

# **The Vermont Reptile and Amphibian Atlas**

**Update**

**2017**

**February 4, 2018**

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

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## **Vermont Reptile and Amphibian Atlas (2017)**

### **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 and land managers as well as 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 6,500 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 2017 Atlas work

The goals of the FEMC funding for the 2017 field seasons 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; and (5) to respond to daily requests for information on the identification, conservation, natural history, and management of Vermont's reptiles and amphibians. All of these goals have been met.

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. Data and reports were sent on February 4, 2018.

### **Contributed records**

During 2017 over 800 contributors provided about 4000 new records that were entered into the Vermont Reptile and Amphibian Atlas Database. This brings the total number of contributors to almost 7,000 people and our total number of reports entered to over 100,000.

The 2017 reports included 923 reports of S1 species (903 from one study), 157 S2 species, 458 S3 species, 149 S4 species, and 2,365 S5 species. Reports also include amphibian and reptile road crossing locations, vernal pools, turtle egg-laying sites, and snake dens. Sightings came from 194 towns, cities, grants, and gores and all Vermont counties. They included all of Vermont's native species with the exception of Fowler's Toad, Boreal Chorus Frog (probably

extirpated), and Spotted Turtle. In February of 2018, we received a report of a few 2017 sightings of Spotted Turtles, but those data have not yet been entered into our database. We entered one report of a North American Racer, but it was an historic newspaper report from 1914 so there were no 2017 sightings of North American Racers received in 2017.

### **Exotic species**

Every year we receive a few reports of non-native reptiles and amphibians that were either released pets or were somehow transported to Vermont on RV's, boats, nursery stock, or other items. The year 2017 was no exception; a **Western Hog-nosed Snake** (*Heterodon nasicus*) was photographed and reported from Royalton and single **Pond Sliders** (*Trachemys scripta*), a common pet turtle species, were reported from both Brattleboro and Norwich. The Western Hog-nosed Snake will almost certainly die over the winter. The Pond Sliders may survive, but we have no evidence of breeding in Vermont. They have become established at some sites in southern New England.

### **Hypothetical species**

We received a report of two **Eastern Hog-nosed Snakes** from an area in Vermont very close to and in similar habitat to previous reports of the same species. Eastern Hog-nosed Snakes are considered a hypothetical species in Vermont. By hypothetical we are referring to species that may be breeding in Vermont, but we have no solid evidence of that breeding and a very limited number of reports. Unfortunately, although the descriptions are convincing, details on the date are missing as well as the photographs that were taken at the time. We also entered reports of **Eastern Hog-nosed Snake** from Maidstone where a man was importing the snakes with an intent to raise them in the wild.

### **Outside-of-range reports for S1 species**

We received a handful of odd reports of S1 species outside of where we would expect them: **Spiny Softshell** near Mount Philo in Charlotte and in Rutland City; and **Common Five-lined Skinks** from Grand Isle and West Windsor. None of these reports had photos associated with them but some were well enough described to strongly suggest released or transported animals of these species or perhaps related species from out of state.

### **Unusually late records gathered by or contributed to the Atlas Project during the fall and early winter of 2017/18**

As was the case in the fall of 2015, some of the most unusual verified reports of 2017 have been the late-season reports of amphibians. In December of this year we had well-documented reports of **Blue-spotted Salamander**, **Spotted Salamander**, **Northern Dusky Salamander**, **Four-toed Salamander**, **Eastern Red-backed Salamander**, **Eastern Newt**, **Green Frog**, **Spring Peeper**, and **Wood Frog** active and moving on the surface. Almost all of the December reports were on the unusually warm rainy night of December 5 when nighttime temperatures reached 10 C. We continued to receive reports of amphibian and even reptile reports during a thaw in January 2018. As a result of our data, we will be able to help document the current and future effects of climate change on reptiles and amphibians in Vermont.

### **Interesting reports from earlier in 2017**

Among the most interesting and valuable of the S2 reports was tracking down the contributor and location of a 2016 iNaturalist report of the first photo-documented report of a **Four-toed Salamander** from Bennington County. We also picked up a few other new site reports for this species in Benson, Colchester, Monkton, Sudbury, and Wells. I continue to believe this species is more widespread than our records indicate and that we will fill in many more gaps as people learn how to find and identify it.

We received spring and fall confirmation of the Canaan **Blue-spotted Salamander** population near Route 102 and the Johnson Farm Wildlife Management Area.

As a result of Cindy Sprague's study of our isolated New Haven/Bristol/Monkton **Eastern Ratsnake** population, we have learned a great deal about the favored feeding locations for that population as well as a denning site. All of Cindy's data have been entered into our atlas.

We received many new **Wood Turtle** records as well as multiple reports from previously known sites from ongoing studies of Mark Powell. Steve Parren's reports of **Wood Turtle**, **Spotted Turtle**, and **Spiny Softshell** studies in 2017 were received in February and have not yet been entered into our database.

We received photo documentation of new town records of **Jefferson Salamander Group** salamanders from Danville and Roxbury.

We continued to fill in scores of gaps in the distribution and photo-documentation of more common reptiles and amphibians.

### **Targeted survey efforts**

This year we visited Benson, Bristol, Cambridge, Castleton, Cornwall, Fair Haven, Ferrisburgh, Goshen, Landgrove, Lincoln, Middlebury, Monkton, Morristown, New Haven, Orwell, Panton, Pawlet, Pomfret, Putney, Shoreham, Vergennes, Waltham, West Haven, and Weybridge in an effort to fill in distribution or photo-documentation gaps. We gathered new photo-documentation from most of these towns, and new distribution records from many of them, but most of the species were fairly common species.

However, we targeted some old quarries in Pawlet to try to document **Eastern Ribbonsnake** (S1, High Priority SGCN) in that area. We were excited to find and document them as well as **Northern Watersnakes** and other more common species in those quarries. This extends the known range of ribbonsnakes further south in Vermont.

Once again, since the fall was so unseasonably warm, we were able continue fieldwork through November. Even during late fall, stream salamanders can often still be found in and along the streams. We were able to gather new photo-documentation reports in October and November from Addison, Weybridge, Morristown, Cornwall, Ferrisburgh, and Orwell, with **Northern Two-lined Salamander** from Panton being the latest find on November 15<sup>th</sup>. Since Panton is a fairly flat valley town with lots of agriculture, we were excited to find a very small piece of isolated habitat for this species.

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

### **Quality control, maintenance of the Atlas database, data requests**

I reviewed all records, contact was made to all contributors, data were entered into our database and rare species reports have been forwarded to the Wildlife Diversity Program of Vermont Fish and Wildlife. We continually check for mistakes and typos in our database and make corrections and we are working to add latitude and longitude for as many of the old S1 through S3 reports as possible as well as all new reports of any species. FEMC funds are being used to pay Kate Kelly for the review and upgrading process.

We also regularly respond to requests for data but are careful not to reveal locations for sensitive species. During 2017, I exported data (Vermont Wood Turtles) to the regional Wood Turtle Recovery Group, the US Department of Defense (all herps on DOD lands in Vermont), Vermont Center for Ecostudies (amphibian crossing areas in Addison County), Burr and Burton Mountain Campus (herp species that need to be documented in Northern Bennington County), Friends of the Green River Reservoir (herp species that need to be documented in Orleans County), the Vermont Agency of Transportation (VTrans), (herps along Route 22A in Orwell south to Fair Haven) in prep for a Route 22A upgrade, VTrans (amphibian crossing data from Route 125 near Payne Drive) for a culvert upgrade and wildlife crossing report, US Natural Resource Conservation Service (Wood Turtles on farmlands), Green Mountain National Forest (Wood Turtles near the Battenkill on USFS lands regarding mowing), and Marsh Billings National Historical Park (herps that needed documenting in the Woodstock area).

We also are working closely with graduate students, biologists, and academic faculty in providing advice and data in locating and studying the distribution of, and effects of, a variety of different reptile and amphibian diseases in Vermont.

The searchable list of needed records was updated again and put on line on our website (VtHerpAtlas.org). This feature has generated many reports that have helped us fill in gaps in our distribution maps. I am hoping eventually to have photo-documented reports of all species found in all Vermont towns, cities, grants, and gores. Since cell phones with cameras have become ubiquitous, this is easier to accomplish than when the Atlas was first started.

We have been working regularly for the last year to **update our website** both in format and in much of the content. We hope to make the new site public in the next couple months.

### **Outreach and related activities**

During 2017, I gave a total of ten presentations or field trips across the state from Peru and Rockingham to Hyde Park. Some of the field trips targeted and resulted in new photo-documentations. An invited presentation at the Vermont Monitoring Cooperative's annual meeting focused on **Eastern Ribbonsnakes** in the hopes of generating some new reports for that species in the future. Since it is so similar to the Common Gartersnake, it would be easy to overlook.

Our **Facebook** site has been posting regularly throughout the year and it has been generating new records as well.

Continued press coverage helps to keep the VT Herp Atlas in the public's awareness and we have had regular coverage this past year in newspapers, online, and on radio, including what has become an annual appearance on VPR's Vermont Edition. Working with **Vermont Fish and Wildlife**, we have generated a number of press releases that were reviewed, edited, and distributed through their outreach network. This has generated a much larger and wider reach and we are very appreciative of their support and cooperation.

With the help of the **Orianna Society**, we have also begun the process of generating entirely **new distribution maps** that should be loaded onto our website this coming summer.

We continue to involve and guide working professionals, students, and lay people in direct experiences as colleagues, volunteers, interns, and by serving as informal or formal advisors. We continue to draw attention to spring and fall (and now very late fall) amphibian migrations and the threats of habitat fragmentation by roads, through promoting and participating in spring amphibian crossing nights. Increased awareness is needed to fund the projects and make the systemic changes needed to move us toward sustainable practices.

### **Awards**

In July I (Jim Andrews) traveled to the annual Northeast Partners in Amphibian and Reptile Conservation annual meeting in Virginia to receive the second annual **Award for Excellence in Herpetofaunal Conservation**. It was an honor to receive regional recognition for our efforts from this distinguished group.

The town of Monkton and its collaborators won a **Federal Highway Administration Environmental Excellence Award** for the Monkton amphibian underpasses. This site was first discovered through the atlas and brought to the attention of Monkton Residents and Vermont Fish and Wildlife through our efforts. Determining the significance of road-crossing sites can only be determined through the use of our Atlas data.

### **Teaching with Atlas data**

I depend upon the Atlas data we have gathered over the last two decades for my teaching as a lecturer at UVM, Hogback Community College, and at VTrans. I am hoping to generate better stewardship of our wildlife and ecosystem resources through these classes. This coming winter/spring, Sue Morse and I will again teach "Habitats and Highways" to Vermont Agency of Transportation employees. This has been a particularly effective method of integrating ecologically sound practices within that agency.

## **Reptile and Amphibian Scientific Advisory Group (RASAG) to the Vermont Endangered Species Committee work that is dependent on Atlas data**

The Vermont Reptile and Amphibian Atlas was begun by the RASAG in an effort to gather the needed data to make more informed decisions regarding conservation action and priorities for reptiles and amphibians in Vermont. Here are two 2017 activities informed by that data.

### Protection of habitat for state listed species.

Steve Parren has drafted the first listing of critical habitat for a reptile or amphibian in Vermont. His proposal is to list and protect critical nesting habitat for Spiny Softshells. Conservation efforts for this species have regularly drawn on atlas data.

### Mudpuppy

The RASAG is currently updating the listing documentation to recommend listing the Mudpuppy as a threatened species in Vermont. We have done this twice before. We continue to be concerned that populations of Mudpuppies in the major tributaries of Lake Champlain can't sustain the regular (every four years) mortality brought about through the use of the lampricide TFM that is used to control sea lamprey. Data strongly suggest that TFM treatments eliminated populations of Mudpuppy from Lewis Creek and have greatly reduced populations in the Lamoille River. However, since control of sea lamprey through the use of lampricides is a program that Vermont Fish and Wildlife supports, they have not supported the listing in the past, and our recommended listing has been denied. Once again, the Atlas data are key in these efforts.

### **Financial and other support**

The **Forest Ecosystem Monitoring Cooperative** (formerly Vermont Monitoring Cooperative) has been our largest source of funding for many years. After a short one-year hiatus in funding from them, we now have a commitment of partial funding from them through the summer of 2019.

The **Vermont Fish and Wildlife State Wildlife Grants** (SWG) have also been an important and regular source of funding for us. Our most recent grant runs through 2018 and will be used largely to pay for the website upgrade.

The **Lintilhac Foundation** has been a long-time supporter of this work. Since their funds are from the private sector they can be used as match for other sources of funding.

**Colby Hill Ecological Project** (CHEP) funds the long-term monitoring in Lincoln in its entirety.

Surveys along state roads, as well as the VTrans training course are paid by **VTrans**.

We are pleased and excited to be working with a new partner in the **Orienne Society**. It is providing support in the form of the labor of its local director Kiley Briggs who is working with us on our update of our website, cartography for our new distribution maps, and the continuation of postings and responses on our Facebook page.

**Vermont Family Forests** continues to be our fiscal agent and umbrella organization for most Atlas activities.