

**Reptile and Amphibian Survey of Warm Springs Mountain
Preserve with Forays into Douthat State Park.**

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Introduction

The Annual Spring Meeting and Survey of the Virginia Herpetological Society was held on 1-2 July 2006 at Warm Springs Mountain Preserve and Douthat State Park. Thirty-five members and people in the local community turned out for the weekend event. The property for Warm Springs Mountain Preserve was purchased by The Nature Conservancy in 2002 from a land holding company called Virginia Hot Springs. The land was purchased originally by the Ingalls family who wanted to preserve the area from development. The property encompasses 3,751 hectares (9,269 acres) and resides in Bath County, Virginia. Warm Springs Mountain is considered part of the Allegheny Highlands. The highest elevation on the preserve is Bald Knob, reaching an elevation of 1,287 meters (4,225 feet). The eastern border of this preserve joins with the George Washington National Forest. To our knowledge this is the first herpetological survey of the area with the exception of limited work by Richard Hoffman (1986).

Sunday's survey was conducted at locations around Douthat State Park. Douthat State Park has been the focus of some previous herpetological work. The second annual Virginia BioBlitz, a 30 hour survey focused on all major taxonomic groups, was held at this park on 17-18 May 2003. The VHS conducted the amphibian and reptile work for this event (Gibson and Hobson, 2006). It was noted in the report of this work that conditions during the 30 hour blitz were cold and rainy and probably led to few observations of reptiles. It was suggested then that the VHS revisit the area to add to the records of reptiles. Additionally,

Sattler and Gibson (2008, 2009, and unpublished data) have written several field notes on work they are conducting on the Jefferson Salamanders at the park.

Materials and Methods

Warm Springs Mountain Preserve was visited on 1 July and Douthat State Park was surveyed on 2 July. The large group was split into multiple teams so that a variety of habitats and sites could be sampled. Standard collecting techniques were utilized including flipping cover objects such as rocks, bark, and logs, visual encounters, listening for vocalizing anurans, and dipnetting for aquatic amphibians. Two baited hoop turtle traps were set in Douthat Lake on the night of 1 July and checked the morning of 2 July. All animals hand captured were inspected for disease and parasites. Each team leader was responsible for documenting all species found, total number of animals captured, and the microhabitat where each species was encountered.

Study Sites

Warm Springs Mountain Preserve Sites

Site 1: Fire Road 364

This site was accessed via Fire Road 364 off State Route 39 at the northern end of the property. A survey group followed the road to its end and then surveyed Mare Run and the forest surrounding this stream.

Site 2: Dan Ingles Overlook Trail

The overlook trail is located in the extreme northern portion of Warm Springs Mountain Preserve. The survey group parked in a parking lot accessed via State Route 39. The survey group followed the steep trail and surveyed the surrounding forest.

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Site 3: Bald Knob

Bald Knob is the highest peaks in the preserve with an elevation of 4229'. The trail leading to the lookout tower was surveyed.

Site 4: Deciduous Trail

This site is located adjacent to Ingalis Air Field. The most interesting feature of this site is a high altitude bog.

Site 5: TNC observation deck

A small group visited a northern preserve site at Flag Rock near the TNC observation deck.

Douthat State Park Sites

Site 6: Douthat Lake and Spillway

This site consists of the lake and the spillway at the south end of the lake. A few vernal pools were also surveyed adjacent to the spillway.

Site 7: Beards Gap Hollow, Locust Gap and Stony Run Trails

The survey group followed the three listed trails for this survey site. These trail names correspond to trails listed in the state park's trail guide.

Site 8: Guest Lodge Trail, Mountain Top Trail

This site consists of two trails. As listed above the names correspond with the trials listed in the park's trail guide.

Results

A total of 28 species and 121 animals were found during the survey weekend. Warm Springs Mountain Preserve yielded 18 species (five anurans, seven salamanders, one lizard, zero turtles, and five snakes). Douthat State Park produced 19 species (seven anurans, six salamanders, two lizards, zero turtles, and four snakes).

Table 2. Summary of the number of animals observed at each site.

Site	1	2	3	4	5	6	7	8	
Species									
Amphibians									
<i>Anaxyrus americanus</i>			1	2			1		
<i>Anaxyrus fowleri</i>						6M	1		
<i>Hyla versicolor</i>						1			
<i>Pseudacris c. crucifer</i>				1		1			
<i>Lithobates catesbeianus</i>						2			
<i>Lithobates clamitans</i>				1					
<i>Lithobates palustris</i>	3					1			
<i>Lithobates sylvaticus</i>	1			2			3M		
<i>Ambystoma maculatum</i>						L			
<i>Desmognathus fucus</i>	6					4			
<i>Desmognathus monticola</i>	11					3	4		
<i>Eurycea cirrigera</i>	4					3			
<i>Plethodon cinereus</i>		7							
<i>Plethodon cylindraceus/ glutinosus</i>	16	3	1				1		
<i>Pseudotriton ruber</i>	1								
<i>Notophthalmus viridescens</i>		1E		1		1	N		
Reptiles									
<i>Plestiodon fasciatus</i>			1			2	1		
<i>Sceloporus undulatus</i>						4	2		

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Site	1	2	3	4	5	6	7	8	
<i>Agkistrodon c. mokasen</i>								1	2 DOR
<i>Carpophis a. amoenus</i>							3		
<i>Crotalus horridus</i>			1		2				
<i>Diadophis punctatus</i>						1	2	1	
<i>Lampropeltis t. triangulum</i>			1						
<i>Nerodia s. sipedon</i>						2			
<i>Opheodrys aestivus</i>									1 DOR
<i>Pantherophis alleghaniensis</i>	1								
<i>Storeria o. occipitamaculata.</i>					1				
<i>Thamnophis s. sirtalis</i>				1					
Total Number of animals/site	43	11	5	8	3	31	18	2	

M= metamorph, N = Numerous, L = Larvae, E = Eft, DOR = dead on road

Annotated Checklist

Amphibians

1. *Anaxyrus americanus americanus* (American Toad) – (3,4,7)

American toads were observed in grass by a gravel road at site three, at the base of a tree at site seven, and in a boggy area at site four.

2. *Anaxyrus fowleri* (Fowler's Toad) – (6,7)

Six metamorph *Anaxyrus fowleri* were captured along the edge of a vernal pool near the dam spillway at site six. A single adult was found on the forest floor adjacent to the woodland vernal pool at site seven.

3. *Hyla versicolor* (Gray Treefrog) – (6)

One lone Common Gray Treefrog was heard vocalizing by Douthat Lake on 2 July.

4. *Pseudacris crucifer crucifer* (Northern Spring Peeper) – (4,6)

An adult Northern Spring Peeper was captured at site four near a boggy habitat. A male peeper was heard calling on 2 July at the edge of the lake at site six.

5. *Lithobates catesbeianus* (American Bullfrog) - (6)

Two large adult bullfrogs were observed at the shore of Douthat Lake while setting turtle traps on 1 July.

6. *Lithobates clamitans melanota* (Northern Green Frog) – (4)

On 1 July one male Northern Green Frog was vocalizing from a boggy area at site four.

7. *Lithobates palustris* (Pickerel Frog) – (1,6)

Several Pickerel Frogs were found; one in a muddy seep at site one and the other in the leaf litter of a floodplain near the lake at site six.

8. *Lithobates sylvatica* (Wood Frog) – (1,4,7)

Wood frogs were found in rotten logs and under leaf litter at three sites. All observations were made near water.

9. *Ambystoma maculatum* (Spotted Salamander) – (6)

Spotted salamanders were found at one site. Many larvae were

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dipnetted in the vernal pool by the spillway of Douthat Lake.

10. *Desmognathus fuscus* (Northern Dusky Salamander) – (1,6)

All ten dusky salamanders found were hiding under rocks along streams.

11. *Desmognathus monticola* (Seal Salamander) – (1,6,7)

Seal Salamanders were found under rocks and in the water of small streams at three sites.

12. *Eurycea cirrigera* (Southern Two-lined Salamander) – (1,6)

All seven Southern Two-lined Salamanders were found under rocks along streams at sites one and six.

13. *Plethodon cinereus* (Red-backed Salamander) – (2)

Surprisingly, Red-backed Salamanders were only found at one site. This site was one of the driest and most upland. Red-backed salamanders were found under rocks and logs.

14. *Plethodon cylindraceous/glutinosus* (White Spotted Slimy Salamander/Northern Slimy Salamander) – (1,2,3,7)

Slimy salamanders were the most abundant salamander found during the survey weekend. Animals were found under bark, under logs, and one in a tree hole.

15. *Pseudotriton ruber* (Red Salamander) – (1)

Only one *Pseudotriton ruber* was found during the survey time. It was discovered under a log.

16. *Notophthalmus v. viridescens* (Red-spotted newt) – (2,4,6,7)

Newts were observed in many locations. One eft was found on the walking trail at site two. Adults were found in Douthat Lake, swimming in the woodland vernal pond at site seven, and near a boggy area at site four.

Reptiles

17. *Plestidon fasciatus* (Five-lined Skink) – (3,6,7)

Five-lined Skinks were observed on fallen logs and under plywood at sites three, six and seven.

18. *Sceloporus undulatus hyacinthinus* (Northern Fence Lizard) – (6,7)

Six Northern Fence Lizards were found basking on fallen trees at sites six and seven. Several were inspected at site six and were found to have mites near ear openings.

19. *Agkistrodon contortrix mokasen* (Northern Copperhead) – (8)

One live copperhead was found under leaf litter at the bottom of a ravine on the Guest Lodge Trail at Douthat State Park. Two DOR snakes were observed on Route 629 about 5 km south of the junction of Route 39.

20. *Carphophis amoenus amoenus* (Eastern Wormsnake) – (7)

Wormsnakes were found under logs and under bark at site seven.

21. *Crotalis horridus* (Timber Rattlesnake) – (3,5)

Timber Rattlesnakes were found at two sites. One was found at site three. This animal was crossing a trail through *Rhodendron* within 7

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meters of Bald Knob Lookout Tower (4250' elevation). Two rattlesnakes were observed basking on rocks near the TNC observation deck at site five. Two sheds were also found at this site.

22. *Diadophis punctatus* (Ring-necked Snake) – (6,7,8)

Ring-necked Snakes were the most commonly observed snake. Animals were found under rocks and under bark at three sites.

23. *Lampropeltis triangulum triangulum* (Eastern Milk Snake) – (3)

One Eastern Milk Snake was captured as it crossed a gravel road at site three.

24. *Nerodia sipedon sipedon* (Northern Watersnake) – (6)

One adult and one juvenile Northern Watersnakes were found on and under rocks at the spillway at site six.

25. *Ophedrys aestivus* (Rough Green Snake)

Rough Green Snakes were not found at Warm Springs Mountain Preserve or Douthat State Park. One DOR animal was found on Route 629, 100 meters south of Buck Horne Campground. This animal was dissected and found to contain three eggs.

26. *Pantherophis alleghaniensis* (Eastern Rat Snake) – (1)

A single Eastern Rat Snake was found crawling on a hillside next to the fire road at site one.

27. *Storeria occipitomaculata occipitomaculata* (Northern Red-bellied Snake) – (5)

A gravid female Northern Red-bellied Snake was observed between rocks near the TNC observation deck.

28. *Thamnophis sirtalis* (Eastern Garter Snake) – (4)

One Eastern Garter Snake was captured near a boggy area at site four.

Discussion

The objective of the spring VHS meeting and survey is to help increase our knowledge of herps in Virginia. This main goal was achieved during the weekend survey. To my knowledge no herpetological inventory work has been done for Warm Springs Mountain Preserve, so the VHS was able to begin to develop a list of species for this area. By the end of the day on Saturday we compiled a list of 18 species for the sites that we visited. Unfortunately we were not able to find *Scincella lateralis* as Hoffman (1986) reported finding from this property some two decades earlier. Because this property is vast the VHS was only able to sample a small portion of the total property. As more amateur and professional herpetologists conduct work on these sites and new sites on the property, this species list has the potential of increasing significantly. Herpetological surveys should also be conducted at different times during the year to record species that have activity periods at different times and in different seasons.

The return visit to Douthat State Park was made to increase the number of reptile observations there. The first visit to the park in 2003 yielded few reptile observations, especially of snake species. In the 2006 visit we did not add any new observations of reptiles but did increase the number of anuran species by three. *Lithobates palustris*, *Hyla versicolor*, and *Anaxyrus fowleri* were species previously undocumented for the park. *Hyla versicolor* appears to be a new county record; however we did not get a voucher recording or photograph. The species count for the park now can be raised by three from 28 to the current 31. This number has the likelihood of increasing significantly with some work on collecting snake species. After a review of the records in Michell and Reay (1999) 19 species have the potential of being found in the park. Ten of the 19 species are documented for

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Bath County and the other species are found in surrounding counties. *Pseudacris feriarum* is the only other anuran that might reside in the park; however *Scaphiopus holbrookii* has turned up in less likely places. Four salamander species including *Desmognathus ochrophaeus*, *Hemidactylium scutatum*, *Plethodon hoffmani*, and *Plethodon wehrlei* are good candidates for being added to the total park species list. The only turtle with the likelihood of being found in the park is *Chrysemys picta*. This turtle has not been found despite visual encounter surveys of Douthat Lake and the setting of baited hoop turtle traps on two different occasions. Lizard and snake species have the greatest potential of raising the park's total species list. Four lizard and nine snake species might be encountered within the park's boundaries. These species include *Aspidooscelis sexlineatus*, *Plestiodon anthracinus*, *Eumeces laticeps*, *Scincella lateralis*, *Coluber constrictor*, *Crotalis horridus*, *Pantherophis guttatus*, *Heterodon platirhinos*, *Opheodrys aestivus*, *Opheodrys vernalis*, *Pituophis melanoleucus*, *Storeria dekayi*, and *Virginia valeriae*.

Table 2. Comparison of surveys at Douthat State Park and Warm Springs Mountain Preserve.

Species Lists	Gibson and Hobson, 2006	Douthat State Park survey 2006	Warm Springs Mountain Preserve 2006
<u>Species</u>			
Amphibians			
<i>Anaxyrus americanus</i>	*	*	*
<i>Anaxyrus fowleri</i>		*	
<i>Hyla versicolor</i>		*	
<i>Pseudacris c. crucifer</i>	*	*	*
<i>Lithobates catesbeianus</i>	*	*	
<i>Lithobates clamitans</i>	*		*
<i>Lithobates palustris</i>		*	*
<i>Lithobates sylvaticus</i>	*	*	*

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<i>Ambystoma jeffersonianum</i>	*		
<i>Ambystoma maculatum</i>	*	*	
<i>Ambystoma opacum</i>	*		
<i>Desmognathus fucus</i>	*	*	*
<i>Desmognathus monticola</i>	*	*	*
<i>Eurycea cirrigera</i>	*	*	*
<i>Eurycea longicauda</i>	*		
<i>Gyrinophilus porphyriticus</i>	*		
<i>Plethodon cinereus</i>	*		*
<i>Plethodon cylindraceous/glutinosus</i>	**	*	*
<i>Pseudotriton ruber</i>	*		*
<i>Notophthalmus viridescens</i>	*	*	*
Reptiles			
<i>Chelydra serpentina</i>	*		
<i>Terrapene carolina</i>	*		
<i>Plestiodon fasciatus</i>	*	*	*
<i>Sceloporus undulatus</i>	*	*	
<i>Agkistrodon c. mokasen</i>	*	*	
<i>Carphophis a. amoenus</i>	*	*	
<i>Crotalus horridus</i>			*
<i>Diadophis punctatus</i>	*	*	
<i>Lampropeltis t. triangulum</i>	*		*
<i>Nerodia sipedon sipedon</i>	*	*	
<i>Ophedrys aestivus</i>			
<i>Pantherophis alleghaniensis</i>			*
<i>Storeria o. occipitamaculata</i>			*
<i>Thamnophis s. sirtalis</i>	*		*
Total Number of species by site	28	19	18

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