

Alberta Conservation Association
2022/23 Project Summary Report

Project Name: Alberta Volunteer Amphibian Monitoring Program

Wildlife Program Manager: Doug Manzer

Project Leader: Kris Kendell

Primary ACA Staff on Project: Kris Kendell

Partnerships

Alberta Environment and Protected Areas

Volunteer participants

Key Findings

- We shared knowledge about gartersnake behaviour and ecology with Edmonton & Area Land Trust to assist them in the conservation management of red-sided gartersnake in an Edmonton & Area Land Trust natural area.
- We addressed dozens of questions through the year from the public about amphibian and reptile natural history, habitat stewardship, and conservation status.
- We began exploring a new Alberta Volunteer Amphibian Monitoring Program partnership with the freely available iNaturalist.
- In total, 51 volunteers submitted 107 amphibian and 15 reptile observations to the Alberta Volunteer Amphibian Monitoring Program, including locations of three snake hibernacula (dens).

Abstract

Volunteers play a crucial role in wildlife conservation efforts through their involvement in biodiversity-related citizen science projects. The Alberta Volunteer Amphibian Monitoring Program (AVAMP) invites people to engage with nature and to provide unique information on amphibian and reptile distribution and life cycle events. To streamline the way AVAMP participants make and report their observations, we partnered with the Alberta Biodiversity

Monitoring Institute's (ABMI) free NatureLynx mobile application in 2021/22; however, in April 2022, AMBI ceased supporting the development of their app. As such, no new wildlife sightings were shared with the platform in 2022/23. In place of NatureLynx, we began exploring a new partnership with iNaturalist for 2023/24. iNaturalist is a social network of naturalists, citizen scientists and biologists, and is accessible via its website or mobile applications. iNaturalist mobile applications will allow AVAMP participants to complete data entry in the field. iNaturalist's community-driven process for species identification and record validation will ensure the upmost quality of data with minimum resources by Alberta Conservation Association (ACA) to manage. Data submitted to iNaturalist will be accessible by ACA via an AVAMP Project on the platform.

In 2022/23, 51 AVAMP participants submitted 107 amphibian and 15 reptile observations, including locations of three snake hibernacula (dens). These data represented 90% of the amphibian and 44% of the reptile species native to the province. Setting appropriate conservation measures for amphibians and reptiles requires a good understanding of species distributions and timing of life cycle events, which are often based on relatively few data. AVAMP is an example of how ACA can work with a network of enthusiastic volunteers and partners to fill data gaps and positively impact conservation.

Introduction

One of Alberta Conservation Association's (ACA) largest wildlife volunteer-based projects is the Alberta Volunteer Amphibian Monitoring Program (AVAMP). Through volunteering, AVAMP participants are provided with opportunities to increase their knowledge of wildlife and conservation issues, use their skills and experiences to contribute to conservation, and network with wildlife professionals. Data collected by AVAMP volunteers increases our knowledge of amphibian and reptile distributions, assists in updating their general status (along with other data; GoA 2017), and provides valuable information for land-use planning efforts. In 2022/23, we began exploring the creation of an AVAMP Project on the free citizen science platform, iNaturalist, in consultation with Alberta Environment and Protected Areas (EPA). Benefits of iNaturalist include an array of metadata linked to an observation, the ability of volunteers to

submit frog and toad calls on the iNaturalist website, and a community-driven process for species identification and record validation.

We chair the Alberta Amphibian and Reptile Specialist Group (AARSG), where we discuss topics and issues related to conservation and research of amphibians and reptiles in Alberta. These meetings also provide a forum to explore opportunities for collaboration. The AARSG has garnered a strong sense of community among professionals, graduate students, and citizen science groups in Alberta that are interested in amphibians and reptiles. In 2017, we became a member of the International Union for Conservation of Nature Species Survival Commission Amphibian Specialist Group, Canada.

Methods

At sites of their own choice, we encouraged AVAMP participants to listen for calling frogs and toads in the spring and to search for individual amphibians throughout the spring, summer, and early fall. Volunteers could also report the locations of snake hibernacula (dens) and other reptile sightings, including dead-on-road occurrences. We promoted AVAMP through our email newsletter and social media to increase awareness of amphibians and reptiles and to help us maintain relationships with program volunteers and other interested parties. We delivered presentations to target audiences to motivate and engage potential participants and improve awareness about the amphibians and reptiles in their communities. Volunteers self-registered and entered their own monitoring data on ACA's website or NatureLynx's mobile app.

We offered volunteers a quick identification guide for Alberta's amphibians (*Amphibian Identifier*) and a brochure on reptiles (*Reptiles of Alberta*) to use in the field. These outreach products encourage the reporting of amphibian and reptile observations to the program. We have also developed an online identification key to help volunteers confirm the identity of any amphibians or reptiles observed.

We reviewed, verified, and compiled all volunteer amphibian and reptile observations and then forwarded them to the Government of Alberta for entry into its *Fisheries and Wildlife Management Information System* database.

Results

In 2022/23, 51 new members joined ACA’s AVAMP platform. The same number of AVAMP participants submitted a total of 107 amphibian and 15 reptile observations, including three snake hibernaculum (den) locations, through ACA’s data submission portal in 2022/23. Data submitted by volunteers represented 90% of the amphibian and 44% of the reptile species native to the province (Table 1).

Table 1. Records of amphibian and reptile species observed by AVAMP participants in 2022/23.

Species	Taxonomic Name	Number of Records
boreal chorus frog	<i>Pseudacris maculata</i>	26
boreal toad	<i>Anaxyrus boreas</i>	6
bullsnake	<i>Pituophis catenifer</i>	-
Canadian toad	<i>Anaxyrus hemiophrys</i>	3
Columbia spotted frog	<i>Rana luteiventris</i>	2
Great Plains toad	<i>Anaxyrus cognatus</i>	3
long-toed salamander	<i>Ambystoma macrodactylum</i>	-
mountain short-horned lizard	<i>Phrynosoma hernandesi</i>	-
northern leopard frog	<i>Lithobates pipiens</i>	12
Plains gartersnake	<i>Thamnophis radix</i>	10
Plains hog-nosed snake	<i>Heterodon nasicus</i>	-
Plains spadefoot	<i>Spea bombifrons</i>	4
prairie rattlesnake	<i>Crotalus viridis</i>	-
red-sided gartersnake	<i>Thamnophis sirtalis</i>	3
tiger salamander	<i>Ambystoma mavortium</i>	26
wandering gartersnake	<i>Thamnophis elegans</i>	1
western painted turtle	<i>Chrysemys picta</i>	1
wood frog	<i>Lithobates sylvaticus</i>	25
yellow-bellied racer	<i>Coluber constrictor</i>	-
Total		122

Through public presentations and interactions with volunteers, we shared expertise and information about amphibian and reptile identification, ecology, mitigation translocation, stewardship, citizen science, data collection protocols, and survey methodologies.

Conclusions

Data from AVAMP volunteers will provide a better understanding of the distribution and status of Alberta's amphibians and reptiles in the province. AVAMP is an example of how ACA can work with a network of enthusiastic volunteers and partners to positively impact conservation. AVAMP connects people to nature and generates valuable data from these encounters that support the conservation and management of Alberta's amphibian and reptile species.

Communications

Oral presentations

- MacEwan University, Terrestrial Vertebrates ZOOL 401, *virtual presentation*, February 17, 2023.
- Alberta Environment and Protected Areas, and Edmonton & Area Land Trust, *virtual presentation*, June 9, 2022.
- Nature Alberta, 2022 BiodiverCity Challenge, *virtual presentation*, June 2, 2022.
- Buffalo Lake Naturalist Club, *virtual presentation*, May 19, 2022.
- Edmonton & Area Land Trust, *virtual presentation*, April 14, 2022.
- Northwest and Southwest Chapter: Partners in Amphibian and Reptile Conservation (PARC) joint meeting, *virtual presentation*, April 8, 2022.
- Girl Guides and Pathfinders. Edmonton, AB. March 14, 2023.

Literature Cited

Government of Alberta (GoA). 2017. *Alberta Wild Species General Status Listing – 2015*.

Edmonton, Alberta, Canada. 24 pp. Available online:

<https://open.alberta.ca/publications/alberta-wild-species-general-status-listing-2015>.

Photos



Photo 1. The Alberta Volunteer Amphibian Monitoring Program logo. Photo: ACA



Photo 2. You may not need to look much further than your own property to spot an amphibian, such as this wood frog (*Lithobates sylvaticus*), if you live in the country or near a naturalized city park connected to natural spaces that provide food, clean water, and shelter for amphibians. Photo: Kris Kendell