentations

Tessler, D.F., M.L. Snively, T.A. Gotthardt. The Alaska Citizen Science Program: 10 years of unlocking the secrets of Alaskan wildlife with the help of Alaska’s Citizen Scientists. Invited paper at the 2013 Alaska Forum on the Environment, Anchorage, AK. February 2013.

**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, 2013