

FINAL REPORT

State: South Dakota

Grant Number: 13-600-054

Project Title: Recruitment and training of South Dakotan citizen scientists for FrogWatch USA

Period Covered: 7/1/2013 to 1/1/2015

Amount Obligated: \$4,809

Actual cost to date: \$4,809

Report prepared by: Jacob Kerby and Spencer Siddons

Background information:

Citizen science has recently gained traction as a means to obtain important information on sensitive species in a region while simultaneously engaging community members to better understand the natural world around them (Leiserowitz and Fernandez 2008). A key component for the success of these projects is both organization and leadership. This project has leveraged a larger effort and infrastructure of a national organization to initiate an amphibian based monitoring program across the state of South Dakota. Currently, there is limited data available to the state regarding amphibian populations, particularly in more remote areas of the state (Kiesow 2006). We have worked with the national coordinator from FrogWatch USA, a nationwide citizen science program designed to help monitor amphibian populations. There currently exists an accessible database to South Dakota citizens allowing them to report species present within the state. Unfortunately, not a single entry was recorded in 2012 despite there being 28 volunteers registered in the online database (*pers comm*- Rachel Gauza). The major focus of the grant was to encourage the creation of a FrogWatch regional chapter in South Dakota to initiate a focused effort to encourage volunteers to participate. This effort included training citizens on recognizing amphibian species calls while also educating them about amphibian conservation.

This project addressed two important needs, to educate the general public about amphibians and amphibian conservation and to create a citizen science network to monitor local populations. The initial effort in the first year required substantial effort to establish an awareness of the project and initiate the necessary infrastructure across the state. Funding was required for a project coordinator to dedicate time and effort for the recruitment and training of volunteers. Once this was setup, these volunteer groups served an important need of monitoring amphibian populations across the state this year, and for many years to come with minimal time and effort. The data collected are of great importance as little is known about how several aspects of global climate change might alter South Dakota amphibian populations (Blaustein and Kiesecker 2002). In addition to global climate change, issues of flooding and drought, increased installation of tile drains in agricultural areas and the increased potential for fracking and metal mining provide

many unknown potential impacts to amphibian species. Finally, an important need to establish a source of information for amphibian conservation in the state that is easily accessible to provide better information regarding amphibian conservation in South Dakota has been addressed.

Objectives:

- Train individuals in amphibian call recognition and proper survey techniques.
- Establish a series of citizen science based FrogWatch groups in the state to improve our knowledge of South Dakota amphibians.
- Submit a report detailing species presence at sites across South Dakota.
- Establishment of website to better inform general public about South Dakota amphibians.

Project Methods: This grant funded efforts in South Dakota to recruit and help train citizen scientists across the state in frog call recognition and proper recording of findings. The details and protocols for site selection and monitoring can be found at the website: <http://www.aza.org/current-frogwatch-volunteers/>. The national coordinator, Rachel Gauza, held a training at USD to certify over twenty potential future coordinators for data collection and training of citizens across the state. From this training, coordinators are able to train private citizens in proper recognition and recording of data. These trainings were held in 2014 and are planned for 2015. Additionally, we designed a website for the project to recruit and inform potential citizen scientists. This website allows trainees access to the necessary materials for data collection. It also hosts resources to help in the recognition of various calls across South Dakota. Finally, it serves to recruit additional members. The data submitted by citizens is able to be uploaded and incorporated into current distribution maps of several species.

Results:

All objectives of the study were met. A Great Plains Chapter was established with several participants submitting data. The submission rates were very low though, and efforts to sustain interests throughout the summer will be encouraged via social media. Nonetheless, there are groups established in Vermillion, Sioux Falls, and Brookings committed to FrogWatch efforts in the upcoming years. In accordance with scientific permitting, we have also reported and continue to report details on species found at various locations across the state. As FrogWatch members increase their reporting, maps will be incorporated into the new website.

Over the course of the funding, three successful coordinator training sessions have been conducted with over 40 participants from South Dakota, Nebraska, Iowa, Minnesota, and North Dakota. This has led to the direct establishment of a Frog Watch chapter in Eastern South Dakota and potentially to a second chapter being established in Western South Dakota. A formal training session was held in Vermillion, SD on May 12, 2013 to aid in the establishment of several South Dakota chapters. Additionally, volunteer training sessions were held on April 29, 2014 and May 4, 2014 in Vermillion, SD and at the Great Plains Zoo (Sioux Falls), SD, respectively. FrogWatch USA funded the workshop and provided some support for participant travel. Recruitment of citizens from the western side of the state was aided by travel support from this grant. Three more trainings are planned for the spring of 2015 with an additional

coordinator from Brookings being added to the effort. This will result in additional citizens being incorporated from the Vermillion, Sioux Falls, and Brookings areas.

The website: www.dakotaherps.org was created and is undergoing continual revision. Currently, all calling species of South Dakota species are listed along with videos of individuals from each species. We are currently in the process of updating a second site, www.sdherps.org, with detailed descriptions of each species to create an online field guide that is easily accessible to South Dakota citizens. Also, in conjunction with the National Park Service, an amphibian brochure is being developed for field identification use.

Finally, due to Dr. Kerby's involvement in the program, he has filmed a segment as an expert scientist on the national PBS kids show, SciGirls. The episode highlights the importance of Frogwatch citizen science and provides national recognition to conservation efforts in South Dakota. The episode is to air in April 2015.

Future Work:

Citizen groups are being continually recruited with trainings planned for March and April of 2015. Also, we intend to contact previous volunteers from our chapter to attend training sessions for a refresher on protocols and frog calls. As this effort is still only beginning, there will likely be significant growth over the next few years. This funding provided the necessary support to begin this important effort. The goal is to establish a new chapter on the west side of the state in the upcoming year.

Dissemination of information

A poster of FrogWatch USA and our chapter goals was presented at the 2014 University of South Dakota IdeaFest Symposium. Initial results will be presented at the 2015 meeting of the Dakota Amphibian and Reptile Network meeting. In addition, students from my laboratory will attend National herpetological meetings in the summer of 2015 where they will report early results from our efforts in presentations given at these meetings. Results that emerge from this project will also be included in future manuscripts submitted to peer reviewed journals.

REFERENCES

Blaustein, A. and J. Kiesecker, *Complexity in conservation: lessons from the global decline of amphibian populations*. Ecology Letters, 2002. 5(4): p. 597-608.

Gauza, Rachel. *Personal communication*. National Coordinator FrogWatch USA. Email correspondence- February 11, 2013.

Kiesow, A., *Field Guide to Amphibians and Reptiles of South Dakota*. South Dakota Department of Game, Fish and Parks, 2006.

Leiserowitz, A. and L. Fernandez, *Toward a new consciousness: values to sustain human and natural communities*. Environment: Science and Policy for Sustainable Development, 2008. 50(5): p. 62-69.