

**Field Investigation of Northwestern
Rutland County for
Ambystoma opacum
(Marbled Salamander)**

Prepared for:

Vermont Natural Heritage Program
Agency of Natural Resources
103 S. Main Street
Waterbury, VT 05676

Prepared by:

Jim Andrews
Box 4220 R.D. 2
Middlebury, VT 05753

Date:

November 1988

Field Investigation of Northwestern Rutland County
for *Ambystoma opacum*
(Marbled Salamander)

I. Introduction and Background

The Marbled salamander is a relatively short (3 1/2 - 5 inches) and stout salamander with the heavy body and thick legs typical of its genus (*Ambystoma*). It is very easy to identify as an adult due to its distinctive pewter colored markings on an all black background.

In the 1950's, a herpetologist recorded the presence of a Marbled salamander near Inman pond in Northwest Rutland County. His notes indicate that he located one individual under a board, near a road within sight of Inman Pond. No other records are known in Vermont.

To the south the range of the Marbled salamander once extended to the counties in Massachusetts, directly south of Vermont's border. To the southwest in New York State, it's range once extended as far north as Greene County. Outside the northeast, their range extends to northern Florida and westward to Texas and eastern Illinois. In the southern New England range this species is considered uncommon.

Most salamanders are nocturnal and silent. They hide under leaf litter, stones, boards, bark, logs, or in underground burrows and rivulets. Salamanders of the genus *Ambystoma* are part of the mole salamander family. These salamanders spend the majority of their lives underground. Of the genus, the Marbled salamander is reputed to be the one most easily found close to the surface under leaf litter and debris. It also is reportedly able to tolerate drier conditions than the rest of the mole salamanders.

Marbled salamanders surface to breed and lay their eggs along the margins of swamps, ponds and vernal pools. Like other salamanders, their skin needs to stay moist, so surfacing, when it does occur, probably takes place on wet rainy nights.

These habits make it difficult to locate, but also provide for the possibility of its existing in Vermont without being officially verified.

Unlike other species of *Ambystoma*, the Marbled salamander migrates to its egg laying sites in the late summer or fall, September - October in the North (Behler and King). Its eggs are laid in anticipation of rising water levels later washing the eggs into the water or inundating the nest site. When submerged, the eggs mature and the young larvae develop. They develop very slowly, however, until the spring when the water warms and more food becomes available. These larvae should be the only young Mole salamander larvae present in ponds or pools in early spring, although other mature Spotted salamander larvae have been known to overwinter in northern areas (Bishop).

Along with the necessary suitable nesting sites, the Marbled salamander is reported to prefer "sandy and gravelly areas of mixed deciduous woodlands, especially Oak, Maple and Oak, Hickory". Mike Klemens is quoted as saying it frequents "trap rock slopes". (Degraaf and Rudis)

This habitat is quite common in northwestern Rutland County in general, and specifically in the area around Inman Pond and Rattlesnake Ridge where it was once reported.

If this report could be verified it would indicate either a previously unlocated range, a range extension, or a disjunct pocket of this species. In any case this species would likely be extremely rare in Vermont, and should benefit from our protection.

It was the purpose of this study to attempt to locate Marbled Salamanders or reliable evidence of them within Northwestern Rutland County.

II. Methods and Study Areas

I used a variety of methods to locate information, including the following methods which were suggested by Mike Klemens of the American Museum of Natural History, and Marc DesMeules of the Vermont Nature Conservancy.

1. Nighttime road searches: driving roads in good habitat during rainy nights in late summer through fall.
2. Active searching: by turning over rocks, boards, logs and bark. Also searching under leaf litter in good habitat, (spring through fall), particularly near potential breeding sites and during suspected migration times in hopes of locating adults or metamorphs, (recently transformed larvae).
3. Larval searches: a visual search and netting of vernal woodland pools and swamps for young larvae in spring.

I also found it useful to interview local people who lived or worked in the areas searched. Most people were interested and cooperative, and some of the more discerning viewers contributed some very useful information on their local herpetofauna.

Nighttime Road Searches

The area covered by car on nighttime road searches is roughly that area in northwestern Rutland County bordered on the east by Route 7, and on the south by Route 4. The remaining boundaries being that of New York State to the west and

Addison County to the north. Some nighttime road searches extended slightly south, northeast and north of these boundaries.

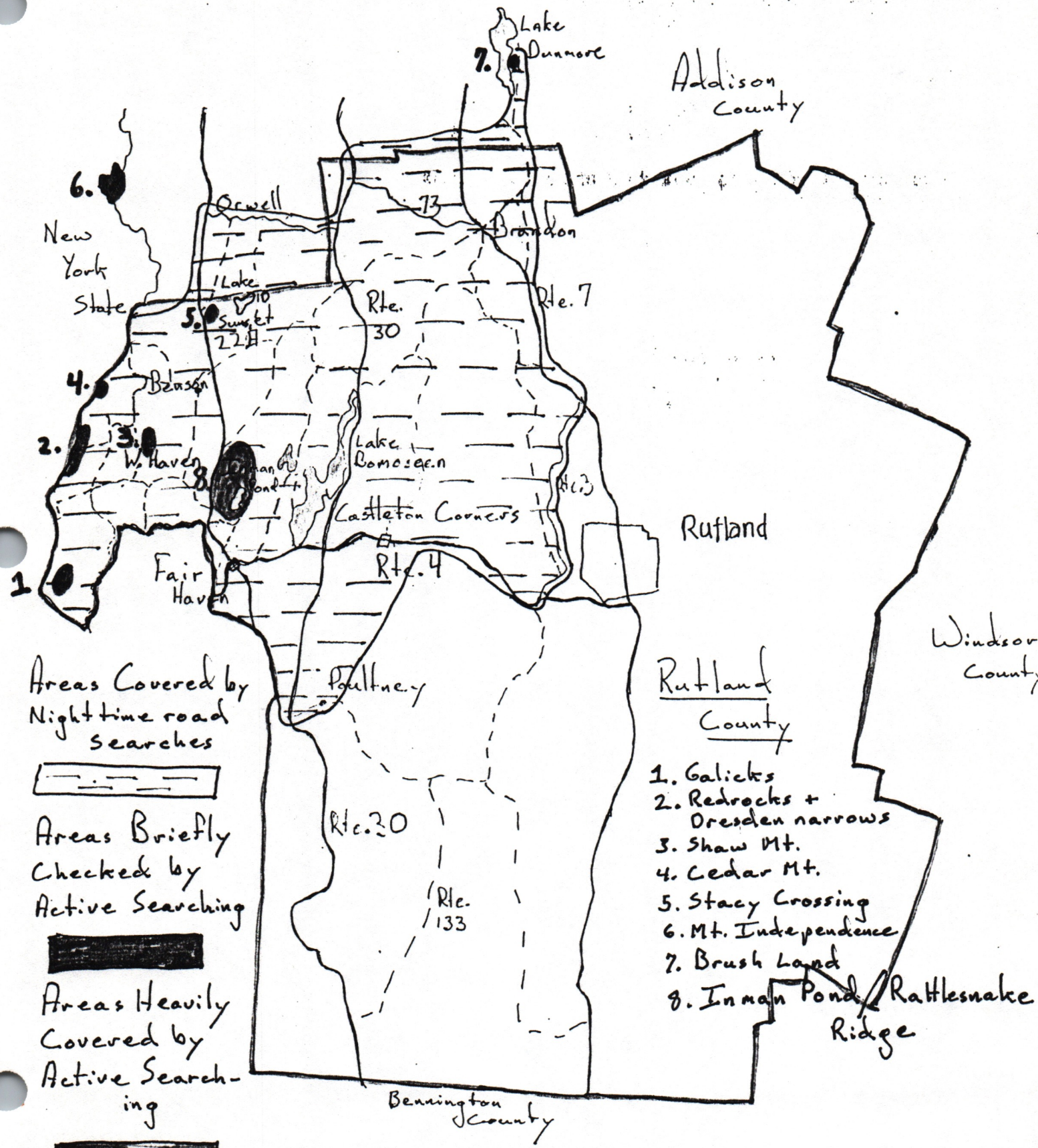
A total of 8 nighttime road searches took place between July 1 and October 22 with a total of 23 hours searched. Road searches took place on the following nights:

<u>Date</u>	<u>Area</u>	<u>Hours</u>	<u>Walked Inman Pond</u>
July 1	Orwell, Hubbardton, Castleton, Fair Haven	4 - 8:30-12:30	Yes
July 14	Orwell, Benson	2 - 10:00-12:30	
July 21	Orwell, Benson	2 - 9:30-11:30	
August 14	Leicester, Brandon Hubbardton, Castleton	2.5 - 8:30-11:00	
August 17	Leicester, Brandon, Pittsford, Proctor West Rutland	3 - 9:30-12:30	
August 28	Bridport, Shoreham, Orwell, Benson, Fair Haven	3.5 - 8:30-12:00	Yes
August 29	Fair Haven, Proctor, Castleton, W. Haven, Benson	3 - 8:30 -11:30	
October 22	Orwell, Benson West Haven	3 - 10:00-1:00	

Gaps within the schedule represent either dry spells, periods of time when rain was not heavy enough to soak the ground, or periods of time when the rains occurred only early in the day. I made a consistent effort to get out on wet and rainy nights particularly after a period of rain stretching for a day or more. Very few nights were missed.

On a few of those nights I spent time on foot on the small logging roads around Inman Pond, searching with a flashlight. They are indicated on the chart. On some nights I made a point of passing two vernal pools which I located during the daytime searches. These seemed to hold potential as egg laying sites and were located close to back roads in Benson and West Haven. The total area sampled by night time road searches is shown on Map 1.

Rutland County Area Covered



Map 1

It should be pointed out that nighttime road searches at best represent a search of up to a few hundred yards distance perpendicular to the road. This is true only if the road is between an egg laying site and the normal summering ground of the salamander. So while large areas of the map are shaded as covered briefly by the road search, it actually represents a rather limited sample area immediately adjacent to the roads traveled. Areas more completely covered by active searching on foot are marked as such on the map.

Active Searching, Larval Searching and Interviews

I concentrated my active search efforts on the Inman Pond/Rattlesnake Ridge area of Fair Haven, which is the area of the reported sighting. However, I also spent a considerable amount of time on foot doing active searches for larvae (spring and early summer), and for adults (spring, summer and fall) in a variety of other locations. The other areas most thoroughly searched were primarily those which I was also scouting for potential Five Lined Skink habitat.

In addition, another site that was searched on foot was located in Salisbury (Addison County) east of Lake Dunmore on the land of Don Brush, Sr.. This area held a number of interesting temporary pools and boggy depressions which caught my interest. Two other sites were briefly searched.

All areas held varying amounts of potential Marbled habitat. The sites and an approximate amount of the hours spent actively searching in each, are listed below. Also included in the chart are the number of visits made to each site and the number of interviews with local residents regarding their knowledge of Reptiles and Amphibians in those areas.

A total of 28 site visits were made to 11 areas. 14 interviews took place and 73.5 person hours were spent in active search for Marbleds.

<u>AREA</u>	<u># of Visits to Area</u>	<u># of Interviews w/ Locals re: Area</u>	<u>Person Hours Spent Searching in Area</u>
Inman Pond/Rattlesnake Ridge in Fair Haven (Rutland County)	11	4	41
Mt. Independence in Orwell (Addison County)	3	1	6.5
Cedar Mt. in Benson (Rutland County)	1	2	1
Red Rocks Bay in Benson (Rutland County)	1	2	3
The Narrows in West Haven (Rutland County)	3	1	4
Bill Galick's Farm, West Haven (Rutland County)	3	1	5
Shaw Mt. in Benson (Rutland County)	2	2	5
Area Southeast of Stacy Crossing in Benson (Rutland County)	1	1	2
Brush land in Salisbury (Addison County)	1	1	2
Other Areas (Addison and Rutland Counties)	1 each		1.5,1
<hr/>	<hr/>	<hr/>	<hr/>
TOTALS (11 areas)	28	14	73.5

III. Results

Although some very good looking potential Marbled habitat was located and searched, and a total of thirteen species of reptiles and fifteen species of amphibians were verified, neither nighttime road searches, active searching for larvae, metamorphs, or adults, or interviews turned up any evidence of the Marbled Salamander. No specimens were located at any site during this study period.

Many individuals interviewed described a variety of salamanders including the Spotted Salamander, which is significant because it too is a mole salamander and is not often seen outside of its brief breeding period. However, no one described anything remotely similar to a Marbled Salamander which is a very unique and striking salamander and would not be easily forgotten, or confused with another species.

During active searching, Spotted salamanders were located at two sites. The Four Toed salamander was located five times at one site (Inman Pond). It would seem this is an indicator of effective searching, for the Spotted is quite fossorial during this time period and the Four Toed is thought to be unusual at any season, particularly this far north. Still no *Ambystoma opacum* were located.

At this time then, we have no new evidence that the Marbled salamander exists in Northwestern Rutland County. The information I have gathered suggests that it does not.

However, a great deal of useful baseline information on other herpetofauna was gathered as well as general habitat information and some information on other unusual or rare species. I have attempted to give a general overview of this information in the following charts. For more details about a specific species, site, or the specific conditions under which information was gathered, refer to my field notes printed in their entirety in this report. Many other plant and animal species of interest not in the charts are also listed there.

Of particular interest to me are the five *Hemidactylium scutatum* (Four Toed Salamander) that were located at the Inman Pond/Rattlesnake Ridge site. This was the only site where I have located any of this species. It is just north of the range suggested for this species in the herpetological literature. As far as I know there has been only one other report to date of this species this far north and that was one individual on Snake Mt., Addison County, in 1986, located by Mike Klemens.

Habitat Potential of Sites Actively Searched

Rattlesnake Ridge/Inman Pond

Excellent, continuous open dry deciduous hilly woodland with many potential breeding sites. It is largely undisturbed except for the devastating clear cut and bulldozing along the eastern shore of Inman Pond which entirely removed those potential breeding sites.

Bill Galick's Farm

Very good continuous deciduous woodland with Oak and Hickory and some scattered vernal pools, ponds and swamps. This area is largely undisturbed.

Shaw Mountain

Very good; open dry continuous woodlands with a few very nice vernal pools. This area is also largely undisturbed.

Stacy Crossing

Good, open dry rocky deciduous woods with a few vernal pools.

Red Rocks and Dresden Narrows

Poor; few potential breeding sites, some areas are pasture, hayfields and coniferous woods.

Don Brush Land

Poor; mature coniferous woods, relatively flat, with large boggy areas.

Cedar Mountain

Poor; a few potential breeding sites in largely coniferous woods.

Mt. Independence

Poor; very disturbed by people and cattle at present and in past. One vernal pool did hold Spotted salamanders despite extensive building, pasturing, past clearing and logging.

Information Gathered from Active Searches and Interviews

Site	Herp Species Seen, Heard or Physical Evidence Found	Additional Herp Species Well Described in Inter- views, w/ #s of References	Hypothetical Species from Interviews or other clues, w/ #s of References	Other Species of Interest in Area
<u>Inman</u>	<u>Ubiquitous</u>	Black Rat snake 5	Chorus Frog 2	Osprey - 3 sightings
<u>Pond/</u>	Red Backed Salamander (100s)	Milk Snake 3	Spotted Turtle 1	Snowy Owl (reported)
<u>Rattlesnake</u>	(Many Lead Phase)	Timber	Wood Turtle 1	Black Scoter 1 flock
<u>Ridge</u>	Red Spotted Newts (100s)	Rattlesnake 3	Black Racer 1	Pill Clams 3 locations
<u>Fair Haven</u>	Spring Peepers	Smooth Green Snake 1	(years ago)	Narrow Leaved Cattails
	<u>Common in Localized Habitat</u>			Chestnut Oak
	Northern Two Lined Salamander			
	Green Frogs			
	Garter Snakes			
	Pickereel Frogs			
	<u>Smaller Numbers Located</u>			
	Wood Frog			
	American Toad			
	Painted turtle			
	Bullfrog			
	Gray Tree Frog			
	<u>Very Few Located</u>			
	Northern Brown snake	1 adult		
	Four Toed Salamander	5		
	Northern Red-Bellied Snake	2		
	Spotted Salamander	1 adult		
	Northern Water snake	1		

Comments:

- Eastern Shore of Inman Pond clearcut and bulldozed
- Some Peepers made sounds similar to Chorus Frogs; were they Chorus Frogs?
- Turkey Vultures may nest here
- A very large continuous stretch of very interesting broken hilly habitat with many water pockets and varied terrain almost totally undeveloped
- 1000s of Gypsy Moth caterpillars
- Many Lead Phase Red-Backed salamanders
- Reference was made to larger numbers of Black Rat snakes and Timber Rattlers in past, numbers have declined

<u>Mt.</u>				
<u>Independence</u>	Red-Backed Salamander- few	E. Milksnake	None	Yellow Oak (Int.)
<u>Orwell</u>	Spotted Salamander (many larvae at one site)	Red-Spotted Newt		Four-Leaved Milkweed (Int.)
	American Toad few			Walking Fern (Int.)
	Green Frog few			Purple Stemmed Cliffbrake
	Leopard Frog few			Rough Winged Swallows
	Garter Snakes few			
	Bullfrog few			

Comments:

- One good vernal pool held Spotted Salamander larvae at base of Northern cliff face, otherwise a very dull area for Herps.
- Extensively disturbed by man and cows

Site	Herp Species Seen, Heard or Physical Evidence Found	Additional Herp Species Well Described in Inter- views, w/ #s of References	Hypothetical Species from Interviews or other clues, w/ #s of References	Other Species of Interest in Area
<u>Red Rocks</u>	Painted Turtle (many)	Black Rat snake 2	Black Racer 1	Yellow Oak
<u>Bay</u>	Map Turtle 2	Stinkpot (shell) 1	Fish Crow	Blue Gray Gnatcatchers
<u>Dresden</u>	Snapping Turtle (few)			
<u>Narrows</u>	Stinkpot Turtle 1(shell)			
<u>Benson and</u>	Black Rat Snake (skins) many			
<u>West Haven</u>	Garter Snakes (few)			
	Leopard Frogs (scores)			
	Pickereel Frog (few)			
	Northern Two Lined (few)			
	Green Frogs (few)			
	Bullfrogs (few)			
	Wood Frog (few)			
	Northern Brown Snake 1			

Comments:

- Extensive marshlands
- Very good wetland habitat along Lake Champlain
- Water Chestnut clogs almost all open marsh and shallow bays
- Thousands of Gypsy Moths hatching

<u>Shaw Mt.,</u>	Spring Peepers (many)	Black Rat snake (2)	Spotted Turtle	n/a
<u>Benson</u>	Gray Tree Frog (few)	Spotted Salamander (1)		
	Pickereel Frog (2)	Jeffersonianum Complex		
	Green Frog (many)	Salamander (1)		
	Garter Snake (few)			
	Red Spotted Newt (few)			
	Red-Backed Salamander (1)			

Comments:

- Dead Black Rat snake found in road @ 1/2 mile south of area
- Very good Marbled habitat, a variety of vernal pools
- No reports of Timber Rattlesnake either present or in last 20 years

<u>Cedar Mt.,</u>	Pickereel Frogs (few)	Black Rat	none	n/a
<u>Benson</u>		Spotted Salamander		

Comments:

- Large old growth timber supposedly in area though I didn't get to it
- Reportedly an Indian burial ground described as a large rock mound near the lake - I did not get to that area
- Historical-word of mouth denning site for Timber Rattlesnakes
- Landowner described a trailer with many long snake skins in it
- Talus slopes - need a visit in spring

Site	Herp Species Seen, Heard or Physical Evidence Found	Additional Herp Species Well Described in Inter- views, w/ #s of References	Hypothetical Species from Interviews or other clues, w/ #s of References	Other Species of Interest in Area
------	---	---	---	--------------------------------------

<u>Stacy</u> <u>Crossing,</u> <u>Benson</u>	Garter Snakes (few) Wood Frogs (few) Red Eft (few) Black Rat snake (1 dead in road)	Black Rat snake (2 killed 1/2 mi. east) N. Brown Snake Red-bellied Snake	Timber Rattlesnake (1/2 mi.east)	n/a
---	---	---	-------------------------------------	-----

Comments:

- dry rocky open exposed woods, with broken slate
- a few small vernal pools on top

<u>Don Brush</u> <u>Land,</u> <u>Salisbury</u>	Spotted Newt Red Backed Salamander Spotted Salamander	Garter Snake E. Milk Snake Smooth Green Snake	none	Showy Ladyslipper
--	---	---	------	-------------------

Comments:

- Large mature evergreen woods 80 ft. Pines, Hemlocks and Oaks
- Interesting kettle holes (?) sunken bog areas surrounded by temp. pools

<u>Galicks</u> <u>Farm,</u> <u>West Haven</u>	Red Spotted Newt (many) Garter Snake (few) Leopard Frogs (many) Green Frogs (many) Northern Water Snake (1) Black Rat Snake (many skins)	Five Lined Skink (4) Timber Rattlesnake (many) Painted Turtles Snapping Turtles	none	Many Gypsy Moths Winged Sumac Yellow Oak (Fide W. Ellison)
---	--	--	------	--

Comments:

- Bill Galick mentioned another type of Black snake pointed out to him by Kinsmen Lyon. He called it the Mt. Blue Racer.
- He and his friends have collected 100's of Timber Rattlesnakes for bounty on his land
- Small vernal pools found on top of ridge
- Years ago, Bald Eagles hunted along the lake and hawks (Peregrines?) nested on the cliffs.
- Galick claims Mt. lions once had cubs on his mountain
- Refer to notes for more information.

Information Gathered from Nighttime Road Searches and Daytime Road Kill Checks

Site	Herp Species Seen, Heard or Physical Evidence Found	Hypothetical Species	Other Species of Interest in Area
Nighttime Road Searches throughout Area	American Toad (few) Green Frog (many) Bullfrog (many young) Leopard Frog (many) Gray Tree Frogs (many singing) Smooth Green Snake (1) Spring Peepers (few) Red Spotted Newt (few) Garter Snakes (few) Ring Necked Snakes (3)	Wood Frogs } Fast leapers, Pickerel Frogs } difficult to identify in roads	Opossum Coyote

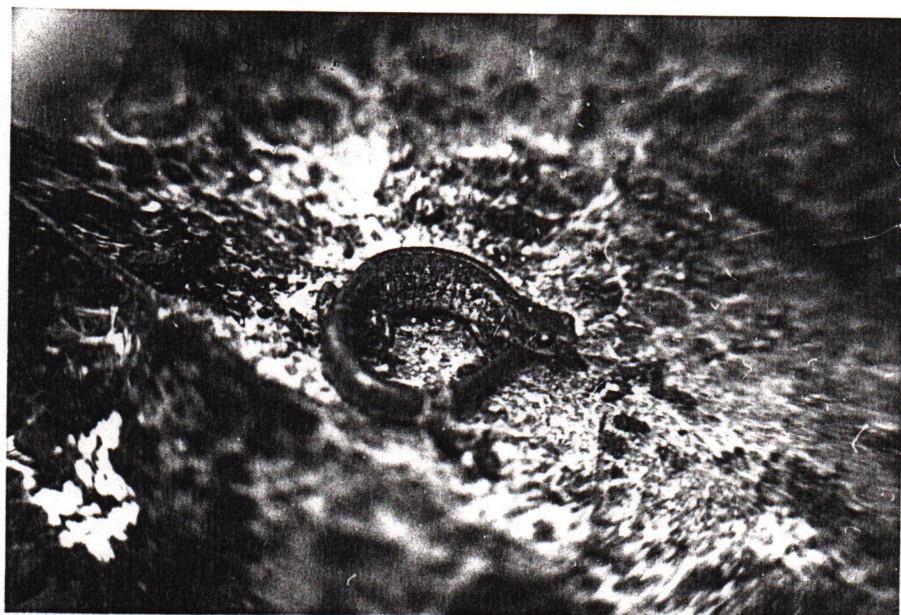
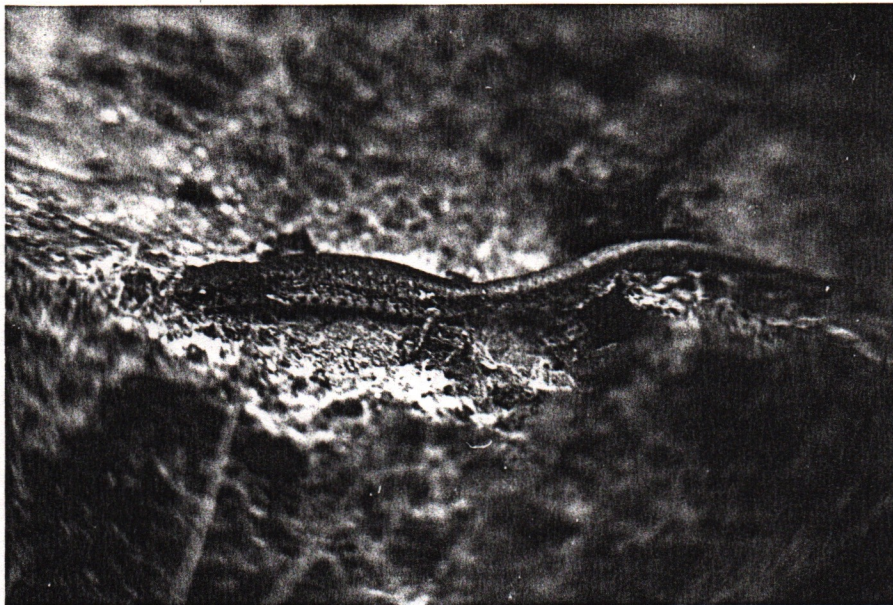
Comments:

- Last road search of October 22 revealed no movement of any reptiles or amphibians
- See notes for more details

Road Kill Checks including Fall Migration	Black Rat snakes (2) N. Water snakes (2) N. Brown snakes (many) N. Red-bellied snakes (many) Garter Snakes (many)	n/a	n/a
---	---	-----	-----

Comments:

- Fall migrations to denning sites revealed mostly N. Brown snakes with Red Bellied the 2nd most frequently found and Garter snakes the 3rd, N. Water snakes the least.
- Black Rat snakes were found in Mid-summer



IV. Conclusions

Even though I have spent a considerable amount of time in the field at a variety of sites using a variety of methods, I can't rule out the possibility of Marbled Salamander sites existing within the area checked. Being a mole salamander, its habits don't lend itself to being easily located. Spotted salamanders, a species frequently described in this area were only located a very few times due to the dry weather and their more fossorial habits in part, but also to the fact that it wasn't their breeding season. If a field worker were to miss the two week period in late March and early April during which they breed and deposit their eggs, they too might go unreported. Likewise, with a species that is likely to be much less common to begin with. If I didn't happen to be in the right habitat at the right time and under the right environmental conditions, I could easily have missed them. Still no one anywhere described them or recognized a drawing of them. In addition, the early summer of 1988 was extremely dry and hot, which would make most reptiles and amphibians more difficult to locate. Still, hundreds of individuals of 28 species of reptiles and amphibians were located, and I was in the field over a wide period of time and under a wide variety of conditions., and at a variety of sites.

So although it is not impossible that this species exists in this study area, I feel it is unlikely.

However, Vermont contains more habitat of the Oak/Maple, Oak/Hickory woodland type. Areas where this habitat type mixes with sandy or gravelly soils, trap rock slopes, broken hilly terrain and a variety of trapped water sites (including vernal pools, swamps and semi-permanent ponds) could hold Marbled salamanders. If these areas have been relatively free from disturbance and don't border frequently used roads then they would hold even more promise as potential sites.

Much of Vermont's habitat of this type still remains unchecked. The most likely regions for this habitat to occur in would be adjacent to the southern Connecticut River valley and the western border of Vermont particularly the area south of that covered in this study.

Areas within this study area that were not actively searched but only covered by nighttime road searches have only been sampled, not well studied, and may still hold small pockets of Marbleds.

Some areas that held good habitat and were actively searched were searched during such dry conditions and off peak times that small populations could have been missed.

Of the sites I checked, those that looked good enough to check again are listed below.

Rattlesnake Ridge/Inman Pond Area, from Glenn Lake to the top of Great ledge, north to Hollis Bartholemew's home and Cobble Knoll. Even with the hours I put in to this area, it is so large that much remains unchecked. It is also largely undisturbed and holds excellent habitat with many vernal pools and swamps.

The top of Shaw Mt. which is a much more limited area but excellent habitat with a variety of small vernal pools and 1 large one. This area was only checked briefly and under very dry conditions.

The top of Austin Hill on the Galick Farm north to Bald Mountain which again is a largely undisturbed continuously wooded area with a variety of small vernal pools, swamps and ponds, and a lot of open Oak and Hickory woodlands.

The area southeast of Stacy Crossing was broken hilly Oak/Hickory woods along the ridges with a variety of small vernal pools. Further south are a lot of larger swamplands adjacent to deciduous woodland. I visited the site only briefly and again during very dry conditions.

I would suggest that these areas be checked in early spring for larvae, and actively searched after wet periods, particularly around suspected migration times both for metamorphs leaving the pools and for adults coming to them to lay their eggs. Other prime habitat areas around the state which were previously mentioned should be searched as well, but with the addition of interviews and nighttime road searches.

I am concerned about the type of logging/road building which is going on East of Inman Pond. This type of construction permanently removes potential breeding sites. It seems not only unnecessary, but unwise. Other types of selective cutting and smaller scale road building would have much less impact on habitat, and create fewer siltation problems in an area that is a town water supply.

This particular area is not only the only site in the state where Marbled Salamanders have ever been reported, but it is one of two proven Rattlesnake sites and the only area in my study that held Four Toed Salamanders, a species whose distribution in the state is largely unknown, but is considered uncommon to rare even within its range. These reports of Four Toed Salamanders (Five in all from this area) are the only reports I am aware of north of Bennington County with the exception of 1 individual found recently in similar habitat in Addison County. In addition, the Black Rat snake, another of Vermont's endangered species, is now known to be reported by a number of individuals in this area.

The whole area from Glenn Lake and Scotch Hill Road to the east Cobble Knoll to the north, Route 22A and the Great Ledge on the west and south to Sheldon Road, and Old Marsh Pond, seems to be an ecologically unusual and valuable area that deserves protection. The fact that much of it is already a town water supply has prevented most development and lends itself well to protection for both purposes. It is almost entirely undeveloped now and includes a variety of habitat types including lakes, ponds, wetlands, marshes, vernal pools, rocky deciduous woodlands, ledges, talus slopes and wooded swamps.

Two other undeveloped, ecologically varied and unusual areas which in my opinion deserve protection and are starting to get it are the Galick Farm area and the Shaw Mt. area. The Galick Farm area not only holds Timber Rattlesnakes and Black Rat snakes but also is the only site in Vermont known to have Five Lined Skinks.

Although it is beyond the scope of this fieldwork, research is ongoing on the effects of acid rain on the hatching success of mole salamander eggs. The eggs have been shown to be viable within a limited PH range. Since mole salamanders lay their eggs in or near pools created by run off (rain and or melted snow) the PH is largely determined by that of the precipitation. Collections of precipitation in Vermont have shown some very acidic rain. Perhaps the Marbled salamander, whose foothold may have been tenuous to begin with, has not been able to reproduce successfully. Whether this is or not the case, studies could be done on a sampling of mole salamander breeding sites to watch for population changes and measure the PH ranges.

In conclusion, the need seems clear for:

- 1) more field work to determine the location of possible Marbled salamander range and populations,
- 2) habitat and environmental protection to allow for this and other species to continue to exist as viable populations and
- 3) more basic herpetological field work to determine ranges, habitat, baseline populations and population changes of all Vermont's reptiles and amphibians.

All of these seem necessary in order for sound non-game protection and management decisions to be made in the future. Without habitat and environmental protection there will be continually less to protect and manage.

Sources Cited or Used

Behler, John L. and Wayne F. King. The Audubon Society Field Guide to North American Reptiles and Amphibians. New York: 1979.

Bishop, Sherman C. The Salamanders of New York. New York State Museum Bulletin, No. 324, June 1941.

Brodie, Edmund D. Jr., and Hobart M. Smith. Reptiles of North America. New York: 1982.

DeGraaf, Richard M. and Deborah D. Rudis. Amphibians and Reptiles of New England. Massachusetts: 1983.

DesMeules, Marc. Personal communication - The Vermont Nature Conservancy, 1988, Montpelier, Vt.

Klemens, Mike. Personal communication, The American Museum of Natural History, New York, New York, 1988.

Smith, Hobart M. Amphibians of North America, New York, 1978.

FIELD NOTES: Spring - Fall 1988
On the Search for the Marbled Salamander and the Five Lined Skink

April 30th - Saturday

Overcast - 40's, Recently heavy rain
(2 days)
Two people - 1:30 to 5:30 p.m.

First visit to Inman pond. Searched land adjacent to most of the east shore and adjacent hills.

Methods - turning over rocks, logs, boards and netting water for larvae.

Herp Species:

Red Backed salamander 100+
Red spotted Newt: adult in water- 30+
Red Eft. - 50+
Snake - Northern Brown snake - 1
Frogs - Spring Peepers (heard and caught) - 50+

Other Species:

Osprey
Sound of Peepers (some) sounded broken...suspiciously like Western Chorus frogs (*Pseudacris triseriata*). I searched but could not locate any frogs other than peepers.

May 1- Saturday

Cloudy, Overcast, 40's
1 person, 5:30-8:30

Returned to Inman, searched North shore and remainder of East.

Methods: (the same)

Herp Species:

Red-Backeds
Red Spotted Newt
Northern Two-Lined (located in and around outlet to north)
Adult: 6-10, 80 mm
Larvae: 4, 20mm - 50 mm
Spring Peepers - 100's singing, many in Beaver Meadow

Comments:

Tried again to pin down one of the strange song Peepers (unsuccessfully) - very similar to peeper song but broken.

Osprey in area again and group of what was probably Common Goldeneye.

May 7 - Sunday

Sunny, clear - warming, drying
70's

Spent 2 hours (11:30 - 1:30) on rock slide at southern end of "Great Ledge" in West Haven. Met and talked with landowner for permission to park and access (John Merald). Sat and still hunted using binoculars.

Herp Species:

John mentioned seeing Garters and described what sounded like a Black Rat or possibly a Racer.

I saw what I thought were the last six inches of the tails of two Garter snakes disappearing into holes on the talus slope. One moved very quickly, making me wonder if I wasn't seeing most of a skink instead. They were not on vertical or even slanted micro surfaces, but flat areas between rocks with leaf litter; not where I had been looking, on rock and tree stump surfaces.

Other Species:

Black and White warblers singing. Large pine held a large 3 foot stick nest at top of Talus slope, about 30 feet above slope.

One Red Tail and 4 Turkey Vultures in area. Vultures appeared to land on cliff face.

Spent 1:45 - 4:45 pm on South shore of Inman pond. Netting and turning for salamanders. Depressions made by recent logging held egg masses, Green frogs, and Red Spotted newts in about one foot of trapped water. Established low drainage areas held a lot of cat tails and other marsh vegetation. I found egg masses with a continuous outer membrane of about 75 eggs dark embryos, with a few white ones.

Herp Species:

Green Frogs

Red Spotted newts (One Eft in net about 1 inch long)

Red-Backeds - (two very large, slightly more rounded with lead coloring); many other regular.

One Garter Snake

May 8th - Sunday

Hot, upper 70's
Dry, sunny, clear

Spent 2 hours late afternoon - 3:30 - 5:30 - at same slide on Great Ledge. Spent more time further south and over slide to the top of the ledge. No sightings.

May 14 - Saturday

Cool, 50's - mid 60's
Clear, sunny morning

Spent early morning on Great Ledge. Too early, no sun on rocks yet,
8:30 - 9:30. Wrens calling, Rose-Breasted Grosbeak.

Moved to land of Hollis Bartholomew, at north end of ledge. Maps show some more southerly facing steep slopes, south of his home. Got involved in lengthy discussions with Hollis, who appears to be an interested and discriminating observer. His comments:

Rattlesnakes

- none on his land for 10-15 years now
- used to be many (lived there since 1916)
- heavily hunted and collected.
- he killed a number himself; one had eaten a rabbit, one red squirrel, some chipmunks.
- hunt chipmunks in blackberry bushes in late summer
- "used to be quicker to rattle, became much shyer" (?)
- some more recently on slope facing Glenn Lake
- he heard that there were more left on the "2nd ridge"
- main den behind bait shop on 22A (Eds)
- one up to 56 inches (largest he killed) 1 inch high, 6 inches wide
- great variation in color, light brown to velvet, pure brown, yellow stripes on lower sides, "very attractive."

Black Rat

- once very common
- many lived around and in his mill
- ate birds and eggs
- climbed straight up poles and studs
- young looked like young of Black racer pictured in Golden guide but adults had white chin
- young appeared in fall (what happened to middle-sized snakes?)

Also described:

- possible Black racers (light blue belly)
- Ring necked snakes
- Red Bellied
- Northern water snakes
- Garters
- Spotted adders (Milk snakes)
- Red Spotted Newt

However, no recognition of Five lined Skink or Marbled salamander from description or picture.

Short hike up past the Cobble (11:00 - 12:00); revealed:

- Red Spotted

- Red Backed
 - Northern Two-lined
- Didn't get to desired spots....

Comments: Great Birding; Northern Waterthrush, Scarlet tanager, Wood and Hermit thrush, Myrtle and Yellow warblers; very interesting marshy terrain.

CONVERSATION WITH MIKE KLEMENS May 31, 1988

Five Lined Skink (Eumeces fasciatus)

Best time to search - Mid-May to Mid-June

Habitats

- Granite, Pitch pine, shrubby, thickly covered, deep duff layer
- Exfoliated - Schists
- West or East facing, tops of very steep ridges, open

Early June 9-10 a.m. , might be seen on overcast, or cool, windy days all summer. Rarely seen sitting out; really hot sunny days not good.

- Turn rocks - on cool mornings, afternoons and overcast days, June-July

Marbled Salamander (Ambystoma opacum)

- Look for larvae through Mid-June
- Look for Young Adults - June-July, rainy nights
- Look near vernal pools in August, September- concentration around Labor day
- Preserve larvae in 13 to 1 Buffered Formula - limestone, Formalin/water (37%) (40%) - Cut 13 to 1 CaCO_3
- Sandy, well drained soil, acidic.

Spotted Turtle

- Just five miles south of Vt. border, Kettle hole - Take a week in late April or May to look for them in the Vernon, Guilford area.
- Best bait for turtles - Sardines in soy oil (Port Clyde Sardines), re-bait sardines daily, leave some of trap out of water.

Miscellaneous

Call him - 914-967-4419 - 9-10 p.m., 4-6 p.m. Mike's Thesis - The Variation and Distribution of the Turtle *Chrysemys picta* (schneider) Masters, 1978 - Univ. of Ct.

- Good Turtle traps - Memphis, Net & Twine, Memphis, TN

Dipped 1 inch mesh, \$50, 2 1/2 ft. hoop - 901-458-2656.

June 4th. Saturday

Warm, partly cloudy
upper 60's 9-12 p.m.

I traversed the length of the southern piece of the Great ledge just under the cliffs until I reached the first gap.

Method: Primarily rock turning, although I sat briefly twice. In most cases, the substrate was a fairly deep layer of coarse stone not duff as Klemens said to look for. Many stones were on such steep slopes that they slid away when disturbed.

Ants, Millipedes and 1 Red Eft were exposed.

Leaf cover has come out dramatically since the last visit.

Other species:

Turkey vultures hunting in fields;

R.B. Grosbeak

Chestnut oak, Shagbark Hickory, Vir. Creeper, Hemlock, Hop Hornbeam

June 5 - Sunday

Warm, partly cloudy, 70's
9:30 - 2:30

Starting from old Rte. 22, I traversed almost the full length of the southern ridge of the Great Ledge. I covered just above the cliffs turning rock slabs and logs. The habitat looked good with many exposed areas showing bedrock interspersed with pine, Chestnut oak, Shagbark hickory and shrubbery. The duff layer was much deeper.

Going north, I uncovered only ants, beetles, millipedes, centipedes and land snails.

Coming back south, I went further east and discovered a series of vernal pools and boggy areas which I investigated for larvae. A few held green frogs, gelatinous masses of eggs, (which were either all hatched or dead) and many tadpoles.

Under an oak log about 30 yards from one pool I found an adult male Four Toed Salamander (Hemidactylium scutatum) 64 mm long, curled up. It had about 13 costal grooves, the noticeable constriction at the base of its tail, with a white belly, black spots along the lower side and under the chin. I checked its rear feet and found 4 toes. The inner most toe was the shortest followed by the outermost, the 2nd innermost with the third longest. A central dorsal groove extended to the tail constriction, splitting anteriorly and extending to the eyes which protruded. The color in front of the "U" was more orange than posterior to it, grey-orange.

I found a 2nd specimen within a few yards of the pool in a small rotten log. It was almost identical but its tail was missing, however covered over with skin. Both

individuals had a short flat nose. The woods in general were dry and rocky with oaks and ledges.

Other Species:

Myrtle Warbler
Cedar Waxwings
Pink Lady slipper
Blue Flag
Ruffed Grouse (with young just flying)

Comments:

Many tent caterpillars and something very similar but shorter, probably Gypsy Moth caterpillars, feeding on the Chestnut Oaks. Some were badly defoliated. In areas they made a constant noise like that of a light rain hitting the dry leaves. Also found one piece of a snake skin, torn around 1 inch long by 1/2 inch wide.

June 22 - Wednesday

Warm 70's, Overcast, after two weeks of hot sunny weather, w/ no rain. Very dry. 10 - 2:30 pm

Started from old 22A on south end of Great Ledge, worked east then north, along east side of southern end. Habitat looked similar to habitat in slide from Klemens. Turned many logs, rocks, etc. ...no skinks.

Vernal pool mentioned in last entry was completely dry. Vegetated pools (Ferns, Blue flag, shrubs) held deeper wet muck, but very little water, very small sections held tadpoles.

Two Red Efts were found under rocks and logs in this area.

Located some small swamps, vegetation (Royal fern, tussocks, etc.) and vernal pools northwest of Inman pond. In the dried outlet of the swamp I located a group of five Red Efts with a small (about 40 mm) 4 Toed Salamander under a rock in the bed. It had an orange tail, opaque gray-orange trunk and head. Tail constriction visible but less so than on others. Toes: underside white with black spots.

Herps:

In stream beds or in dry pools and surroundings,
15-20 Red Efts
2 Red Backeds, 1 (lead phase)
1 Wood Frog
1 Spring Peeper, very light and skinny

In Inman pond:

Pickerel Frog - small, brown

Other species: Land snails, millipedes (large), Camel crickets, ants.
Two Wood lilies in blossom.

June 24th - Friday

Partly cloudy, 70's,
Dry, 1:30 - 5:00

Visited Whippoorwill site with Chris Fictel. Skunk cabbage along Rte.7 in Salisbury. 100's of skunk cabbage.

Final visit was to south end of Buck Mt. Waltham. Large south facing cliffs with some talus at bottom. Nice wetland area at base. Talus held many basking Garter snakes (10-20), many quite large, plump and relatively tame. Spring at base held Dusky salamanders. Searching revealed 5-10 Redbacks, and 5-10 Red Efts.

Open areas at top looked like potential skink sites though limited in area and number and consisting of heavier chunks, not slabs. None found.

Other Species:

Wild onion

Fragrant Sumac

Canadian Yew

Wood frogs, hundreds of very small @ 15mm hatchlings

June 26 - Monday

Low 70's, Overcast, recent rain
(very little) 8:30 - 2:30

Visited Mt. Independence' western face on lake. Log and rock turning on top revealed 3 Red Backeds. I turned rocks, logs, and sat and observed for short 15 minute periods on the west face. The southern extreme of the face is heavily vegetated with *Taxus canadensis* at the bottom and White Cedar on the slope, with an undercover of shrubbery including American Fly Honeysuckle and herbaceous growth including a lot of Wild Ginger. Most blocks of limestone were moss covered. Largely dark and damp. It did not appear to be good skink habitat.

North end of mountain had exposed limestone cliff faces with a 20-30 yard scree slope of limestone blocks at the bottom. It was much more open and dry. All relatively level areas had been heavily browsed and trampled by cows.

2 caves drain sulfur and iron stained water in one area. Phoebe and Rough winged swallows nested in the larger one.

Wild Ginger, Bladderwort, Poison Ivy, Virginia creeper, Hop Hornbeam, a few Hackberry all were noticed. A vernal pool at the base of the slope held many (100's?) salamander larvae, some of which I collected and later identified as Spotted Salamander larvae. All were between 30 and 45 mm, had wide broad heads with 3 pairs of long branching gills, no balancers. Front legs longer than rear, a dark line extending from the eye to the nostril, no pigment on their undersides, background on back, side and fins pale orange, green, brown, with many small black markings, mid-lateral area without markings forming a pale stripe on each side. Tail keeled above and below and reaching almost to gills. There were no larger markings or blotches of any kind. Front feet- 4 toes, Rear - five.

Other Species:

- Purple stemmed Cliffbrake (smooth?) I counted at least 6 clumps growing on the cliff face. I assume there were more.
- Winter wrens
- American Toad
- Green Frog
- Leopard Frog

Comments:

No Red Efts anywhere
No Red-Backeds below cliff
Does not appear to be the best skink habitat

June 28 - Tuesday

Low 70's, clear, dry
9:00 - 2:30 pm

Returned to Mt. Independence, checking under logs, rocks, etc., and sitting near exposed rock in what appeared to be the best habitat. (On talus in area of cave at base of limestone cliff and at top of the same cliff near the 1776 crane foundation) In my opinion the most likely habitat was near the historic crane foundation (just below it and on both sides.) In that area I found two Garter Snakes basking on exposed ledgy areas at the top of the cliff. One other was found dead in an area just south. 6 Red-Backed salamanders were located on the top plateau.

Other Species:

Green Frog - In pool at base of cliff
Leopard Frog - " " " " "
Bull Frog - Edge of lake
Myrtle Warbler
Black & White Warbler
American Hornbeam
Gypsy Moth Caterpillar (110 under bark of one log, 2 ft. long)

Comments:

Although the area is rocky with exposed ledge in places, what seems to be the best habitat is very limited. All but the steepest areas are heavily grazed and trampled. The area has been developed and abandoned by humans and presently gets quite a bit of human visitation. Large sections of possible habitat are heavily covered by White cedar woods. I don't plan to revisit the site. It seems like it has limited potential as Skink habitat.

June 30 - Thursday

60's, Rainy, thundershower interspersed w/brief sun, had rained overnight.

Entered Rattlesnake Ridge area from Inman pond water station. Traveled east of Inman pond then north along pipeline and road to Howard dam, looking for good vernal pools or potential skink habitat at higher elevation.

Found no good vernal pools but higher elevations looked good for skinks and snakes. It was open, rocky woods with a lot of exposed ledges and exfoliating rocks. Area will need more coverage.

I did find:

Northern Ringneck Snake. (*Diadophis punctatis edwardsi*)

Two under rocks, both had yellow undersides, glossy light gray blue back, sides and tail, with a bright yellow neck ring bordered in black. The black border continued after a right angle through the eye. The area below the black border was cream colored continuing under the head. The edges of the ventral scales had black dots. The centers of a few scales had black dots on one of the specimens. They were quick and alert and strikingly attractive. The tops of their heads were brown mottled with black. They were noticeably more slender than the Red Bellied and longer @ 27-30 cm. They were within the area cleared for the pipeline in a very ledgy area.

Northern Redbelly Snake. (*Storeria o. occipitomaculata*)

One found in upland rocky woods, exposed area, under a rock. Ventral scales bright red, back and sides solid brown with no markings. One light spot on back of neck was clear; the two on the sides were present but not obvious. I counted @ 17 scale rows, and @ 120 ventral scales (not real accurate). One upper labial scale was white. Noticeably shorter @ 22cm and chunkier than the ringneck.

Other Species:

Red Efts - very common, scores seen (100+)

Two Lined Salamanders - in wettest areas of dry stream beds @ 10

Garter Snakes - Two, found under rocks

American Toad

Green Frog - many tadpoles just transforming, particularly at Howard Dam

Wood Frog - one

Spring Peeper - one

Painted turtle - one shell found

Red-Backed Salamander - both phases - 1 gray, 20-30 red

Comments: John who worked at the water plant, had seen and studied a Rattlesnake, "dark, 4 ft., 7 rings on the rattle", in the road in front of the plant just on top of the hill. It was his first in a year and a half. They said it took quite a bit of prodding to make it rattle.

The man (older) building the road said he had seen a large black snake "at the mill" the day before. There is a mill at the south end of Old Marsh pond.

July 1 - Friday

Rains, two days after long
dry spell, 50's, rainy night,
scattered showers, 8:30-12:30am

Rainy night search for Marbled. I drove the Halfmoon-Glen Lake and Inman pond area back roads. No salamanders - a few frogs. I also walked the small roads partially surrounding Inman pond covering @2/3 of lake.

I found:

American Toad - 1
Green Frog - 1

Comments:

Not a lot of activity; saw 1 deer and quite a few daddy longlegs. Conditions at least on the surface were very wet although the rain was tapering off, it was still sprinkling.

July 8 - Friday

80's, very hot, humid sunny
9am - 1 pm

Met with Bill Galick to gather what info he had on Skinks, et al., on his land. We visited his main talus slope, two ponds and toured other areas.

Skinks

Bill's sighting of skinks appears to be incidental to other activities such as looking for Timber Rattlers, so he admits they may be in many areas where he didn't really pay attention to them, but he knows that he has seen them on the talus slope in the area of the main snake den (along the western edge of the main slope from the bottom edge in the trees, along the edge to the main den, (around 50 yds. up) to the extreme upper edge. Also he says they are sometimes in the middle of the talus. He also remembers them around the foundations of the main house in which his uncle lives.

He says you can best see them on early spring days, or cooler summer or even overcast or rainy days. On spring days he states they don't like very much wind. He is not sure if they stay on the talus or disperse during the summer. He said he shot a couple for Kinsman Lyon who was very excited about their presence there. He indicated a common size with his fingers to be around 6-7 inches, and mentioned that some had blue tails.

On a good day he indicated they were fairly numerous and easy to see - 10-20 - although he was vague on this point as well as some others.

The main area he pointed out was moderate size blocks from 4 ft 3 to 36 ft 3 slabs, within 5 yards of the forest edge. He spoke of them being in partly concealed nooks and crannies on the slope. Once again though I got the idea that he saw them there because that was where he looked for snakes.

He thought that there might be skinks about 2 1/2 miles north on another smaller talus slope on the northern end of the same mountain. He based this on the fact that he had heard that there were Rattle snakes there, but in fewer number. This slope was also his land. When talking about other slopes on his land he said there might

be lizards but he knew there weren't snakes. He also said the same when asked about other types of habitat. (The ledges on top, more wooded areas).

Rattle Snakes

- Return to dens to give birth last week of August
- Were getting bigger (4-5 ft) because they had not been hunted or collected much in the last ten years.
- Traveled widely early to mid summer @ 4 miles including crossing the lake.
- Traveled to another den which he pointed out on the New York side of the lake south a couple miles, which he said was smaller and closer to the water at the base of two knobs. He also mentioned a friend who collected these snakes.
- Were heavily collected by him and others, he said he'd probably caught and sold more than a 1000, for the bounty, he avoided the questions of whose bounty, saying there were people who would pay for live snakes.
- He got paid the same regardless the size so he would kill pregnant mothers in August, cut them open and take 10-18 young out.
- the snakes on Hollis Bartholemews land came from a den on the west shore of Glenn Lake not more than 30-40 yards in from the shore.
- He had never found any (denning) on the Great ledge.
- He mentioned a friend who kept some alive at his house.
- He mentioned his other den farther north on the same mountain.
- Black rat snakes and sometimes a few Black racers which Kinsmen Lyon had pointed out to him (he called them Pilot snakes and Mt. Black snakes)
- When asked about any other kinds denning on the talus, he had no knowledge of any other types
- He indicated that the Rattle snakes like some smaller talus chunks over the larger pieces.

Salamanders

- seemed to be aware of what sounded like spotted newts only; but showed me two potential salamander breeding ponds.

Turtles

- Mentioned Painted and Snappers
- Mentioned 3 odd spotted turtles he saw while fishing the Metawee river in New York state, he said there were spotted with creamy yellowish on the shell, and the legs and indicated with his hands a shell length of about 7-8 inches. When shown the pictures in the field guide he pointed out the Box Turtle, his 2nd choice was Bog Turtle, but he said they (Bogs) were too small. He ruled out Wood and Blandings as well.

Fish

- Billfish (Gar) spawning in shallows near old rock jetties and docks.

Birds

- Bald Eagle in summer years ago, mentioned a large tree in which it frequently perched, he'd watch it catch fish.
- "Hawks" used to nest on cliffs back before the vultures (Peregrines)?

Mammals

- "wolves" drove out both the red and gray foxes, killed a cow
- bobcat occasionally dened in talus, with lots of porcupine and some coons.
- Fisher ate his trapped porcupines (set for coons)
- Long time ago a dark almost black Mt. Lion had cubs on the mountain.
- Someone he knew watched a Mt. Lion resting on top of a large (new style round) bale of hay in a field behind their house with binoculars for about an hour. They commented to him on how it behaved similar to house cats.

Comments:

I found a four foot dead Black rat snake on Burr road about 1 mile south of Shaw mountain.

July 11 - Monday

90's, hot, humid, dry

With such hot and dry weather, I tried some turtle trapping with the new trap in an area where I had seen Map Turtles during late May. Near Sand and gravel spit off McKuen slang - caught one Black crappie. Bait - Sardines.

July 12 - Tuesday

In grass island of sand spit, same area:

- two perch
- two bass, I think small mouth, not sure
- 29 Sunfish; I thought at first they were bluegills, but upon checking the guides they may have been Red Breasteds.

July 13 - Wednesday

In open section of large marsh in Whitney Creek:

- 10 Bowfin, male and female. 18-24 inches.
- 1 Bass, Largemouth, I think

Comments: No turtles seen in Marshes or basking by us. Some fisherman reported a small one in deeper water and mentioned catching a different type on a hook. (Snagged under the neck.)

July 13 - Wednesday

Afternoon, sunny, dry
80's

Mt. Independence. Talked with Mary Metcalf about the Flora and Fauna in the area (Caretaker - Naturalist).

She is not knowledgeable about reptiles and amphibians. She had not seen any skinks (but will be watching) nor any snakes other than Garter snakes and Milk snakes. For salamanders, she had seen only the Red Eft.

She was very interested in plants and spoke of Yellow Oak, Four leaved Milkweed and others (Walking fern). The vernal pool which held the Mole Salamander larvae is completely dry.

July 14 - Thursday

Warm, 70's, sunny, dry
8:00 - 2:30

Visited Narrows of Dresden. Turned rocks, watched more exposed areas, searched for potential habitat. Large marshes to north and south are very interesting and appear very rich in life, although low when I visited, and choked with Water Chestnut. Marsh to the north had Painted Turtles, @ 8 seen. Larger turtles seen basking in open water near mouth may have been Graptemys geographica. One shell found in flotsom at high water line was of Sternotherus odoratus which is described below. In the upstairs of an abandoned camp with a slate roof were 2-3 old straw mattresses. Hanging from nails and rafters and in the straw were pieces of 6-8 shed snake skins which I estimate would have been shed from at least two different snakes just under 6 ft. long. The species must be Elaphe obsoleta based on scale #'s and location, keels, and length of specimens. (details below.). I located two small @ 8 inch Storeria occipitomaculata (Red Bellied Snake) under elm bark in an abandoned field.

Snake Skins Elaphe obsoleta

Total length estimate:	71	71	3 in. head + 25 more Ventrals (7in) Skin circumference 5 inches
Candals:	76	82	
Rows (# of scale)	27	26	
Width of largest ventral	3.3 cm	4 cm	
Length of skin piece (not complete)	61	61	
#Ventrals (actual, projected for piece)	164(206)	182	
Keels	clearly visible on anterior only	clearly visible on most dorsals	

Turtle Shell Sternotherus odoratus (Stink pot)

- 5 inches long, 3 1/2 inches wide, oval shaped
- 23 marginal skutes including nuchal
- Narrow plastron 4 cm rear lobe, 4 1/2 front, squarish pectoral scale very little flesh showing between scales, not concave, but a slight dip transversely between bridges, 2 anals, 2 femorals, 2 abdominals, 2 pect., 3 gular.
- Smooth brown carapace with black dots, 10 costals, 3 vertebrales.
- no notches on carapace, deep notches on back of plastron
- domed
- Ratio 4, 8 1/2 (widths at rear lobe)

Habitat

The potential for skinks based on the habitat leads we have, did not look great. Talus is extremely limited, 5-6 ft at the bottom of cliffs, which extend into the water at most places in high water. Exposed ledgy, exfoliated areas along the top edge were very limited and did not seem productive.

Top southern edge is open rocky, Oak, maple, Hornbeam woods which were very dry.

Cliffs along marsh to the north on approach held more Talus (30-40 ft) at base, but it was very much overgrown and shaded. I did not see the top edges.

Other Herps

Garter snakes - 4

Leopard frogs (Scores just transformed - 1 1/2 inches)

Other species

Blue heron 2

Deer 2 (much sign)

Muskrat (much sign), used waterchestnut to cover runs

July 14 - Evening

Just stopped raining, 70's
10:00 - 12:00 a.m.

Road search at night - Two or three brief but heavy showers hit in the afternoon and evening. When I arrived the rains had just stopped but the roads were wet with puddles. Some small areas were dry under trees.

Around East creek 20-50 small two inch Bull Frogs were in the roads. Near large pond just west of Benson village, there were hundreds of small, @ 1 1/2 inch Green Frogs dead or alive in roads. They were so thick as to be unavoidable and made popping noises as they were run over.

No salamanders.

Also:

American Toad 3-4

Leopard Frog 1

Some possible Spring Peepers

Other:

Raccoons 4

probable Opossum

Skunk 1

July 16 - Saturday

70's, overcast
9:00 - 4:30

Checked narrows from water by canoe using binoculars. No skinks. Checked N.Y. and Vt. sides facing lake. No talus - cliff descends into water.

Placed trap (turtle) near basking logs. Observed a small Map Turtle (Graptemys geographica) basking. Shell length around 4 inches.

Checked old foundations and deserted buildings along shore in area on foot and turning boards and debris.

Observed:

Blue Heron
Painted Turtle
Blue Gray Gnatcatcher
Maidenhair spleenwort
Northern waterthrush

Permission Interviews

The Grants own the shore and cliffs north to Redrocks bay. Obtained permission for myself only to explore land for herps.

- Black rat snakes my height (6 ft.) common in area
- No Rattle snakes since he moved in over twenty years ago
- No knowledge of skinks, Marbled or other turtles.

The McKinleys own Red rocks, cliffs and surrounding area

- Observed Black Rats often - two regularly by shed, two appeared to mate in a Shagbark hickory in front of their deck.
- No rattlesnakes as long as they had lived there.
- Very interested, vernal pool on land
- No knowledge of skinks, marbled -
- Mrs. believes she has seen two kinds of Black snakes??
- Mrs. found a shell which sounds like a Stinkpot shell in Redrocks bay.

The Cummings Own the south end of Shaw Mt., including Talus slopes.

- Observed Black rat snakes
- No rattlesnakes, skinks, marbleds
- Described Red Efts and Spotteds
- Proud of letter from the Conservancy which they showed me
- referred to it as the Smithsonian Inst.

Pat MaCleran owns North End Shaw Mt., and surroundings.

- Observed Black rat, knew difference between it and the racer which she'd seen in Conn.
- described Spotted Turtles? in her pond in past, blue, spotted Salamander under water trough,
- mentioned friend who claimed to see Box Turtles
- Described black salamanders with red sides?

- No rattlers but said Cedar Mt., 1-2 miles northwest and owned by her brother had large talus slope and was said to have Rattlesnakes
- very interested and cooperative

On Return trip in North Benson

Discovered dead Black Rat Snake in road (22A) just in front of road to Perch pond. Although it was well crushed and in a coil, it appeared to be @ 4 ft long. White on lower sides of head, chin and lips visible.

July 17 - Sunday

70's, overcast
9:30 - 12:30

First trip to Redrocks bay from water. Two relatively small stretches of cliff, the larger one perhaps 100 yds long and @ 80 ft high had a small 30 yd. piece of mostly small, overgrown talus between its base and the water. The other appears to have less if any talus and enters the water directly. I will return on foot to top and bottom.

Checked trap:

Found medium sized Snapping Turtle (10 inch) , and 8 inch Painted Turtle with a red-orange plastron (perhaps stained some how), other field marks were typical for an intergrade. (Pictures taken)

Other species:

- 6-8 Blue Heron
- Spotted Sandpiper
- Crow (sounded suspiciously like fish crow)?

On Return Trip: Found a Milk Snake crossing the road in Orwell @ 2 1/2 ft

July 19 - Tuesday

Overcast, 70's
9:30 - 1:30 Doug N. and I

Active search and sitting on top edge of Narrows of Dresden. Covered complete upper edge of cliffs which contained two - three areas with some exposure, duff and ground cover. Good day for viewing and searching.

Skink potential seemed limited. Amount of talus very limited. Open exposed areas also very limited. It was dry and rocky with cliffs and open woods.

Caught a very large Snapping Turtle with a 15 inch carapace (straight measure) in the trap.

Herps Species: (in Redrocks stream bed)

- Northern Two lined
- Pickerel
- Green Frogs

Other Species:

- Quercus muhlenbergi.
- gray fox carcass

July 20 - Wednesday

Cloudy in morning, clear w/
breeze in afternoon, 70's
9:30 - 3:00

Searched Red rocks Bay. Traversed all talus along bottom edge. Slope varied from @ 20 - 100 ft. mostly fine (fist to T.V. size) almost all covered with large cedars, and maples, hackberry and oak with a few small open areas. We actively searched and sat for 15 minutes in each open area.

Slope was large enough and deep enough with enough open areas to have some potential. 2 or 3 small open areas along the upper edge looked better but most were very small in area. They did have some Garter Snakes.

Herp Species:

Garter Snakes (Red Rocks)
Pickerel frog "
Leopard frog "
Green frog "
Bullfrog "
Wood frog "

A Northern Brown snake on dead end road to the north of McKinleys

Other Species:

Cliff Swallow, at Benson general store
Thousands of Gypsy Moths, adult
Yellow Oak
Deer
Woodchuck
Porcupine

July 21 - Thursday

Steady rain and fog
70's, Doug and I
9:00 - 1:30

Active search and Talus sitting at Galicks. Sat at site identified by Bill Galick. Actively searched N.W. edge of Talus, woods to the Southeast and ridgetops to the East.

The ridgetops seem to match Mike Clemens habitat descriptions and pictures. None of the other sites have the amount of open Talus or the amount of open ridge top habitat.

Where are they at this time of year?

Do they only den on the Talus slope or spend the year?

Herp Species:

Red Eft - scores
Garter snake - 1 on road
Leopard and Green frogs
Gypsy moths

Other Species:

Turkeys with 1/2 grown young, many @ 10 (3 adults?)
Red Tailed Hawk
Large (2-3 inch) slugs

July 21 - Thursday

70's, after first good soaking
rain lasting all day
9:30 - 11:30 PM

Drove back roads of W. Benson. Unfortunately the rain quit before I reached my destination but the ground and roads were well soaked.
Surprisingly little activity.

Herps. Species:

Bull frogs - immatures, near East Creek
Gray Tree frogs - singing at a few locations
Green frogs - no large congregations

Other Species:

Gray fox or Coyote? on Lake shore after minnows in small rivulet

July 26 - Tuesday

Warm 70's, overcast
Doug & I 8:30 - 1:30

Active search and talus sitting at Shaw Mt. on west facing Talus slopes for 15 minutes @ 9:00, with overcast skies. Slopes are more extensive and more open than any I've checked with the exception of the Great Ledge and Galicks. We checked the upper edge of the west facing talus and actively searched the top of the cliff all the way around to the east side. Habitat on top is very similar to the top of Galicks and close to that described by Klemens as good skink habitat.

Area should be rechecked under prime conditions.

On top of the Mt. are a few very nice looking vernal pools. One that is close to permanent I would suspect in moister years. They look like excellent mole salamander sites. The largest of @ 40 yds long held water and duckweed.

Herp. Species:

Spring Peeper @ 6 found
Gray Tree frog - heard 1

Pickerel frog - 2 seen
Garter snake - near pond
Green frog - in and around pond
Red Efts - near pond
Adult Red Sp. Newt - near pond, not in water but if had been, it was covered with duckweed
Red Backed - 1 near pond

Other Species:

Deer skeleton (doe) near pond
Land snails - many alive

July 28 - Thursday

Placed turtle trap with my daughters. Pond just west of center, Benson, just north of the main paved road. Beautiful pond, (shallow, mostly 3-4 ft) clear and cool.

Herp Species:

Leopard Frogs
Bullfrogs

Other Species:

Mallards - 2
Narrow leaved cattails
Yellow and White water lilies
Water Chestnuts, just beginning near road access
Kingfishers

July 29 - Friday

Checked trap baited with sardines in mustard sauce. Caught four Painted Turtles with alternating skutes on the carapace and dark rectangles on their plastrons, showing more of the western characteristics.

*Picture taken.

Also caught a very large (@ 15 inch carapace) Snapping Turtle. This one had a carapace completely covered with 3/4 inch of algae. It seemed less aggressive than the last large snapper which had struck out repeatedly. This one never struck.

Comment: Pulled out most of the water chestnut and spread it on the roadside. One 6 ft patch was missed. Should be checked more extensively for other turtles.

August 10 - Wednesday

80's humid, overcast
later sunny, 10:00 - 2:00

Checked Talus slopes at Shaw Mt. Small basketball sized rock makes up slopes that vary in length from 5 yards to 50 yards with many open sections covering almost uninterrupted the entire base of the south west, south and south east sides of Shaw Mt. and a piece on the connected and adjacent hill to the south east.

The habitat seems to have good potential. The area is relatively remote.

I located and spent time on all talus slopes however. The sky cleared and temperatures rose dramatically after my arrival. Area needs a visit under better conditions.

Herp. Species:

Spring Peepers - many were active.

August 14 - Sunday

Thunderstorms
Nightsearch 8:30 - 11:00 PM

After a series of afternoon showers one came through just at dusk. Showers had stopped once I reached Rutland County, but roads and ground were wet. I covered areas in vicinity South and west of Brandon. Drove back roads.

Herp. Species:

Green Frogs - in road near water 10-20

Bull frogs - 3-4

Toads - 2-3

Smooth Green Snake - dead near High pond

Garter snakes - 3 dead in road (different locations)

Some small (possibly Wood frogs), good leapers crossing road too rapidly to identify.

August 17 - Wednesday

Raining (front) steady
4 pm - 6 pm
Active search

Checked woods and bog areas in Forestdale near the home of Don Brush, east of Lake Dunmore. Nice temporary pools around edges of the Bog.

Herp. Species:

Red Efts - Many 15+ active

Red Efts transforming - 2

Red Backed Salamanders - @10

Spotted Salamander - 1 very fat broad headed individual under a log in a mature pine, hemlock woods not far from the bog.

Comments:

A very mature, pretty woods, 80 ft. pines, Hemlocks, Oaks. Local resident had seen spotted, not Marbled. Garters, Milk and Smooth Green.

August 17 - Wednesday

Raining steadily, 60's
9:30 - 12:30 PM(?)

Road search from Florence to West Rutland Marsh on dirt and small paved roads. Also Brandon and Forestdale.

Herp. Species:

Wood Frog - 8+
Leopard Frogs - 4+
Green Frog - 50+
Bull Frogs (small) - 10+
Peepers - (small fast leapers)
Red Elfs - 1
Garter snakes - 3
Ring Necked snakes (3 together just north of Wilson castle)

August 18 - Thursday

Baby Garters have been born. Saw two at Deerleap, Bristol. Many Red Elfs. Length of snakes, 5 inches.

August 22 - Monday

60's, much cooler, dryer
cool nights 1 - 5:00 pm

Visited Stacey Crossroads site. Found good skink habitat matching Klemens descriptions and photos. A lot of steep open woods along the south and west of the ridge with blueberries, shagbark and oak; many rock slabs. I turned over many slabs and logs. I did not find any exposed talus slopes or even semi-open slopes. The rock is slate and doesn't form the large cubic blocks that you'd see at Galicks. The areas where loose slabs have accumulated at the base of the cliffs are heavily forested with large hemlock and very dark and shaded.

The top of ridge looks good but the lack of Talus makes it not fit the description of our one known site.

Herp Species:

Garter snakes - 3 (one very aggressive, and actually repeatedly striking at me.
Wood frogs
Red Elfs

Comments:

Some small dried vernal pools at top of Mt. Still mucky.

August 23 - Tuesday

High 60's, low 70's,
cool nights (50's)
2-4:30

Visited Cedar Mt. northwest of Shaw Mt., along Lake Champlain. Pat McClernan had thought there was large talus from which Rattlesnakes had been taken years before.

The rock was large blocky (limestone?) and the south east end of the mountain had many medium sized slopes of exposed talus. One runs for 100 yds. in a semi-broken fashion ranging in width from a few yards to around 40 yards. Four or five other smaller slopes occur at the south end of that at a variety of level. A couple spots are quite exposed. The talus seems to run quite deeply. Suitable for winter protection. I did not have time to do an active search above the slopes, but I did spend some limited time on the talus.

The landowner was quite cooperative. (He owns the approach only. Walker brothers own the Mt.) He spoke of a large black snake "as long as this tractor" that he called George that passed through his barn a few time a year. An old trailer of his he said was filled with snake skins hanging from the walls. He had never seen a Rattlesnake. Was vague about skinks, had seen Spotted Salamanders but nothing the description of a marbled. He said I could use his access road which is in excellent shape and would cut 15 minutes off the approach time.

Herp. Species:

Pickerel Frogs - (along small cool ravine and brook)

Other Species:

Porcupine at talus slope (good sign)

Comments: Some vernal pools (dried) at edges of valley at eastern base of Mt. (small).

August 28 - Sunday

Rainy, cooler (@60)
Rained most of day, thunder-
showers, 8:30-12:00 pm

Road search on back roads from Bridport, Shoreham, Orwell, past Sunset and Sunrise Lakes, Benson to Inman Pond. Walked east side of pond to dam. Drove all roads in immediate area of Inman Pond.

Herp. Species:

Pickerel frogs - at pumping station

Bull frogs - mostly small but one full size on dirt roads. The large one was very easily caught by hand, it made no effort to escape.

Toads - a few in roads

Other Species:

Larvae of lightning bugs were glowing near Sunset on cut gravel bank, and at home.

Coyote in road in Orwell. (Appeared large, almost shepard size.)

Comment:

The road work and logging is so extensive on the east side of Inman Pond that areas that once were small vernal pools no longer exist. They have cleared an area wide enough for an interstate, @ 200 ft., and bulldozed large areas of it. The ponds removed were small and did not seem like the best habitat, however.

August 29 - Monday

Continued rain, @ 60
8:30 - 11:30 p.m.

Road search from Fair Haven to Proctor and north to Castleton, West Haven and Benson on back roads.

Herp Species:

American Toad (checked for Fowlers, none seen)
Red Efts - 3 together
Bull Frogs - small

September 2 - Friday

Sunny, 70's
8:30 - 12:30 am

Went to Galicks to see if the Skink were visible on the talus with the onset of colder weather. I traversed the slope completely from lower north end to upper south end. Quietly and slowly with many short sits and stands. Also did an active search under rocks and logs and in old trees along the top and back of the main cliff. Found none.

Herp Species:

Leopard frogs - 30+ half grown
Garter Snake - 1 in road
Northern Water Snake - 1 dead in road near bridge to Whitehall

Other Species:

Ravens - cliff
Turkey Vultures - cliff
Winged Sumac (Rhus copallina) - top of cliff

Comments:

Collected many Black Rat skins some complete with heads and one over 7 ft. long. from one of Galicks sheds. @ 8 were found among the debris on the 2nd floor and along the rafters. All pieces were at least 5 ft. long.

Bill claims both the Black rat (Pilot in his lingo) and the Black racer (Mt. Blue racer in his lingo) have been found on his land.

Bill believes I should have at least seen Rattlers on the Talus but perhaps it was too warm.

Bucky Mason, a friend of Bills, told me about a Skink he caught in the old shanty below the main house near the lake a number of years ago. He kept it awhile, then released it. He said he had seen one at his home in Whitehall on his wheelbarrow, just once. He mentioned two New York residents who used to collect snakes but would know about skinks.

Ray Wheeler (near Clemens) Dresden (Bernard) 518-499-1910

Art Moore - Dresden- 518-499-0339

His son also used to collect and had recently taken a N.Y. State trooper up for pictures. Some collectors, he stated, would collect bounties in two states for the same snakes. Heads and tails were needed to collect the bounty but the clerks didn't keep the snakes.

Phone Interviews:

Ray Wheeler: Only spring, very rare, edges of the rock slopes when snake hunting in spring, seen at the "Diameter" at the end of South Bay (Lake Champlain) on the New York side, near woodbine, usually seen running off, never noticed in hardwoods. Probably at Deer Leap at Lake George.

Art Moore: See them spring, summer, and fall. Caught them by hand, seen some at his home. Habitat: Open with a lot of sun, below the ridges, often near water where talus extends into lake.

In Vermont: Rattlesnake Ridge and Galicks, like heat, hotter the better, tails get almost grey. Golden-whitish, yellow head, blue stripes, blue tail.

Collector in Long Island, once bought some but they didn't survive.

Rattlesnakes sites: Conn., NH border on Conn. River. Derby Line on Canadian border, Glen Lake (back of), Males travel 3 miles or more between dens, young every two years. "One pair of Eagles in area"??

September 11 - Saturday

Sunny, low 70's
light breeze
10 am - 3:30 pm

As a result of phone call to Art Moore and his statement that there were skinks at the Great Ledge, I visited the site he was most likely at. The rattlesnake den area behind Eds Live Bait shop.

Interview with Ed of Ed's Live Bait shop:

-Never heard of or seen skinks, but he didn't go out back in the summer because of the Rattlesnakes.

-Seen 4 ft. "Black snakes, Grass snakes, Garter and Milk snakes. He didn't mind the Black snakes.

-Rattlers killed this year at his neighbors farm to the north and the farm that is furthest south on the east side of the "Whitehall peninsula".

-Eel-like creatures in the cold river in North Clarendon, empties into Otter Creek; caught Mudpuppies on crawlers.

-* Neighbor to south owned land (out of state) and might eventually build up on top of the ridge - speculation on his part.??hadn't met him.

-Gary Sheldrick familiar with the den. Had hunted or collected there. Den to left of large dead pine.

Active searching, still hunting and sitting on talus, produced no skinks.

Herp. Species:

Northern Two Lined- in brook in ravine.

Red Eft - many, 20-30. turned up under logs at top

Spotted Salamander - under log in hemlock woods at top near pools

Red backed Salamander - many, 10-20 under rocks and logs at top

4 Toed Salamander - 1 under log near pool at top - took picture in poor light, constricted tail base, cream white underside with black spots, opaque look, 4 toes rear foot.

Wood Frog - 1 seen

Gray tree Frog - 1 heard

Comments: This is the northern most of the 3 segments of the Great Ledge. It holds much talus although most of it is grown over. A thin strip of exposed talus extends vertically from just below the cliff to 2/3 of the way down the hill. The talus varies in size from bus size to football size.

The area at the top like its southern counterpart holds small vernal pools and semi permanent swampy areas with Royal fern tussocks and moss. It was near these swampy areas that I found all of the amphibians except the Northern Two Lined, which was in the brook.

One of the Red Backed lost its tail while I gripped it by the tail. The tail continued to twitch when I left it a few minutes later. One Red Backed was very dark and appeared more rounded in body form. Another was the largest I've seen, nearly 4 1/2 inches long.

October 2

Warm, 70's,
Partly cloudy, Breezey
9:30 - 4:30

Checked road kills on Route 22a on way to Inman pond. Certain stretches of road had large concentrations of mostly dead, some injured and a few living snakes. In most cases it seemed to be a large meadow or marsh area on one side of the road

with a rocky wooded area on the other side. The snakes seem to be moving into the rocky woods perhaps to den areas. The majority are young 4-6 inch N. Brown Snakes. In a good 100 yd. stretch of road as many as 20 snakes could be found. Most were N. Brown. Second most common were Garters, with a few Redbellies and in two cases, N. Water Snakes. One area was on the Korda property in Orwell. One in Benson south of the new gas station. Other areas had snakes evenly but more thinly distributed.

Interview with Lynn Howard and Kathy Donna of Fair Haven:

- Own 110 acres including Beaver meadow behind Rattlesnake Ridge (Lynn). Kathy owns a smaller adjacent piece but they live on Lynn's land and rent Kathy's house.
- Very interested in Natural History and conservation
- Spent many hours discussing what they had seen on their land.

Rattlesnakes in their garden (large and long) "eating rabbits", shot one facing off with their cat, seen while picking berries (blueberries and raspberries) frequently... Grandfather was called "Rattlesnake Jim" evidently of some local renown, used to collect bounties. Seems to be a couple times each year, none this summer.

Black Rat - They described long black snakes reaching across the entire width of the road - not aggressive, with heavy, solid bodies, skins in old house had been thrown away.

Northern Water Snake - frequently seen in beaver meadow, some very large, had skinned them, shot larger ones.

Smooth Green Snake - described well

Snapper and Painted - many (some Painteds were basking when I was there)

Spotted Turtle (?) - Kathy claims to have seen a few crossing the road. Lynn can't remember seeing them.

High Standing Turtle (?) - On land, stood very erect (?) - Wood? Box? She thought maybe Wood.

Spotted Salamander - described by both

Red Backed Salamander - We found a few around her house

I had them look at pictures of both the Marbled and the Skink. Neither recognized or had even heard of either.

Lynn believes she has heard and seen the Chorus frog and heard the Fowlers Toad. I promised to take her a tape of their calls.

Other Species: (Claimed by Lynn and Kathy)

-King Kong, the giant beaver. They describe a "huge" beaver, much bigger than most that they had seen. They claim it looks like a small bear. The dam is right in their front yard.

- Mink, Muskrat, Osprey, Marsh Hawk, Snowy Owl in winter, Coyotes, Bobcat, Red fox, Geese, Ducks, etc...

"Young Reed boy"

Lives on Old Marsh pond. Had seen a black rat @ 4 ft. and had stories of construction men killing a few Rattlers during excavation of some sort. Didn't recognize skinks or Marbled.

Comments:

The Howard property is wild, remote, and ecologically varied. A very interesting area which they have protected from disturbance (other than by the beaver). Directly in front of their house is a large flooded beaver meadow.

October 8 - Saturday

Discussion with Sandra Owens-Heath who lives near Sunset Lake, (Essentially behind Stacy Crossroads area).

She described a pair of very large 5-6 ft. heavy bodied black snakes with a black and white pattern on the underside that they had killed in their yard. Others in the area had reported seeing them as well.

Also a Rattlesnake had been seen by her neighbor last year in their yard. She went on to describe Northern Brown and Red Bellied snakes as well.

The large black snake, she said, raised its tail and shook it like a rattle and aggressively attacked (bit) a shovel.

No knowledge of Skinks or Marbleds. She was concerned about a proposal to dump ash in the area.

October 20 - Thursday

Sunny, Clear
50's
9:30 a.m.-3:30 p.m.

Day-long search with two students, Ron Cameron and Steve Manning. We searched along the southeast, east and north shore of Inman Pond, continuing northwest to the ridge overlooking 22A and back east, around beaver meadow; turning rocks, logs, bark and raking leaves in almost any plausible location with

special effort in and surrounding vernal pools. Most pools are entirely dry. Some of the larger ones which supported Royal Fern, Tussocks and other wetland vegetation had small areas of water amidst deep wet mud.

Herp Species

- Red Backeds - 1 Red Phase, 1 Lead Phase
- Spotted Newts- active in water, under cover on land - 6
- N. Two Lined - 12+
- Bullfrog - In Inman Pond
- Wood frog - slow but above leaves, may have disturbed it without noticing (1)
- Green frogs - 15+, in depressions under flat stones near Inman Pond

Other Species

- Osprey - Inman Pond (local resident?)
- Black Scoter - flock of around 25 on Inman Pond
- Pill clams - very small, up to 1 cm maximum, under logs in dried beds of vernal pools.

Comments

Although it was a mostly sunny, relatively warm fall day, we were not able to locate any snakes, dead in or crossing the roads. Peak of snake movement seemed to be the last week in September and the first week in October with many N. Browns, Red Bellied and Garters found dead in roads. The common denominator seems to be rocky, wooded hillsides adjacent to swamps, wet meadows or overgrown, with a road in between. The snakes all seem to be headed toward the hillsides for denning. We located some snakes, through October 16, (N. Browns, Red Bellied and Garters).

- The town blew up the beaver dam at the Beaver meadow on the Howard land.

October 21 - Friday

Sunny, 50's
10:00 - 4:30

Searched in and around many vernal pools and small swamps to the south and southwest of Inman Pond. Also covered some areas in the open woods and surrounding rocky ridges. Birch and Ashley helped.

Herp Species:

- Spotted Newts - active in pond
- Red Efts - Two very small ones, turned up
- Red Backeds - Red and Lead Backed phase, seemed like a higher % of lead phase than normal, @ 6 of each
- Four Toed - One under cut slabs of pine on periphery of logging header, near swamp close to road and pond. (Picture taken).
- Pickerel Frogs - One large, 4-5 small under rocks in lowest sections of dry swamp and stream leading into it - Brown with clear yellow thigh markings on the adult.
- Green Frogs - 3-4 in same situations as Pickerel Frogs.

Other Species:

- Narrow Leaved Cattails near dock in Inman Pond
- Porcupine in Den
- Horsehair worms - 2 under logs in two vernal pools, slowly moved when picked up

Comments:

The hill to the south of Inman Pond has been logged selectively in the last couple years, but not bulldozed as has the east sides. Enough light now reaches the ground to allow for quite a bit of herbaceous growth in the cut areas. Many logs and slabs provide good cover for Red Backeds and Efts. The ridge is more of a loose slate/shale ridge that any of the others around Inman Pond. That, and proximity to a variety of good vernal pools and semi-permanent marshy areas makes this area seem like plausible Marbled habitat.

- After the search we drove out to West Haven to check on new posters I had heard about. The Cogman Pond area south to land posted by Warner L. has all been recently posted by signs labled Three Pines Realty Company. It seems to include the farm north of the pond and both sides of the road.

- Bluebirds seen near Poultney river bridge to New York (Upper).
- Good visibility at this time of year makes it easy to locate pools.

October 22 - Saturday

10 p.m.-1 a.m.
40's, rained most of day
Light rain in evening

Road search past the best vernal and permanent pools I had located in Bensen and W. Haven; revealed no Reptile or Amphibian movement.

Other Species:

- Deer - Two
- Skunks - Two searching for food near roads
- Rabbits - two

October 23 - Sunday

One of the larvae collected at Mt. Independence this summer is still living in the bucket. It measures 4 centimeters. When collected, they were all between 3.5 and 4.5 cm. At the base of the sides are small black spots. The underside is unpigmented. It has five toes on it's hind feet. The description given previously (June 26) still applies as well. It has survived in its artificial environment for almost 4 months now. It has been kept outside and supplied with living plants, algae, and bottom detritus from our pond. The algae and plants have grown well. It has not been fed

but a variety of insect larvae and trapped insects were seen in the bucket throughout the summer. The top of the bucket has frozen over a couple times now.

Today, I added small earthworms and many small water boatman. I may have to move it to prevent it's freezing.

November 1 - Tuesday

Heavy, steady rain
@ 40?

Rain of the type I would like to be out searching in, but I had other meetings. One frog seen crossing the road here. This rain brought our pond level and the Lemon Fair up considerably. If Marbleds live in Vt. somewhere, this would be the type of fall rain that would submerge their eggs.

November 5 - Saturday

Larvae still alive and healthy in the bucket. Now located in the studio, where it gets cool but rarely freezes.

November 21 - Monday

Recent series of heavy rains have brought water levels up to the early spring levels for the first time since then. The Lemon Fair has flood its banks.

but a variety of insect larvae and trapped insects were seen in the bucket throughout the summer. The top of the bucket has frozen over a couple times now.

Today, I added small earthworms and many small water boatman. I may have to move it to prevent it's freezing.

November 1 - Tuesday

Heavy, steady rain
@ 40?

Rain of the type I would like to be out searching in, but I had other meetings. One frog seen crossing the road here. This rain brought our pond level and the Lemon Fair up considerably. If Marbleds live in Vt. somewhere, this would be the type of fall rain that would submerge their eggs.

November 5 - Saturday

Larvae still alive and healthy in the bucket. Now located in the studio, where it gets cool but rarely freezes.

November 24 - Thursday

Recent series of rains has brought our pool to overflowing for the first time since early spring. The Lemon Fair too has flooded its banks.

Salamander Larva in bucket is still alive and shows no new signs of transforming. Temperature stays @ 50 degrees in the room.

November 25 - Friday

Follow-up phone call with Art Moore of Dresden, New York:

Five Lined Skinks

- He has seen them while hunting for snakes
- Of all the places he has hunted in Vt. other than Galicks, he has seen skinks only at one spot, on the Great Ledge
- The obvious looking talus slopes on the south end of Great Ledge don't hold denning snakes or skinks
- The den and skink site on the Great Ledge was between the diner (which may now be the bait shop) and Eugene Richards farmhouse.
- He described the same site Ed of Ed's Bait Shop had directed me to
- He has not visited the site in @ ten years
- He would be happy to take me to the site to look for skinks next spring

- Best skink hunting conditions:
 - On talus in sun on sunny May days with no wind (11 a.m. - 3 p.m.) midday
 - Hot humid summer days were good as long as there was no direct sun or wind (hazy, humid days when you drip with sweat)
 - Early Sept. was a good time at the dens
- He mentioned providing information to Kinsmen Lyon of Massachusetts about skinks and snakes
- He had seen skinks at many New York sites including Deer Leap at Tongue Mt.
- He had made a very long pair of tongs to catch snakes with, which he had caught skinks with as well
- A few old skinks were close to a foot long
- If you saw a skink in an area, it would likely be in the same spot the next day, they didn't move much
- He said he had found lizards in the stomachs of Rat snakes
- He had seen young skinks with blue tails and stripes and golden yellow adults

I asked if he had seen any black snakes other than Black Rats:

- Yes, a few many years ago, but not in the last years of his snake hunting
- They had disappeared
- Unlike Black Rats which hold their heads up in the air while moving, (he said that is how they got the nickname Pilot snakes), Mt. Black racers kept their heads down
- He also thought they were rougher looking, not as glossy as Black Rats, coarser
- He thought they were less arboreal than Black Rats, not as likely to climb for birds and nests

I asked about the Derby Line site for Timber Rattlers:

- He had been asked to come visit the site by its owner Francis Ballacas (sp?) of Derby Line, who wanted to sell live snakes
- It was not a typical steep ridge talus slope but along a river flowing into Canada
- not a lot of snakes

He said to look him up at the end of the dead end road on the west side of South Bay.