

# **The Vermont Reptile and Amphibian Atlas**

**Update**

**2023**

**February 9, 2024**

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

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# **Vermont Reptile and Amphibian Atlas (2023)**

## **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 2023 Atlas work**

The goals for the 2023 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 have been sent. This is the final report for the statewide Atlas for 2023.

## **Contributed records**

Between January 1, 2023 and December 31, 2023, 828 contributors (608 new) provided 3,382 new records that were entered into the Vermont Reptile and Amphibian Atlas Database. This brings the total number of reports entered to 123,019.

The 2023 reports included 53 verified reports of S1 species, 262 verified reports of S2 species, 397 verified reports of S3 species, 190 verified reports of S4 species and 2,426 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 240 towns, cities, grants, and gores and all Vermont counties. They included all of Vermont's native species except Boreal Chorus Frog (probably extirpated from Vermont, last reported in 1999). We received and entered two old (1852 & 1980) reports of North American Racers, but we have not received any well-documented reports of this species since 2014. All S1-S3 reports were exported to Jodi Shippee of Vermont Fish and Wildlife last month.

### **Exotic species**

Every year we receive a few reports of non-native reptiles and amphibians that were either released or escaped pets or were accidentally transported via boats, trucks, RVs, and cars. We received a report of a Green Anole (*Anolis carolinensis*) from East Montpelier that appears to have come to Vermont on an imported house plant. We received a report of an African Spurred Tortoise (*Centrochelys sulcata*) in Albany that was an escaped pet. We received a report of a River Cooter (*Pseudemys concinna*) in Burlington that is now in a classroom. This also was likely an escaped or released pet. We entered a report of a Cuban Treefrog (*Osteopilus septentrionalis*, from early 2022) found in a house in Burlington. It also likely came in with house plants. An Eastern Fence Lizard (*Sceloporus undulatus*) showed up on a porch in Rutland (unknown origin). Lastly, two Pond Sliders (*Trachemys scripta*) were reported. One was in Arlington and the other in Windsor. This is a common pet turtle species that has become invasive in southern New England. As our climate continues to warm, they could become invasive in Vermont.

### **Hypothetical species**

We received no additional reports or photos of Eastern Box Turtles (*Terrapene carolina*). Our most recent reports were in 2021. Eastern Box Turtles may be (or may have been) part of a population of Vermont natives, but we won't know for sure until we capture one and do some genetic comparisons.

### **New locations out of the expected range**

We personally found a dead Eastern Ratsnake (*Pantherophis alleghaniensis*) on Route 7 in Pittsford adjacent to the Pomainville Wildlife Management Area. This is the first documented report from Pittsford. We reached out to town residents using Front Porch Forum but did not get any other reliable reports from Pittsford. We also received our first report of a Four-toed Salamander (*Hemidactylium scutatum*) from Pittsford, but this is less of a surprise, since the distribution of this secretive and small salamander is not well known. We also filled in over 50 data gaps (town/species combinations) for many more common species.

### **Targeted survey efforts**

During this period, we personally visited 59 towns (or cities, gores, or grants) 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. Other trips focused on species that are not often reported by citizen scientists. These include the Northern Dusky Salamander (*Desmognathus fuscus*) and Spring Salamander (*Gyrinophilus porphyriticus*). We filled in many data gaps (species/town combinations) with these trips.

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

### **Review of data**

As usual, all these reports have been personally reviewed by me or one of my assistants 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.

## **Field trips, courses, presentations, and media outreach**

During this time, I met with writers and press for a number of interviews and news pieces on Vermont herptiles. These included shows on Vermont snakes and climate changes' impacts on Vermont herptiles for WCAX TV, an interview on Vermont herptiles for Vermont Public's Vermont Edition, and a film on snake monitoring for a private film maker.

I also did two vernal pool trainings for staff of the Natural Resource Conservation Service (NRCS), helped with herp field trips for the Northeast Natural History Conference and the International Conference on Ecology and Transportation, and did a training series called Habitats and Highways for the Vermont Agency of Transportation.

I did a remote presentation for Calais Elementary School and led field trips and/or gave in person presentations for the Lewis Creek Association, Burr and Burton Academy, the Salisbury Conservation Commission, Dead Creek Wildlife Festival, and the Herricks Cove Wildlife Festival.

## **Data sharing**

This past year, we provided Vermont distribution records of herptile species to the US Geological Survey, the Vermont Endangered Species Committee, The Nature Conservancy of Vermont, the Vermont Land Trust, Vermont Fish and Wildlife, the Green Mountain National Forest, the University of Vermont, and a steering committee for a future Monkton Town Forest. Wood Turtle records were again provided to Kiley Briggs of the Orianna Society and distribution data on a variety of herptiles was provided for the Natural Resource Conservation Service for land under their conservation easements.

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 or providing habitat for rarer species, I include our list of herptiles that should always be documented. Like last year, we provided this sort of data to residents of over twenty towns. Many of these exchanges resulted in new town records.

The Forest Ecosystem Monitoring Cooperative and the Colby Hill Ecological Project continue to get exported monitoring data and reports, but they paid for the monitoring and reports.

Significant sightings were shared with state herpetologist Luke Groff as they were received and reports of all S1-S3 herptiles are forwarded to Vermont Fish and Wildlife annually.

## **Coordinates**

All our new records are entered into our database with latitude and longitude coordinates for point mapping. Many smart-phone photos show us almost exactly where the photos came from. This was not always the case. Older records most often came with physical descriptions of roads or landmarks describing the location. We have now finished the reviewing and assigning of lat longs to all reports of S1 through S4 species. Records with lat longs assigned now total more than 106,000 of 123,000 records (10,000 more than last year at this time). Molly Parren is now adding lat longs to older reports of S5 species. All towns in Rutland and Addison County have been finished along with all the towns bordering Lake Champlain. We are very pleased with this progress. This project will be ongoing for a couple more years.

## **Update of the Website/Atlas**

Monthly updates have continued to be made to our website. Matt Gorton updated our relative abundance tables. Kate Kelly added a quick photo reference to Vermont herptiles, updated our management resource list, Fowler's Toad identification information, and glossary. In addition, I sent out periodic Herp Update newsletters to a group of over 400 people. These Updates get added to our website so that they are available to anyone. Forest Ecosystem Monitoring Cooperative intern Hanson Menzies joined us for a few months. We had him send out targeted information about the Atlas with regional information on what species needed to be documented. These were directed

to the appropriate regional press, Front Porch Fora, and contributors from the targeted region. While with us, he sent out regional information on our data gaps to Bennington, Grand Isle, Orange, Orleans, and Windsor Counties. Master's student/intern Rosy Metcalfe updated our calling amphibian tables. They will be added to our website in the next couple weeks.

### **Additional funding and matching requirements**

Additional funding for 2023 came from the South Lake Champlain Trust, the Forest Ecosystem Monitoring Cooperative, 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 (Jim Andrews) volunteer hours.