



AMPHIBIAN MONITORING COMMUNITY SCIENCE PROGRAM

2020 Report



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The Amphibian Monitoring community science program is offered through Woodland Park Zoo's Living Northwest program. Launched in 2012, the program provides much-needed data on amphibian populations for Washington Department of Fish and Wildlife and other land managers. In order to protect Pacific Northwest amphibians—frogs, toads, salamanders, and newts—wildlife managers need to understand where their populations are and how they are doing, which is one reason why we've enlisted community volunteers to gather critical data on amphibian presence and breeding activity in Puget Sound's urban and suburban landscapes.

Woodland Park Zoo staff and experienced Amphibian Monitoring volunteer team leaders conduct the training for the volunteers. Participants are equipped with hip waders, GPS units, aquascopes, and other monitoring tools as they learn how to identify and document egg masses of different amphibian species in a way that's safe for people, wildlife and habitats. Once trained, the volunteers form teams and choose a wetland or pond to monitor on a monthly basis—recording data and taking photos of any egg masses or other life stages of amphibians they encounter. Over a six-month period, volunteers monitor for and submit data on eight different species of frogs, toads, and salamanders in wetlands throughout western Washington, including parks in Seattle and King County and Snohomish County Public Works sites.

RESULTS AT A GLANCE

# of teams.....	14
# of sites.....	14
# of volunteers.....	73
# of volunteer hours....	392
# of observations.....	342
# of Research Grade observations.....	104



DATA MANAGEMENT PROCESS

All observations for this project are entered into iNaturalist with photos, georeference (latitude and longitude) and additional fields (weather, site conditions, etc.) as directed by the protocol. In iNaturalist, an observation can be entered with no identification by the observer or with an initial identification by the observer. Observations are validated by online Amphibian Monitoring project participants recruited to assist with identifications of the observations.

The following is a detailed description of data validation in iNaturalist:

“Once uploaded to the database, observations are then validated through a community identification effort. Each photo sample can be reviewed by any registered user on the website. Users across the iNaturalist community attempt to identify each observation down to the lowest taxonomic hierarchy possible... through the community vetting process that requires at least 2 out of 3 additional users to agree on the identity of a specimen. iNaturalist attempts to facilitate discussion between users by weighting identifications higher that are contrary to the leading guess. The lowest level of taxonomy that reaches this threshold becomes the accepted identification.

For example, say someone uploads a picture of a large black bird. Four users agree it is some type of grackle (Genus *Quiscalus*), but two of them think it is a common grackle (*Quiscalus quiscula*) while the other two think it is a boat-tailed grackle (*Quiscalus major*). Because neither observation reaches the 2/3 agreement at the species level, the higher genus level is accepted (agreed on by 4/4 users), and the observation gets identified in the genus *Quiscalus*. If later users agree on the species level identification above the 2/3 threshold, then the submission is reentered as that species.

An observation that reaches this threshold can be considered **Research Grade** and entered into the Global Biodiversity Information Facility (GBIF) database. This international collaboration collates biodiversity records from scientific experts worldwide and nowadays also includes citizen-science databases like iNaturalist, Breeding Bird Surveys, and eBird. At the GBIF website (<https://www.gbif.org/>), any user can download the gathered occurrence data for personal or research purposes.”

Boone, M.E. & Basille, M. 2019. *Using iNaturalist to contribute your nature observations to science*. Retrieved from <https://edis.ifas.ufl.edu/uw458>

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PARTICIPANT EVALUATION RESULTS

Since 2011, over 340 volunteers from King and Snohomish counties have been trained. The volunteer scientists gain knowledge of and appreciation for amphibians and their wetland habitats, and the skills to do relevant, hands-on scientific data collection. In end-of-season evaluations, a majority of Amphibian Monitoring community scientists (80-90% of volunteers) report increased appreciation for local amphibians and their wetland site as a result of their participation.

“Thank you for the resources and support throughout the season. I enjoyed meeting new people and observing changes at the site throughout the season.”

“Made me realize how important citizen participation really is and how well it can work.”

- WPZ Amphibian Monitoring volunteers

SITE RESULTS FOR 2020

In 2020, a total of 14 sites were monitored by 14 teams, with one “site” – Oxbow Farm & Conservation Center – consisting of a complex of sites monitored by Oxbow Farm staff, using the WPZ project protocol, as part of their research.

Most teams were able to conduct one or two monitoring visits to their sites prior to the spring COVID-19 state shutdown. Teams did not monitor their sites from March – June, and only a couple of teams were able to conduct one more monitoring session in July 2020.

Six out of the eight target species were observed during the 2020 monitoring season (of the target species, only the western toad and endangered Oregon spotted frog were not “spotted”).

In addition, two non-target species were also observed – the western red-backed salamander and the ensatina.

The chart below summarizes the observations of each species:

SPECIES	NUMBER of OBSERVATIONS PER SPECIES
Western Red-backed Salamander	1
American Bullfrog	2
Amphibians (not identified to species)	2
Ensatina	4
Rough-skinned Newt	5
Northern Red-legged Frog	13
Northern Pacific Tree Frog	75
Long-toed Salamander	94
Northwestern Salamander	146
GRAND TOTAL	342

The map and graph on the next pages provide a snapshot of observations made at each site. See <https://arcg.is/0bb1ra0> for an interactive map of the summarized results from 2020 in a StoryMap.

Photos in this report are courtesy:

Elaine Chuang

Diana Koch

Travis Kurtz

- WPZ Amphibian Monitoring volunteers





