AMPHIBIAN MONITORING
COMMUNITY SCIENCE PROGRAM
2019 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 citizen 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, citizen science 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.

AT A GLANCE

# of teams.....10

# of sites.....10

# of volunteers.....58

# of volunteer hours…..237

# of observations.....258

# of Research Grade observations……70

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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.

"What a great experience! Thanks for providing such a wonderful way to be involved in both the community and scientific research."

"Thank you for the resources and

SITE RESULTS FOR 2019

Seven out of the eight target species were observed during the 2019 monitoring season (of the target species, only the endangered Oregon spotted frog was not "spotted"!). Below is a snapshot of observations made at each site (listed in order of frequency, most frequent at the top):

- **Camp Long – Polliwog Ponds:**
  - 45 observations of 2 species (**14 Research Grade**):
    Northwestern Salamander (*Ambystoma gracile*)
    Northern Pacific Tree Frog (*Pseudacris regilla*)

- **Carkeek Park:**
  - 10 observations of 3 species (**0 Research Grade**):
    Long-toed Salamander (*Ambystoma macrodactylum*)
    Northern Pacific Tree Frog (*Pseudacris regilla*)
    Rough-skinned Newt (*Taricha granulosa*)

- **Crescent Lake:**
  - 3 observations of 1 species (**0 Research Grade**):
    Long-toed Salamander (*Ambystoma macrodactylum*)

- **Hazel Wolf Wetlands:**
  - 83 observations of 6 species (**35 Research Grade**):
    Northern Pacific Tree Frog (*Pseudacris regilla*)
    Northwestern Salamander (*Ambystoma gracile*)
    American Bullfrog (*Lithobates catesbeianus*)
    Ensatina (*Ensantina eschscholtzii*)
    Long-toed Salamander (*Ambystoma macrodactylum*)
    Red-legged frog (*Rana aurora*)

- **Lewis Creek Park:**
  - 18 observations of 4 species (**5 Research Grade**):
    Red-legged frog (*Rana aurora*)
    Northwestern Salamander (*Ambystoma gracile*)
    Long-toed Salamander (*Ambystoma macrodactylum*)
    Northern Pacific Tree Frog (*Pseudacris regilla*)

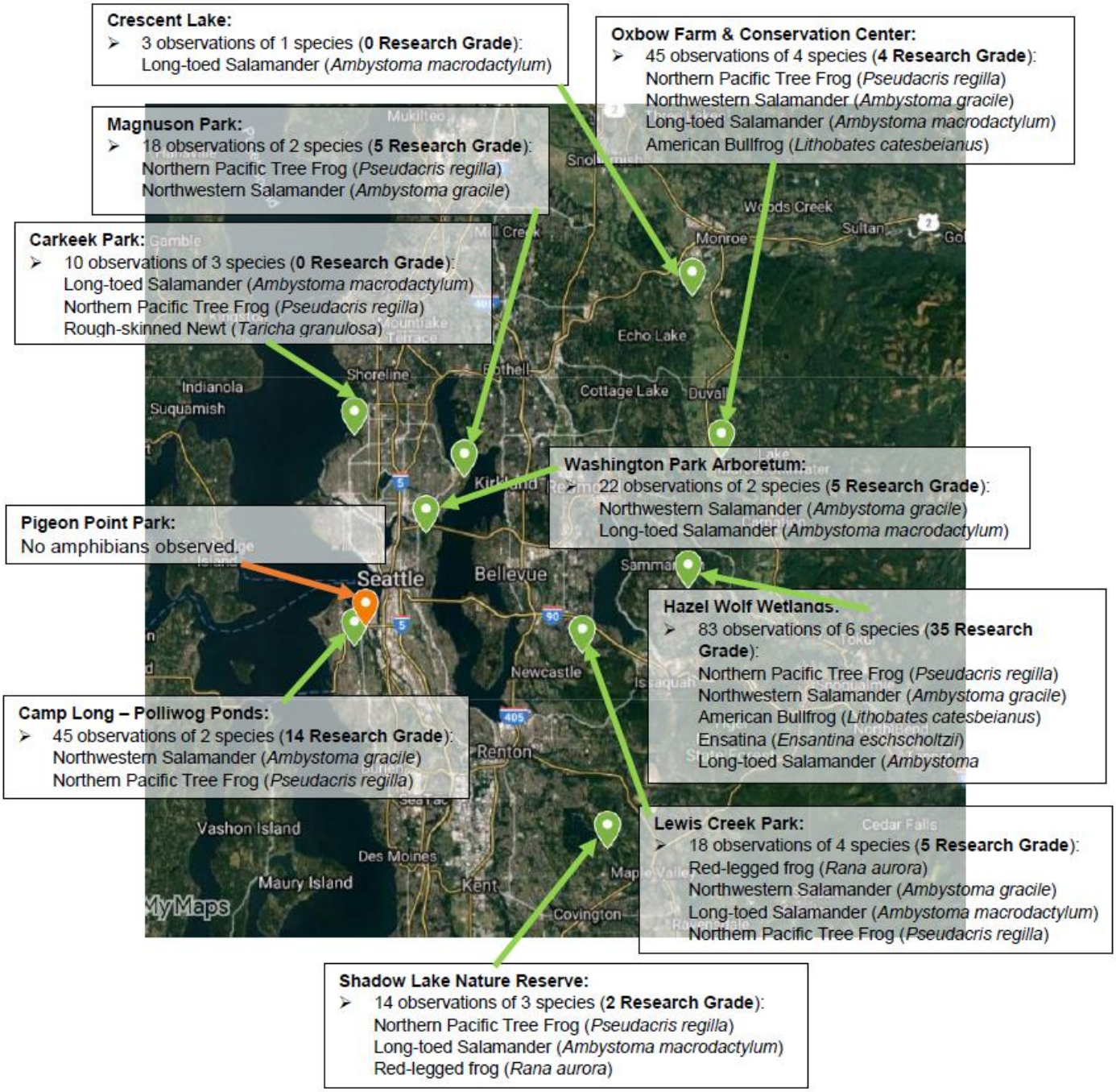
- **Magnuson Park:**
  - 18 observations of 2 species (**5 Research Grade**):
    Northern Pacific Tree Frog (*Pseudacris regilla*)
    Northwestern Salamander (*Ambystoma gracile*)

- **Oxbow Farm & Conservation Center:**
  - 45 observations of 4 species (**4 Research Grade**):
    Northern Pacific Tree Frog (*Pseudacris regilla*)
    Northwestern Salamander (*Ambystoma gracile*)
    Long-toed Salamander (*Ambystoma macrodactylum*)
    American Bullfrog (*Lithobates catesbeianus*)

- **Pigeon Point Park:** No amphibians observed.

- **Shadow Lake Nature Reserve:**
  - 14 observations of 3 species (**2 Research Grade**):
    Northern Pacific Tree Frog (*Pseudacris regilla*)
    Long-toed Salamander (*Ambystoma macrodactylum*)
    Red-legged frog (*Rana aurora*)

- **Washington Park Arboretum:**
  - 22 observations of 2 species (**5 Research Grade**):
    Northwestern Salamander (*Ambystoma gracile*)
    Long-toed Salamander (*Ambystoma macrodactylum*)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Bellevue
Renton
Kent
Monroe
Sultan
Woods Creek
Echo Lake
Cottage Lake
Duvall
Shoreline
Indianola
Suquamish
Newcastle
Vashon Island
Maury Island
Des Moines
Covington
Cedar Falls
My Maps