

ASSOCIATION
OF ZOOS &
AQUARIUMS

FROG
WATCH USA™

FrogWatch USA: Using a Chapter Model to Build a Community of Citizen Scientists

Rachel Gauza* and Arslan Ahmad

Association of Zoos and Aquariums

8403 Colesville Road, Suite 710, Silver Spring, MD 20910

*frogwatch@aza.org



FrogWatch USA™ Infrastructure

Background

FrogWatch USA™ is a citizen science program of the Association of Zoos and Aquariums (AZA) that provides individuals, groups and families with an opportunity to learn about wetlands in their communities and report data on the calls of local frogs and toads to help conserve species and supporting habitats in the United States.

A network of chapters

AZA assumed management of FrogWatch USA in 2009 as part of its long-term commitment to amphibian conservation and initiated a chapter model in 2010. Local chapters are hosted by AZA-accredited zoos, aquariums, and other like-minded organizations. More than 100 chapters have been established in 39 states and the District of Columbia (Figure 1).



Figure 1. Map of 116 FrogWatch USA chapters established in 2010 through August 2014 generated using National Geographic's FrogWatch-FieldScope (<http://frogwatch.fieldscope.org/v3>).

Trained coordinators are community leaders

At least one coordinator per chapter receives training via in-person or online courses, and AZA offers one-on-one support and a variety of networking and continued learning opportunities. The result is a network of prepared leaders that recruit, train, and support volunteers from their local communities, thereby ensuring that volunteers receive a personalized experience and that the data are high quality and scientifically viable.

Acknowledgements



NATIONAL
GEOGRAPHIC

We are grateful to FrogWatch USA chapter coordinators and volunteers past and present for their participation and dedication, for without them the program is not possible. Thank you to Shelly Grow, AZA Director of Conservation Programs, for pioneering efforts and continued support for the program, and for her thoughtful review of this poster. Finally, we extend our gratitude to the funding agency supporting program expansion from 2010 - 2015, the National Science Foundation, Grant No. DRL-1010749. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation. Image credits: Dick Bartlett (Carpenter Frog) and Rachel Gauza (others).

Local Chapters Promote Data Quality & Usability

Chapter volunteers better adhere to the monitoring protocol

Data from FrogWatch USA's standardized protocol (Figure 2) are:

- Submitted online (1999-2009; 2014-present) or to a national office (2010-2013);
- Approved when specified monitoring duration and evening session protocol requirements are met;
- Hidden and dropped from analyses when protocol is not followed, or are otherwise flagged in the online system.

Protocol adherence was variable over time, but reached its all time high (94.8%) under AZA management and the chapter infrastructure (Figure 3). Localized volunteer training where volunteers learn the necessity of following a protocol and are provided with multiple opportunities to build confidence with accurate species identification, along with proactive data review measures, have been instrumental to program success.

Trained volunteers provide long-term monitoring data that can fill knowledge gaps and inform amphibian conservation efforts

- More than 3,500 volunteers received training from chapters between 2010-2013 on proper data collection and submission procedures and learned about amphibian and wetland conservation. Nearly 180 volunteer training sessions were held in 2014; annual reports to be submitted in October will provide numbers of volunteers trained.
- The average and median number of visits to an individual site has increased under AZA and chapter leadership (Table 1).
- New registered sites, monitoring observations, and species range and phenology information, both nationwide and on more local scales, are added every year (Figure 4).

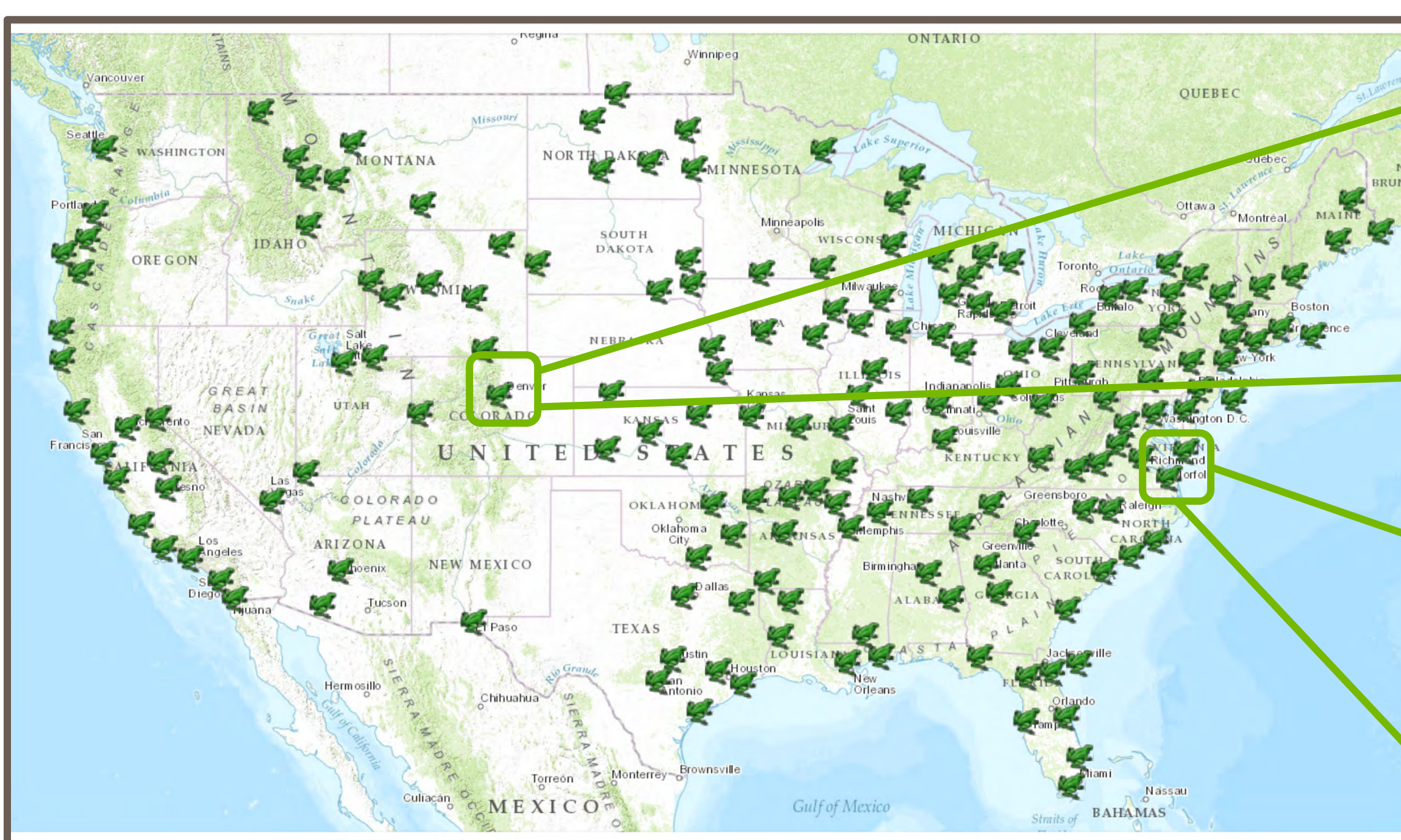


Figure 4. Map of registered FrogWatch USA wetland sites generated using FrogWatch-FieldScope (<http://frogwatch.fieldscope.org/v3>) on 31 August 2014. The callout boxes highlight two examples of the positive influence chapters had in providing quality data on local frog and toad populations and creating opportunities for new community partnerships.

FrogWatch USA Monitoring Protocol

Listening monitoring observations: are:

- Conducted no earlier than 30 minutes after sunset (and end by 1:00 AM);
- Initiated with a two-minute acclimation period;
- Exactly three minutes in duration; and
- Made as frequently as possible throughout the peak frog and toad breeding season (generally February - August).

Figure 2. The straightforward, standardized FrogWatch USA protocol permits data comparability over time and geographic location.

Table 1. Summary of FrogWatch USA monitoring visits. A minimum of four observation visits per site annually is recommended for trend analysis.

Year Range	Median Visit Range	Mean Visit Range
1999-2003	2-5	9-10
2004-2009	3	8-10
2010-2014*	5-10	12-20

* - 2014 data are still being received.

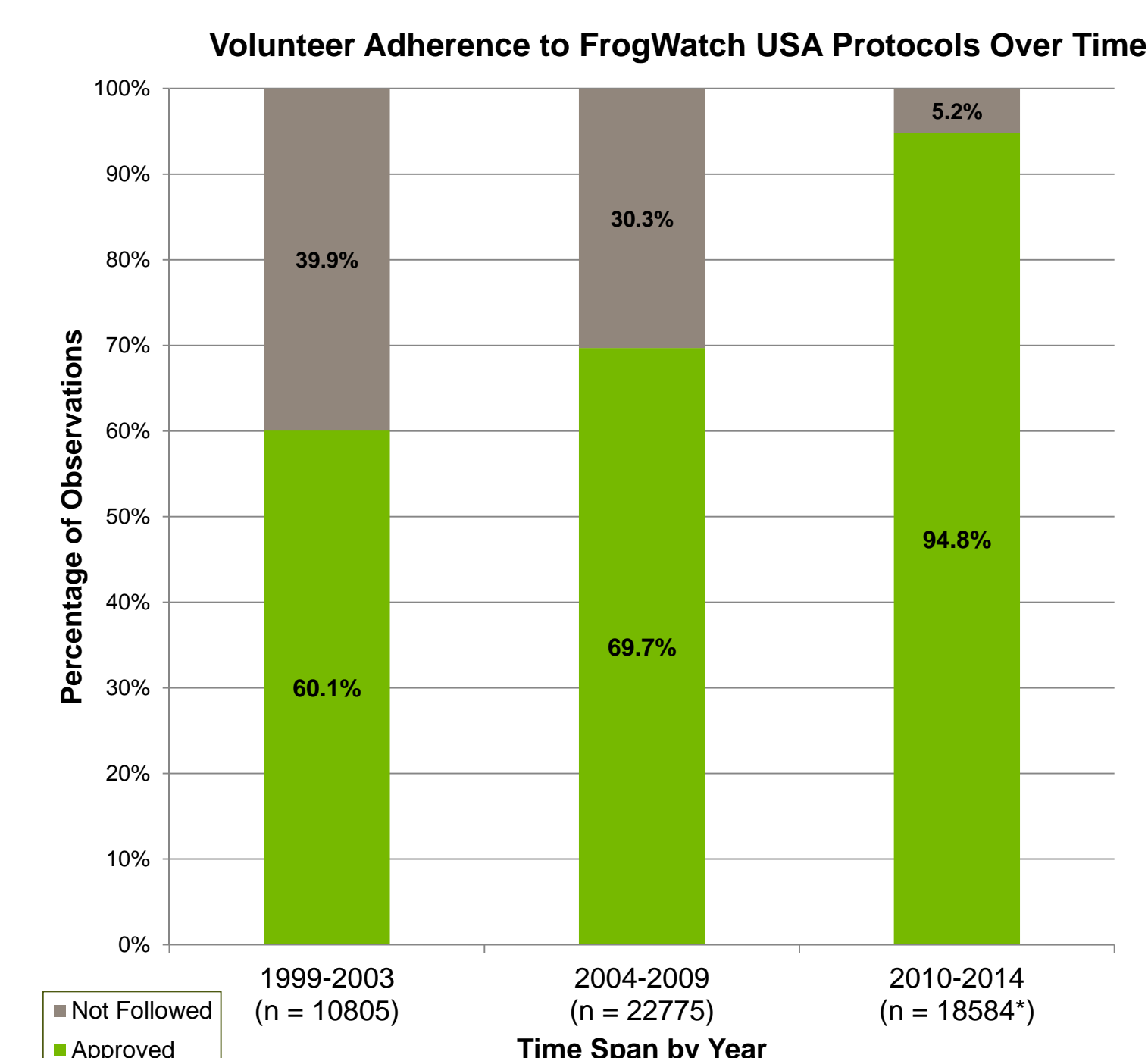


Figure 3. Frequency of adherence of monitoring observations to standard protocol. Percentage of adherence ranged from 49.0-64.9% in 1999-2003; 59.9 - 74.8% in 2004-2009; and 92.3-96.8% in 2010-2014. * - 2014 data are still being received.

JeffCo Open Space FrogWatch USA Chapter (Golden, CO)

- 2013: 4 frog & toad species (1 state species of concern) at 21 wetland sites.
- *"In just one season [2013] of monitoring we have benefited greatly from this well organized program. Prior to this effort, we had no formal knowledge of anuran [frog and toad] species within our parks."*
- *"During the monitoring season, I didn't have to worry about the reliability of the data since the volunteers had undergone a certification program."*
- *"The unique chapter network has helped me get the project running in a very short amount of time."*
- *"Continued monitoring will assist the organization with making informed wildlife conservation decisions."*

-- Lisa Kluesner, Natural Resource Specialist, Jefferson County Open Space

Virginia Zoo FrogWatch USA Chapter (Norfolk, VA)

- 2011-2014: 17 frog & toad species at 15 wetland sites.
- Carpenter Frog observed by chapter volunteers at First Landing State Park for the first time in many years.
- Collaborates with other chapters hosted by the Virginia Aquarium and The Virginia Living Museum, as well as herpetologists and others on state and military lands.
- Offers regional training program for other chapters in the Mid-Atlantic and southeastern United States.



Carpenter Frog
(*Lithobates (Rana) virgatipes*)