Lye Brook Wilderness and Mt. Mansfield

Amphibian Monitoring

&

The Vermont Reptile and Amphibian Atlas

Update

2009

For the Vermont Monitoring Cooperative

James S. Andrews

Introduction

As per our contract, it was agreed that amphibian and reptile monitoring and survey data would continue to be gathered, reviewed, entered into our database, and forwarded to VMC during 2009. However, in an effort to save money and time, we agreed to begin an every-other-year schedule of generating indices, analyzing, and reporting on the data gathered. Consequently, I have included only basic background information and a very brief review of the survey data in this update. If funding continues for the 2010 field season, a more complete analysis will be completed and reported on during the winter of 2010-2011. Electronic copies of the data are included with this report.

Mt. Mansfield Amphibian Monitoring

Background

After an initial amphibian survey and establishment of monitoring protocols, populations of amphibian species have been monitored annually on Mount Mansfield since 1993. The goals of the monitoring are to (1) establish a baseline data set of abundance indices for the amphibian species caught in the fences, (2) monitor year-to-year changes in their abundance indices, (3) monitor changes in the number and type of obvious external abnormalities, (4) gather inventory data for the Vermont Herp Atlas, and (5) gather basic natural history information on the species present. Amphibians are targeted for this kind of study because their multiple habitat usage and permeable skin make them especially sensitive to changes in environmental conditions. Fifteen years of data have been gathered at this site using three drift-fences. For details on methods and locations see the 1995 VForEM annual report.

Update for 2009

No monitoring took place at the Mt. Mansfield fences during the 2009 field season. During 2008 monitoring began again at Lye Brook Wilderness after a five-year break. Monitoring at Lye Brook Wilderness allows us to compare data at the two locations to see if there are corresponding patterns that may signal statewide changes or if population trends are local only. Funding was sufficient during the 2008 field season to monitor at both Lye Brook Wilderness and Mt. Mansfield. However, due to budget limitations, only the Lye Brook Wilderness fences were monitored in 2009. Our goal is to get three years of data from the Lye Brook fences before once again leaving that site for five more years. We hope to monitor the Mt. Mansfield fences in 2010, get the third year of data from the Lye Brook Wilderness fences in 2011 and then return to annual monitoring at Mt. Mansfield. Consequently, we have no data from the 2009 field season at the Mt. Mansfield fences.

Lye Brook Wilderness Amphibian Monitoring

Background

An inventory of amphibians in the Lye Brook Wilderness Region of the Green Mountain National Forest (GMNF) in Bennington County was begun in 1993 and completed in 1995. Monitoring of selected amphibian species began in 1994 and continued through 2002. The goals of the monitoring are to (1) establish a baseline data set of abundance indices for the amphibian species caught in the fences, (2) monitor year-to-year changes in their abundance indices, (3) compare population changes between this site and other monitoring locations in the Green Mountains, (4) look for correlations

between amphibian populations and other data gathered at this site, (5) monitor changes in the number or type of obvious external abnormalities, (6) gather inventory data for the Vermont Herp Atlas, and (7) gather basic natural history information on the species present. Five species of salamander and five species of frog are monitored using drift fences. The salamander species are Eastern Newt (*Notophthalmus viridescens*), Northern Two-lined Salamander (*Eurycea bislineata*), Eastern Red-backed Salamander (*Plethodon cinereus*), Spotted Salamander (*Ambystoma maculatum*), and Spring Salamander (*Gyrinophilus porphyriticus*). The frog species are American Toad (*Anaxyrus americanus*), Green Frog (*Lithobates clamitans*), Pickerel Frog (*Lithobates palustris*), Spring Peeper (*Pseudacris crucifer*), and Wood Frog (*Lithobates sylvaticus*). Eight years of data were collected at the drift-fences through 2002. Nine years of monitoring data were gathered using egg-mass counts and stream surveys through 2002. For details on methods and locations see the 1995 VForEM annual report.

No monitoring from 2003-2007

In 2003, funding from GMNF for continued monitoring was not available, and therefore monitoring was suspended. In the spring of 2003, the drift-fences in the Lye Brook Wilderness region were removed. To insure correct placement of fencing when monitoring resumed, before removing the old fences GPS coordinates were taken and the ends of the fences were marked with wooden stakes. The Forest Service personnel replaced these stakes with their permanent markers later. After a five-year break, fences were reinstalled at their exact previous locations in 2007. They were designed exactly as they had been originally and monitoring began again with the same field technician in charge as had been in charge previously. The original monitoring protocols were again used for data gathering with the hope of gathering three years of data before once again taking a five-year break in monitoring at this site.

Update for 2009

New data reporting schedule

Data were gathered from the three fences near the Lye Brook Wilderness during 2008 and 2009. The data from the 2008-monitoring year were examined and reported on in our annual report for 2008. However, as mentioned above, after that field season, it was agreed that as a cost-cutting and timesaving measure that the data gathered would no longer be analyzed and population indices generated on an annual basis. Consequently, the raw data have been gathered and entered into our database and a copy of those data have been forwarded with this report. The data will be analyzed and reported on after the 2010 field season.

Acknowledgments for drift-fence monitoring

Funding for the monitoring at Lye Brook was provided through a cost-share agreement between the Vermont Monitoring Cooperative (VMC) project of the Vermont Department of Forests, Parks, and Recreation and the Vermont Reptile and Amphibian Atlas Project of Vermont Family Forests. Colleen Jones was the local field technician.

Vermont Reptile and Amphibian Atlas Project

Background

Localized intensive monitoring

Amphibian monitoring at Mt. Mansfield and Lye Brook Wilderness provide 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 these sites 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 Project has grown since its inception in 1994 to involve over 3,000 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. This portion of the project has been funded regularly in recent years by the Vermont Monitoring Cooperative, with additional assistance from the Lintilhac Foundation and State Wildlife Grants from Vermont Fish and Wildlife.

Goals for 2009 Atlas work

The goals of the VMC funding for the 2009 field season were: (1) to gather data for the Vermont Reptile and Amphibian Atlas; (2) to update and improve the Atlas website; (3) to review and enter current and previous years' herpetological reports; (4) to forward hard and soft copies 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.

New data reporting schedule

This portion of the work also has begun an **every-other-year reporting schedule**. Attachment A of the 2009 agreement states "in 2010, if funding continues, the Subrecipient shall submit a written report summarizing the years results". A very brief summary of this year's Atlas efforts follows.

Update for 2009

The VT Herp Atlas database now contains over 73,000 records. During 2009, we entered over 4,000 new records of Vermont's reptiles and amphibians. These records originate from every county in Vermont and over 190 Vermont towns, gores, and cities. Over 550 volunteers (448 new) contributed reports this year and the Vermont reports include all known species of Vermont herptiles, except for the **Fowler's Toad and Boreal Chorus Frog**.

Missing Species

The last report of the **Boreal Chorus Frog** from Vermont was a tape made in 1999 by Mark Ferguson. This species has also declined throughout the southeastern portion of its range in Quebec and eastern Ontario.

The last documented report of the **Fowler's Toad** was in 2005, despite significant effort to locate the species in 2008 by an Antioch New England graduate student. An unverified report of the species in Vernon did come in this year from a volunteer by the name of Karen Given.

New Species

This year we received the first two documented reports of **Eastern Hog-nosed Snakes** (*Heterodon platirhinos*) from the state (Vernon). Two neonates were discovered and photographed in Vernon by two different families within one-mile of each other. Populations have existed very close to our borders in Montague, Massachusetts south of Vernon and in NY west of Fair Haven in Queensbury. A press release prepared by me and published in southern and western portions of the state, stimulated two more reports from likely areas but they were not accompanied with detailed descriptions or photos. Although, it seems likely that these two individuals were native, this species will remain hypothetical as a breeding species in Vermont until a cluster of documented records from multiple age-classes are gathered from a given area.

Another **Box Turtle** (*Terrapene carolina*) report was received from Windham County. This adds to a cluster of reports in that area that suggests a native breeding population either does or did exist in that area. However, no young have yet been found.

A **Squirrel Treefrog** (*Hyla squirrella*), an exotic from Florida, came with a boat delivery to Topsham. It has been sent home. Exotics arrive in Vermont on an almost annual basis, but so far they have not been able to survive our winters and establish populations as they have in warmer areas of the country.

Website

Regular updates have been made to the website (VtHerpAtlas.org) as a result of new discoveries (Hog-nosed Snake), updated documents, and new press coverage and resources.

Outreach

In addition to the press coverage; slide shows, educational displays, workshops, and field trips were used to educate more residents and landowners about herptiles. All contributors of reports were

contacted and thanked for their contributions if contact information was provided. In addition, many questions were answered and conservation recommendations given. These requests and reports came in at the rate of approximately four per day during the field season.

Data transfers

A copy of our 2009 drift-fence records from near the Lye Brook Wilderness accompany this report in the form of an Excel spreadsheet as per our contract. The hard and soft copies of this year's new Atlas data have been prepared and will be officially transferred to Steve Parren and Mark Ferguson of VT Fish and Wildlife at the March 16, 2010 meeting of the Reptile and Amphibian Scientific Advisory Group.

Acknowledgments

Website upgrades were made by Kir Talmage of Metasilk Webworks. Erin Talmage helped with all aspects of the field and lab work. Kiley Briggs assisted with fieldwork. Cindy Brown assisted with data entry and other office work. Many volunteers and collaborating organizations also contributed and we are very grateful for their help.

Additional funding in 2009 came from the Lintilhac Foundation and a Vermont Fish and Wildlife SWG grant.