

The Vermont Reptile and Amphibian Atlas

Update

2022

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**For the Forest Ecosystem Monitoring Cooperative
(FEMC)**

James S. Andrews

Vermont Reptile and Amphibian Atlas (2022)

Background

Localized intensive monitoring

Amphibian monitoring at Mt. Mansfield provides locally intensive data on a subset of amphibian species. While these data are particularly valuable and allow us to see year-to-year population changes of the monitored species at Mt. Mansfield and provide local information on abnormalities, and natural history, they do not allow us to see more widespread changes in the distribution and/or natural history (calling times, migration dates, etc.) of the full range of reptiles and amphibians statewide. Nor do they allow us to see changes in forest health, or the impacts of forest fragmentation and consumption on a larger scale. In addition, there is a real need to get reptile and amphibian natural history and management information out to a wide variety of landowners, land managers, and other natural resource professionals.

Statewide extensive monitoring

The Vermont Reptile and Amphibian Atlas is an effort begun in 1994 by the Reptile and Amphibian Scientific Advisory Group for the Vermont Endangered Species Committee. The atlas project initially began as an effort to gather data for use by this committee. Data were needed in order to make informed recommendations regarding the appropriate status and conservation of these species. Since then, the goals have widened to incorporate education, citizen involvement, and dissemination of information. The ultimate goal of the Atlas is to gather and disseminate data on the reptiles and amphibians of Vermont in a way that involves and informs Vermont individuals and organizations so that they will become more informed and effective stewards of wildlife habitat. The Atlas has grown since its inception in 1994 to involve over 7,000 volunteers and thirty-five private organizations and government agencies. With the help of organizations, agencies, volunteers, and staff members, we are continuing to collect information and broaden our knowledge base regarding the natural history, distribution, and effective conservation of Vermont's reptiles and amphibians. By providing the best and most up-to-date information on the conservation of these species in Vermont, we have become a trusted party in many conservation activities throughout the state.

Goals for the 2022 Atlas work

The goals for the 2022 Atlas work were: (1) to gather data for the Vermont Reptile and Amphibian Atlas; (2) to update and improve the Atlas website, Facebook page, and other outreach efforts (3) to review and enter current and previous years' herpetological reports; (4) to forward electronic files of the most recent calendar year's data to the VT Nongame and Natural Heritage Program; (5) continue to assign latitude and longitude coordinates to those reports that do not currently have them, (6) to respond to daily requests for information on the identification, conservation, natural history, and management of Vermont's reptiles and amphibians.

We were also required to submit this report and the most recent full-year's data to FEMC in the format of an Excel spreadsheet(s) with appropriate labels and metadata (for tabular data). The data will be added to the FEMC project library and made available to other researchers (subject to accessibility restrictions). The written report will be posted to the FEMC website. The data will be sent when we are finished reviewing them in March or April of 2023. This is the final report for the statewide Atlas for 2022.

Contributed records

Between January 1, 2022 and December 31, 2022 roughly 600 contributors provided 2,880 new records that were entered into the Vermont Reptile and Amphibian Atlas Database. This brings the total number of reports entered to 119,068.

The 2022 reports included 20 verified reports of S1 (very rare) species, 179 verified reports of S2 (rare) species, 202 verified reports of S3 (unusual) species, 134 verified reports of S4 species and 2,164 verified reports of S5 species. Reports also include unverified and negative records, amphibian and reptile road crossing locations, vernal pools, turtle

egg-laying sites, snake dens and other significant herptile habitats. Sightings came from ~213 towns, cities, grants, and gores and all Vermont counties. They included verified reports of all of Vermont's native species with the **exception of Boreal Chorus Frog (probably extirpated, last report 1999), North American Racer (last report 2014), and Fowler's Toad (last report 2021)**. All S1-S3 reports were exported to Jodi Shippee of Vermont Fish and Wildlife in early January 2023.

As usual, all of these reports have been personally reviewed by us and when at all possible, the contributors have been personally contacted and thanked. Scores of ID and conservation questions have been personally responded to as well.

Exotic species

Every year we receive reports of non-native reptiles and amphibians that were either released pets or were accidentally transported via boats, trucks, RVs, and cars. This year we received only one report of a non-native species. A **Green Anole** (*Anolis carolinensis*) was found in a home in East Calais. It is suspected that it came north from Florida with some house plants.

Hypothetical species

We received no reports of **Eastern Box Turtles** (*Terrapene carolina*) this past year. This is a species we believe may have a small native population in Vermont, but we continue to need additional information.

New locations out of the expected range

We received a photo report of an **Eastern Musk Turtle** (*Sternotherus odoratus*) from South Hero this year. It is only the second report of this species from Grand Isle County and the first from South Hero. We have one reliable report from 2011 in Franklin County (Georgia) and multiple reports from both Colchester and Milton in Chittenden County. Given the easy travel corridor of Lake Champlain, this species may well move further north with climate change.

Targeted survey efforts

In 2022, with my assistants, I personally visited 49 towns to gather new records. Many survey trips focused on those "towns" (including cities, gores, and grants) that have had the least survey effort. This is usually the result of low numbers of residents. In addition, we focused our survey efforts on filling in distribution gaps of stream salamanders, since they are not often reported by citizen scientists. Combined with records sent in by volunteers we documented new town records, or updated historic records in 26 town/species combinations.

No reptiles or amphibians were killed or harmed during any of these activities.

Field trips, presentations, and media outreach

Remote presentations were provided for Castleton College and the Agency of Natural Resources. Field trips and in-person presentations are now starting to resume after the height of the covid pandemic. I led trainings for Ascutney Mountain Audubon, Burr and Burton Academy, the Natural Resource Conservation Service, and The Vermont Agency of Transportation. The VTrans course that I co-teach called Habitats and Highways, received an Environmental Excellence Award from the Federal Highway Administration this year. I finished teaching a course on The Conservation of Vermont Amphibians and taught an additional course on The Conservation of Vermont Reptiles through Hogback Community College. Herpetological field trips were given in four towns, and a presentation on Vermont frogs was provided for the Dead Creek Wildlife Festival. I also wrote a commentary for Vermont Digger that I believe addresses the important underlying economic issues that need to be addressed if we are to live sustainably and maintain healthy ecosystems. This commentary was also linked from our website.

Data sharing

In this time period, I provided Vermont distribution records of species to two academic researchers. Location data were also provided on three target species for the Green Mountain National Forest, and rare turtle data for Marie Cauduto (a state watershed planner). Wood Turtle records were again provided to Kiley Briggs of the Oriante Society and distribution data on a variety of herptiles was provided for the Natural Resource Conservation Service for land under their conservation easements. Amphibian crossing-area data were provided for Bennington and Windham Counties and the town of Williston. Fowler's Toad data were provided to Luke Groff, VT F&W herpetologist.

I continue to be more aggressive about providing data to contributors from target towns where we need more data. What I provide to these people is a list of common reptiles and amphibians that are expected to be in their towns but have not yet been photo-documented. For towns that have a good chance of providing habitat for rarer species, I include our list of herptiles that should always be documented. We provided this sort of data to residents of over twenty towns. Many of these exchanges resulted in new town records.

Our data were also used extensively in a joint project of the Vermont Agency of Transportation and UVM in developing and checking a predictive model of significant amphibian-crossing areas in Vermont.

The Colby Hill Ecological Project continues to get exported monitoring data and reports for the lands that they manage in Lincoln & Bristol.

Significant sightings were shared with state herpetologist Luke Groff as they were received and reports of all S1-S3 herptiles were forwarded to Jodi Shippee at VT Fish and Wildlife in January 2023.

Archiving Records

Although scanning records was a priority for 2021 work rather than 2022, it continued into 2022. We believe we have now scanned and archived all our printed and photographic records. We may still occasionally find written, printed, or photographic material in our office or elsewhere that needs to be scanned and archived, but the initial effort of scanning and archiving everything that we were aware of has been completed.

Coordinates

Assigning lat long coordinates from older reports that did not already have them was also a goal for 2021 that continued into 2022 and will continue for the next decade. We had previously finished assigning lat longs to all unusual or rare species (S1-S3) in the state as well as some more common S4 species. During 2021, we finished adding lat long coordinates to **all our reptile and amphibian records from Rutland County**. This included all common species (S5) as well as rare, threatened, and endangered species. By November 2022, lat longs had been added to all records **from all 23 towns in Addison County except Starksboro** (94% of Starksboro records are finished). We still have many older reports of common (S5) herptile species that need lat longs assigned.

Update of the Website/Atlas

Regular updates have continued to be made to our website including updated state-wide relative abundance charts for all Vermont herptiles, detailed life history charts for all species, additional videos, many new management sources, and links to important conservation information.

Additional funding and matching requirements

Additional funding for the state-wide Atlas portion of our work during 2022 came from the South Lake Champlain Trust, the Lintilhac Foundation, VT Fish and Wildlife, The Hazel Fund of The Vermont Community Foundation, and an online fundraiser. For those sources of funding that required a match, it has been provided by my volunteer hours.