

Annual Report – The Amphibian Community of the Saratoga National Historical Park
Permit # SARA-2002-SCI-0002
Principal Investigator: Lawrence Woolbright
For the 2003 calendar year

Objectives. This is a five-year study of the amphibian community of the Saratoga National Historical Park. Key goals are to determine species present on the site, population densities, and spatial and temporal patterns of habitat use. These will be accomplished mainly through auditory surveys, visual surveys, and driving transects during spring breeding seasons. Data will provide a historical baseline for future evaluations of amphibian population trends, along with information relevant to amphibian conservation.

Having established the presence of most of the common local species of spring-breeding amphibians on the site in 2001 and 2002, our primary objective for 2003 was to quantify temporal and spatial variation in patterns of habitat usage by these species. Because of the extreme temporal and spatial synchrony of woodfrog breeding aggregations, we chose this as the focal species for egg clutch counts. We also continued the driving transect established in previous years along the tour road.

Accomplishments. Increased snow cover during the winter of 2002-03 and rainfall during spring 2003 contributed to greater availability of vernal pools compared to prior years and a landscape-level shift in woodfrog breeding activity. Of the 13 woodfrog breeding sites documented in 2001 and 2002, four of them (31%) were not used in 2003, presumably because of availability of preferred sites. These four sites contained 22% of the egg clutches laid in 2002. In addition, breeding activity occurred at nine new sites. These new sites represented 50% of the 18 sites used by woodfrogs in 2003, although only 7% of the 1555 total egg clutches were deposited at them. This finding suggests an opportunistic element to oviposition site choice by this species.

Movement data were collected on the tour road transect on five peak migration nights in 2003. The majority of frog sightings were in movement corridors previously identified. A map showing all road transect results is attached as Figure 1.

April 4. 2003.

Siena College
Saratoga Sattlefield
Amphibian Calling Counts

Spring 2003

Pond : Stop 1

Date	Temperature		Weather	Wind	SPL	Species						
	We/Dry					<i>Pseudacris crucifer</i>	<i>Rana sylvatica</i>	<i>Rana pipiens</i>	<i>Rana catesbeiana</i>	<i>Rana clamitans</i>	<i>Hyla versicolor</i>	<i>Bufo americanus</i>
3/25/2003	50/57		Partly Cloudy	3	0	1						
3/26/2003	44/46		Fog	1		2						
3/27/2003	35/35		Clear	1	>60							
28-Mar	47/55		Partly Cloudy	0	64		1					
3/31/2003	27/30		Clear	2	62	3	1					
4/1/2003	34/35		Cloudy	1	>60	2						
4/2/2003	36/36		Shower	1		3	3					
4/10/2003	37/39		Partly Cloudy	1	61	3						1
4/11/2003	45/46		Cloudy	2	72	3	1					
4/14/2003	47/57		Clear	3	82	3	3					
4/15/2003	65/72				76+	3	3					
4/16/2003	38/48		Partly Cloudy	4	75	3	2					1
4/17/2003	38 cold and dry		Clear	1	X	3						
4/18/2003	46/47		Drizzle	0	72	3	1					
4/22/2003	53/53		Fog		76+	3						1
4/23/2003	34/43		Partly Cloudy	2	68	3						
4/24/2003	40/48		Clear	1	72	3						
4/25/2003	46/48		Partly Cloudy	1	78	3						3
4/28/2003	57/65		Clear	0		3					1	3
4/29/2003	50/53		Partly Cloudy	2	72	3						2
4/30/2003	50/55		Partly Cloudy	1	>60	3					1	1

Pond : Service Road

Date	Temperature		Weather	Wind	SPL	Species						
	We/Dry					<i>Pseudacris crucifer</i>	<i>Rana sylvatica</i>	<i>Rana pipiens</i>	<i>Rana catesbeiana</i>	<i>Rana clamitans</i>	<i>Hyla versicolor</i>	<i>Bufo americanus</i>
3/25/2003	50/57		Partly Cloudy	3	0							
3/26/2003	44/46		Fog	1	0							
3/27/2003	35/35		Clear	1	>60	1						
3/28/2003	47/58		Partly Cloudy	0	68	2	3					
3/31/2003	27/30		Clear	2	72/73	3						

Date	Time	Weather	Temp	Wind	Humidity	Clouds	Pressure	Visibility	Notes
4/1/2003	34/35	Cloudy	1	62	1				
4/2/2003	36/38	Shower	1	0					
4/10/2003	37/39	Partly Cloudy	1	73	3				
4/11/2003	45/46	Cloudy	2	>60	2				
4/14/2003	47/57	Clear	3	78	3				
4/15/2003	65/72			76+	3			1	1
4/16/2003	38/48	Partly Cloudy	4	76	3				1
4/17/2003	38 cold and dry	Clear	1	X	3				
4/18/2003	46/47	Drizzle	0	74	3			1	
4/22/2003	53/53	Fog		76	3				
4/23/2003	34/43	Partly Cloudy	2	70	3				
4/24/2003	40/48	Clear	1	34	3				
4/25/2003	45/48	Partly Cloudy	1	78	3				
4/28/2003	57/65	Clear	0		3				1
4/28/2003	50/58	Partly Cloudy	2	70	3				
4/30/2003	50/55	Partly Cloudy	1	65	3				1

Pond: Barber Wheatfield

Date	Temperature Wet/Dry	Weather	Wind	SPL	Species						
					<i>Pseudacris crucifer</i>	<i>Rana sylvatica</i>	<i>Rana pipiens</i>	<i>Rana catesbeiana</i>	<i>Rana clamitans</i>	<i>Hyla versicolor</i>	<i>Bufo Americanus</i>
3/25/2003	50/57	Partly Cloudy	3	0							
3/25/2003	44/46	Fog	1	0							
3/27/2003	35/35	Clear	1	>60	2						
28-Mar	47/58	Partly Cloudy	0	>60	2						
3/31/2003	27/30	Clear	2	68/59	2						
4/1/2003	34/35	Cloudy	1	>60	1						
4/2/2003	36/36	Shower	1	72	2						
4/10/2003	37/39	Partly Cloudy	1	60	3						
4/11/2003	45/46	Cloudy	2	66	3						
4/14/2003	47/57	Clear	3	67	3						
4/15/2003	65/72			76+	3						
4/15/2003	38/48	Partly Cloudy	4	76	3						1
4/17/2003	38 cold and dry	Clear	1	X	3						
4/18/2003	46/47	Drizzle	0	06	3						
4/22/2003	53/63	Fog		71	3						
4/23/2003	34/43	Partly Cloudy	2	75	3						
4/24/2003	40/48	Clear	1	68	3						
4/25/2003	45/48	Partly Cloudy	1	>60	3						1
4/28/2003	57/65	Clear	0		3						1

4/14/2003	47/57	Clear	3	X
4/15/2003	55/72			X
4/16/2003	36/48	Partly Cloudy	4	X
4/17/2003	38 cold and dry	Clear	1	X
4/18/2003	46/47	Drizzle	0	X
4/22/2003	53/53	Fog		X
4/23/2003	34/43	Partly Cloudy	2	X
4/24/2003	40/43	Clear	1	X
4/25/2003	45/48	Partly Cloudy	1	X
4/28/2003	57/65	Clear	0	X
4/29/2003	50/53	Partly Cloudy	2	X
4/30/2003	50/55	Partly Cloudy	1	X

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Pond: 4A (Woolbright's Pond)

Date	Temperature		Wind	SPL	Species					
	Wet/Dry	Weather			<i>Pseudacris crucifer</i>	<i>Rana sylvatica</i>	<i>Rana</i>	<i>Rana</i>	<i>Rana</i>	<i>Bufo</i>
3/25/2003	50/57	Partly Cloudy	3	0						
3/25/2003	44/46	Fog	1	0						
3/27/2003	35/35	Clear	1	0						
28-Mar	47/58	Partly Cloudy	0	0						
3/31/2003	27/30	Clear	2	0						
4/1/2003	34/36	Cloudy	1	0						
4/2/2003	36/36	Shower	1	0						
4/10/2003	37/39	Partly Cloudy	1	0						
4/11/2003	45/46	Cloudy	2	62	3	1				
4/14/2003	47/57	Clear	3	78	3	2				
4/15/2003	55/72			76+	3	2				
4/16/2003	38/48	Partly Cloudy	4	70	2					1
4/17/2003	38 cold and dry	Clear	1	X	2					
4/18/2003	46/47	Drizzle	0	66	3	1				
4/22/2003	63/63	Fog		67	3					
4/23/2003	34/43	Partly Cloudy	2	64	3					
4/24/2003	40/48	Clear	1	>60						
4/25/2003	45/48	Partly Cloudy	1	>60	2					
4/28/2003	67/65	Clear	0	X	3					
4/29/2003	60/58	Partly Cloudy	2	66	3					
4/30/2003	60/55	Partly Cloudy	1	>60	3					

Pond: 4 (Sean's Pond)

Species

Date	Temperature		Wind	SPL	Species						
	We/Dry	Weather			<i>Pseudacris crucifer</i>	<i>Rana sylvatica</i>	<i>Rana pipiens</i>	<i>Rana catesbeiana</i>	<i>Rana clamitans</i>	<i>Hyla versicolor</i>	<i>Bufo americanus</i>
3/25/2003	50/57	Partly Cloudy	3	0							
3/26/2003	44/46	Fog	1	0							
3/27/2003	35/35	Clear	1	0							
28-Mar	47/53	Partly Cloudy	0	0							
3/31/2003	27/30	Clear	2	0							
4/1/2003	34/36	Cloudy	1	0							
4/2/2003	36/36	Shower	1	0							
4/10/2003	37/39	Partly Cloudy	1	0							
4/11/2003	45/46	Cloudy	2	0							
4/14/2003	47/57	Clear	3	0							
4/15/2003	65/72			>50	1						
4/16/2003	38/48	Partly Cloudy	4	0							
4/17/2003	35 cold and dry	Clear	1	X							
4/13/2003	46/47	Drizzle	0	0							
4/22/2003	53/53	Fog	2	0							
4/23/2003	34/43	Partly Cloudy	1	66	3						
4/24/2003	40/43	Clear	1	>60							
4/25/2003	45/43	Partly Cloudy	0	X							
4/28/2003	57/66	Clear	2	>60							
4/29/2003	50/58	Partly Cloudy	1	>60							
4/30/2003	50/56	Partly Cloudy	1	>60							

Pond: Stop 5 Seepage

Date	Temperature		Wind	SPL	Species						
	We/Dry	Weather			<i>Pseudacris crucifer</i>	<i>Rana sylvatica</i>	<i>Rana pipiens</i>	<i>Rana catesbeiana</i>	<i>Rana clamitans</i>	<i>Hyla versicolor</i>	<i>Bufo americanus</i>
3/25/2003	50/57	Partly Cloudy	3	>50		1					
3/26/2003	44/45	Fog	1		1	1					
3/27/2003	35/35	Clear	1	>60	1						
28-Mar	47/53	Partly Cloudy	0	0							
3/31/2003	27/30	Clear	2	60	2						
4/1/2003	34/36	Cloudy	1	60	1						
4/2/2003	36/38	Shower	1	60	1						
4/10/2003	37/39	Partly Cloudy	1	>60	1						
4/11/2003	45/46	Cloudy	2	>60	3	1					
4/14/2003	47/57	Clear	3	66	3	2					
4/15/2003	65/72			68	3	1					
4/16/2003	38/43	Partly Cloudy	4	68	3	1					
4/17/2003	38 cold and dry	Clear	1	X	2						
4/18/2003	46/47	Drizzle	0	62	3	1					

4/22/2003	53/63	Fog	2	64*	3							1
4/23/2003	34/43	Partly Cloudy	2	67	3							
4/24/2003	40/48	Clear	1	61	3							
4/25/2003	46/43	Partly Cloudy	1	64	3							
4/28/2003	57/65	Clear	0	X	3							2
4/29/2003	50/58	Partly Cloudy	2	65	3							1
4/30/2003	50/55	Partly Cloudy	1	>60	1							1

* - Couldn't read number

Pond: Stop 8 John's pond

Date	Temperature Wet/Dry	Weather	Wind	SPL	Species						
					Pseudacris crucifer	Rana sylvatica	Rana pipiens	Rana catesbeiana	Rana clamitans	Hyla versicolor	Bufo americanus
3/25/2003	50/57	Partly Cloudy	3	0							
3/26/2003	44/46	Fog	1	0							
3/27/2003	35/36	Clear	1	0							
28-Mar	47/68	Partly Cloudy	0	64	2	2					
3/31/2003	27/30	Clear	2	>58	1	1					
4/1/2003	34/35	Cloudy	1	0							
4/2/2003	36/36	Shower	1	0							
4/10/2003	37/38	Partly Cloudy	1	0							
4/11/2003	46/46	Cloudy	2	0							
4/14/2003	47/57	Clear	3	70	3	1					
4/15/2003	65/72			73	3	1					
4/16/2003	38/48	Partly Cloudy	4	76	3						
4/17/2003	38 cold and dry	Clear	1	X	1						
4/18/2003	46/47	Drizzle	0	66	3		1				
4/22/2003	53/53	Fog		76+	3						
4/23/2003	34/43	Partly Cloudy	2	72	3						
4/24/2003	40/43	Clear	1	73	3						
4/25/2003	46/43	Partly Cloudy	1	64	3						
4/28/2003	57/65	Clear	0	X	3						1
4/29/2003	60/53	Partly Cloudy	2	76	3						
4/30/2003	60/65	Partly Cloudy	1	66	3	1					1

Pond: Stop 8 Fern Field

Date	Temperature Wet/Dry	Weather	Wind	SPL	Species					
					Pseudacris crucifer	Rana sylvatica	Rana pipiens	Rana catesbeiana	Rana clamitans	Bufo americanus
3/25/2003	50/57	Partly Cloudy	3	>60	3	3				

3/26/2003	44/46	Fog	1	62	3	3	
3/27/2003	35/35	Clear	1	63	3	3	
28-Mar	47/58	Partly Cloudy	0	64	3	3	
3/31/2003	27/30	Clear	2	X	3		
4/1/2003	34/35	Cloudy	1	50	2		
4/2/2003	36/36	Shower	1	76	3	1	
4/10/2003	37/39	Partly Cloudy	1	74	3	3	
4/11/2003	45/46	Cloudy	2	62	2		
4/14/2003	47/57	Clear	3	>80	3	3	
4/15/2003	65/72			69	3	2	
4/16/2003	33/43	Partly Cloudy	4	76	3		1
4/17/2003	33 cold and dry	Clear	1	X	2		
4/18/2003	45/47	Drizzle	0	60	3		
4/22/2003	53/53	Fog		67	3		1
4/23/2003	34/43	Partly Cloudy	2	60	3		
4/24/2003	40/43	Clear	1	71	3		
4/25/2003	45/43	Partly Cloudy	1	60	3		
4/23/2003	57/65	Clear	0	X	3		1
4/29/2003	50/53	Partly Cloudy	2	72	3		1
4/30/2003	50/55	Partly Cloudy	1	65	3	1	1

Pond: Stop 3 Roadside

Date	Temperature We/Dry	Weather	Wind	SPL	Species							
					<i>Pseudacris crucifer</i>	<i>Rana sylvatica</i>	<i>Rana pipiens</i>	<i>Rana atesbeiana</i>	<i>Rana clamians</i>	<i>Hyla versicolor</i>	<i>Bufo Americanus</i>	
3/25/2003	50/57	Partly Cloudy	3	0								
3/26/2003	44/46	Fog	1		1							
3/27/2003	35/35	Clear	1	62	1	1						
23-Mar	47/58	Partly Cloudy	0	66	3	3						
3/31/2003	27/30	Clear	2	60	?							
4/1/2003	34/35	Cloudy	1	62	2							
4/2/2003	36/36	Shower	1		1							
4/10/2603	37/39	Partly Cloudy	1	64	3							
4/11/2003	45/46	Cloudy	2		3	3						
4/14/2003	47/57	Clear	3	72	3	1						
4/15/2003	65/72			76+	3	3						
4/16/2003	33/43	Partly Cloudy	4	76	3							1
4/17/2003	33 cold and dry	Clear	1	X	2							
4/13/2003	46/47	Drizzle	0	76	3							
4/22/2003	53/53	Fog		76+	3	1						

Appendix B. 2003. Clutch counts.

Pond location	2003 Rs	2003 Am
Way back behind 1 (E end of trough)	13	1
John's Pond 2 (off track past stop 1)	35	0
stop 1	383	9
service road	100	1
Beaver (old - top of hill nr Larry's)		
Sean's 2 (right of road at culvert)	0	0
1st flag to left before stop 2	2	1
2nd flag to left before stop 2	5	1
stop 2 (all ponds combined)	12	0
bottom of hill on left before stop 4	13	2
stop 4 culvert	0	0
Sean's = bottom of hill past stop 4 on l	0	0
Larry's = top of hill on left past stop 4	16	2
Beaver pond below monument	16	4
stop 5	91	4
pond south of road in curve below 1	0	0
roadside at John's Pond (all combined)	6	3
John's Pond	0	0
ditches on dirt track JP - FF	0	0
stop 8 fern field	317	161
stop 8 roadside	114	8
big pond on track thru Brit woods	246	15
vernal depressions in Brit woods - all	0	0
British camp north	65	0
British camp south	121	5
Total internal ponds	1555	217

Wood frog - Rana sylvatica →

→
Spotted Salamander -
Ambystoma maculatum

when data collection is suspended, the traps can easily be closed by inverting the drop ramp.

Works Cited

- Lopez, J. E. & C. A. Pfister (2001) Local population dynamics in metapopulation models: Implications for conservation. *Conservation Biology*, 15:6.
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- Van Dyke, F. (2003) Conservation biology; foundations, concepts, applications. *McGraw Hill*. Pp.20-130.