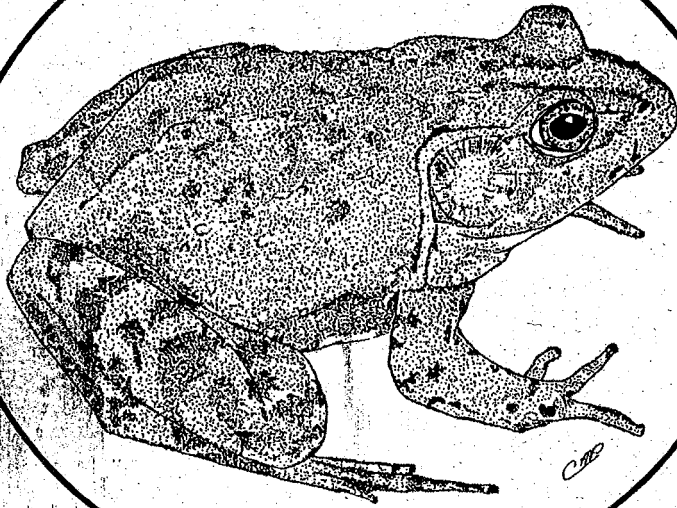


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CATESBEIANA



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Manuscripts for consideration of publication in *Catesbeiana* should be doublespaced and submitted to the Editor electronically or typewritten on good quality 8½ by 11 inch paper, with adequate margins. Consult the style of articles in this issue for additional information, including the appropriate format for literature citations. The metric system should be used for reporting all types of measurement data. Computer diskettes or email attachments in Word or WordPerfect format are desired for all papers. Submissions concerning the herpetofauna of selected areas, such as a park, city or county, should be prepared in article rather than field note format. Articles will be refereed by the editor and one or more qualified reviewers. All changes must be approved by the author before publication; therefore, manuscripts must be received by the editor before March 1 and September 1 to be considered for publication in the spring and fall issue, respectively, of *Catesbeiana*. Reprints of articles are not available, but authors may reprint their own articles to meet professional needs.

(Editorial policy continued on inside back cover)

CATESBEIANA

Bulletin of the Virginia Herpetological Society

Volume 27

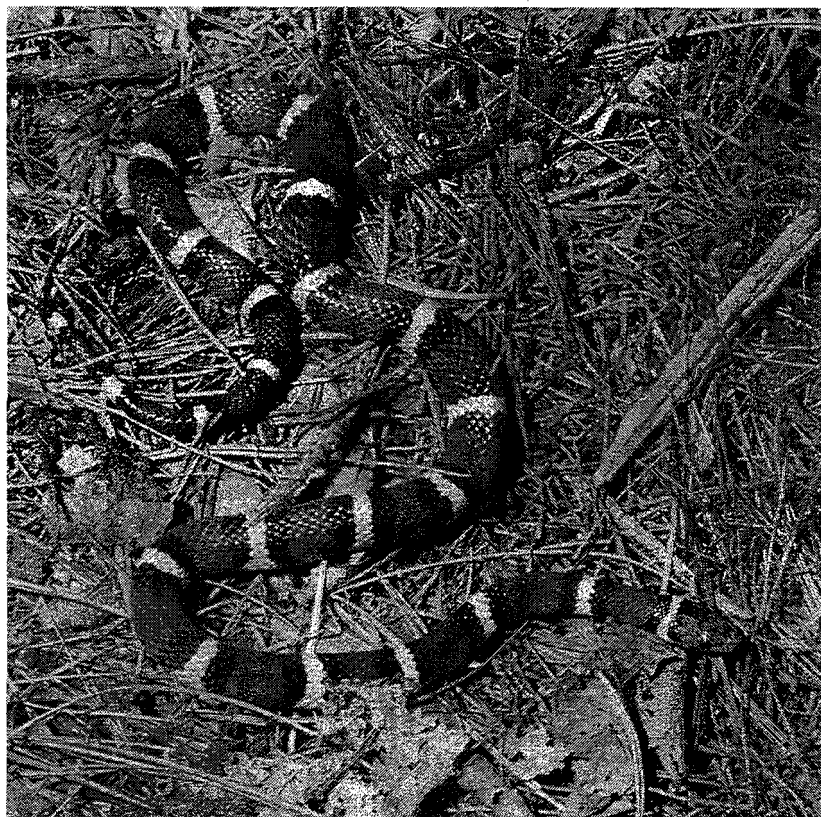
Fall 2007

No. 2

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For information on future meetings and field trips
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Scarlet Kingsnake from Bedford County, Virginia
(photo by John White); see related article on pages 84-94.

Overwintering Behavior of the Eastern Box Turtle (*Terrapene carolina* L.) in the Virginia Piedmont

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Introduction

The Eastern Box Turtle (*Terrapene c. carolina* L.) is a common terrestrial turtle found throughout the eastern United States. The species occurs in a wide variety of habitats, but its range closely coincides with that of the eastern deciduous forest (Dodd, 2001). Like most ectotherms, box turtles enter a state of torpor during the winter months. Locating overwintering sites is essential to Eastern Box Turtle survival because cold temperatures and a scarcity of food during the winter would cause high mortality (Dodd, 2001). Box turtles usually bury themselves in shallow depressions, or forms, beneath the frost line (Dodd, 2001). As winter advances and temperatures become increasingly colder, box turtles will dig deeper into the ground (Dolbeer, 1971). Winter thermal gradients coincide with the cooling body temperatures of box turtles; some portions of the body can freeze without causing death (Costanzo and Claussen, 1990).

Overwintering behavior of Eastern Box Turtles may vary within its extensive geographic range. In Virginia, few studies have been conducted on the location of hibernacula and the overwintering phenology of this species. We conducted a study of the overwintering behavior of the Eastern Box Turtle in Franklin County, Virginia, on the upper part of the Piedmont physiographical province. The objectives of our study were to describe the characteristics of hibernacula, determine when turtles entered and left the hibernacula during winter, and how overwintering behavior related to ambient temperature.

Study Site

Our study was conducted on the campus of Ferrum College, Ferrum, within a 1-km radius of Ferrum Mountain and Ferrum Ridge, Franklin County, Virginia. The study site contained mostly deciduous forest dominated by oak species (*Quercus* spp.), Tuliptree (*Liriodendron tulipifera*), Tree-of-heaven (*Ailanthus altissima*), and Red Maple (*Acer rubrum*), with some White Pine (*Pinus strobus*) and Virginia Pine (*Pinus virginiana*). Slopes in the area ranged from 10-25%.

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Materials and Methods

Five adult turtles (3 males, 2 females) were captured in the study area between May and August 2006. Each was fitted with a radiotransmitter (Wildlife Materials, Murphysboro, IL) and an I-button sensor (Thermochron, Dallas, TX) on the marginal scutes of its carapace with either marine or gel epoxy. An additional temperature sensor was placed on top of the leaf litter in a central location in the study area to record ambient temperature conditions. Combined weight of the I-button sensor and radiotransmitter did not exceed 0.5% of the total weight of each turtle. I-button sensors were programmed to record temperature data at 30 minute intervals. After mounting the transmitters and temperature recorders, the turtles were released at their original capture location. Mean weight of the turtles was 338 g, with a range of 320-360 g. Estimated mean age of the turtles, obtained by counting the rings on one of the carapace scutes, was 28 y, with a range of 16-35 y.

Box turtle movements were monitored at least twice weekly during the summer using a radiotelemetry receiver (Wildlife Materials, Murphysboro, IL) to determine home range size but, for the purposes of this study involving overwintering behavior, turtles were tracked once or twice per week from September 2006 until May 2007. A global positioning system (Garmin GP3) was used to record locational data. The behavior of each turtle before and during overwintering was noted (movements, locations, excavation into leaf litter or soil, seeking cover under woody debris), and hibernacula locations were described (percent overstory cover, percent understory cover, aspect, percent slope, topographic position, depth into soil, and other structural habitat features). Temperature data were retrieved from the I-button sensor at bi-weekly intervals throughout the study by carefully exposing the sensor on the carapace without exposing the rest of the turtle.

Results

Four turtles overwintered within their summer home ranges, whereas one female chose a hibernaculum approximately 150 m outside of her summer home range. The hibernacula of the five turtles were highly variable and included a middle-upper slope position with a southern aspect, a lower slope position with a southwestern aspect, an upper slope position with a northeastern aspect, and upper slope positions near the ridge with northern and western aspects, respectively. Four overwintering sites were under hardwood tree overstories and one was in a small (5 m diameter) canopy gap. Two hibernacula were under fallen logs and the remaining three turtles hibernated in open areas on the forest floor. All hibernacula included a layer of leaf litter and a layer of humus approximately 2 cm deep. The thickness of the leaf litter changed during the

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course of fall; as more leaves fell, the lower layer became more compact, forming a wet compacted bottom layer that separated the soil from the top layer of drier leaves.

Turtles actively moved throughout September and were usually found on the leaf litter surface. In early October, movement distances between tracking dates began to decrease and they were often found beneath the leaf litter. The first frost occurred in the study area on 13 October and the first killing frost followed two days later. All of the turtles, however, continued some daily movement over the next two weeks, with a mean distance of approximately 30 m.

Two turtles had settled into hibernacula by 26 October. Immediately preceding this date, there was a sharp temperature drop due to the passing of a cold front (Fig. 1). The hibernacula of these turtles, approximately 2-4 cm beneath the soil, allowed them to reach relatively stable temperatures compared to ambient conditions (Fig. 2). The other three turtles moved frequently during the next three weeks, but only for short distances (<10 m between tracking dates). Two of these turtles entered their hibernacula by 13 November and the remaining turtle was

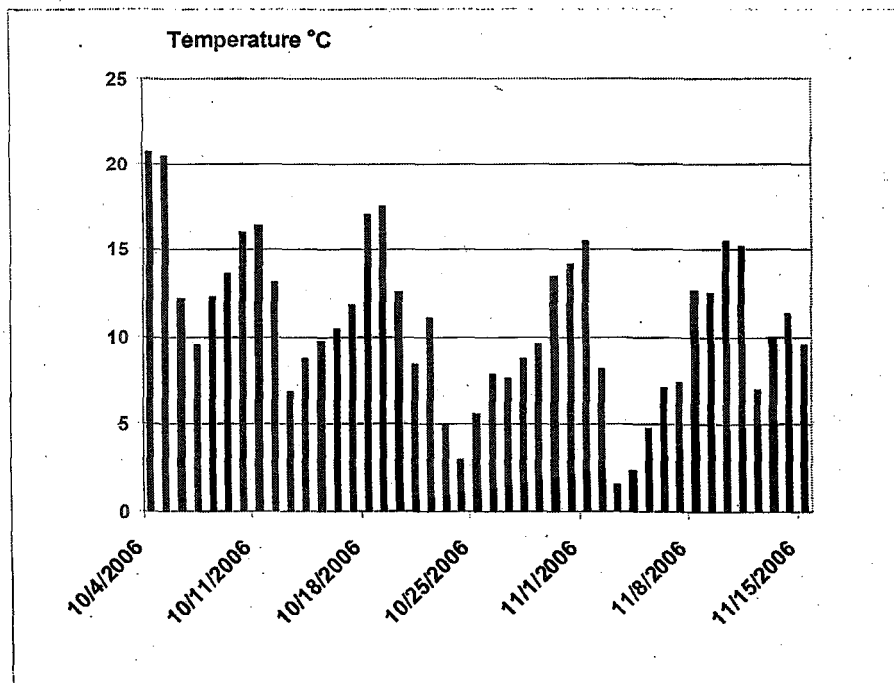


Fig. 1. Mean ambient daily temperature from 4 October – 15 November 2006 at Ferrum College campus, Franklin County, Virginia.

still moving frequently as late as 29 November, but only for short (<3 m) distances. Upon entering hibernacula, each turtle's carapace was parallel with the soil surface and approximately 2-4 cm under humus. Hibernacula depths ranged from 2.5-12.5 cm beneath the humus layer, with a mean depth of 5.75 cm. After each movement, the turtles were always found under the humus layer. Two turtles moved in January (Fig. 3), four in March (Fig. 4), and by April, movement was only observed for two turtles. One female turtle did not move again after selecting her hibernaculum.

Discussion

All five of the study turtles entered their hibernacula after the passage of strong cold fronts, but they did not all do so after the same front. A study of Eastern Box Turtle hibernation in southern Ohio found that most turtles entered hibernacula between mid-October and mid-November and that hibernaculum depth increased with decreasing temperature, averaging 4-5 cm, with a maximum depth of 14 cm (Claussen et al., 1991). In South Carolina, Congdon et al. (1989) found that hibernacula depths of box turtles rarely exceed 4 cm. As in our study, Stickel (1989) found that most box turtles at a study site in Maryland overwintered within their summer home ranges, although Hall et al. (1999) observed that most of the turtles in a subsequent study at the same site moved outside their home range to overwinter.

Schwartz and Schwartz (1974) found that Three-toed Box Turtles (*Terrapene c. triunguis*) that emerged from hibernacula prematurely were prone to mortality if they were unable to return to cover. Neill (1948) suggested that more turtles die due to cold temperatures during premature emergence than to any other cause. During winter, the tops of their carapaces never exceeded 14 cm beneath the soil surface. As opposed to these results, we noticed that our turtles had only excavated 2-4 cm below the soil surface this early in the overwintering stage, and only one turtle had started to angle its body downward during early overwintering. The other turtles were still in a position with the plastron parallel to the upper surface of the leaf litter.

One turtle moved frequently throughout overwintering, although for only short distances. There was no correlation between temperature and winter movements, but it was presumably warm enough to allow for activity by this ectothermic species. Little measurable snowfall was recorded during the study period and temperatures were warmer than average. Ironically, turtles moved immediately after an ice storm but not during a prolonged warm period in early spring. Several other studies reported movements during overwintering periods, mostly restricted to early winter (Allard, 1948; Dolbeer, 1971; Congdon et al., 1989; Claussen et al., 1991; Budischak et al., 2006). Activity during winter by Eastern Box Turtles

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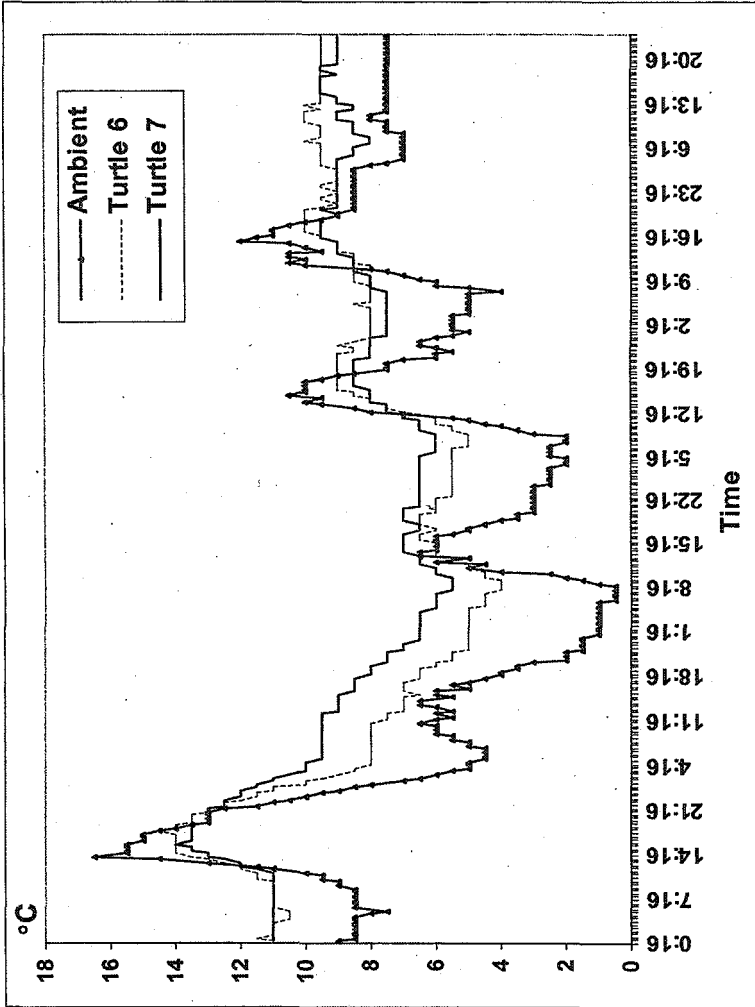


Fig. 2. Ambient temperature versus temperature on the carapace of two box turtles (#6 and #7) from 22-27 October 2006 on Ferrum College campus.

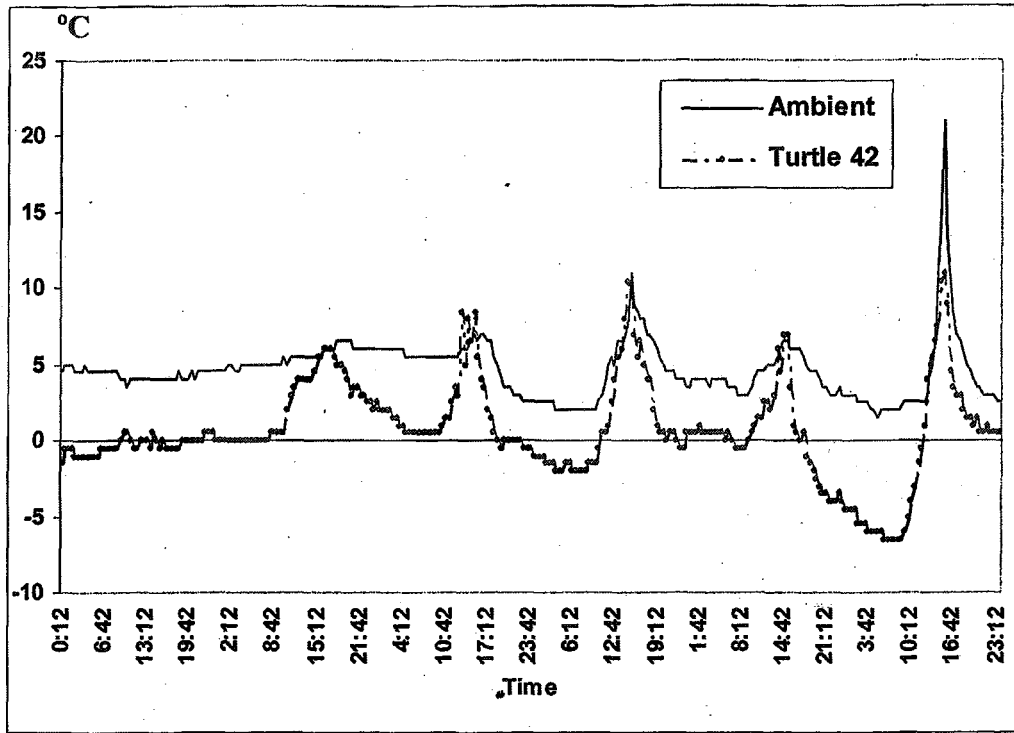


Fig. 3. Ambient temperature versus temperature on the carapace of box turtle (#42) from 21-26 January 2007 on Ferrum College campus. This turtle was apparently out of its hibernaculum because its carapace temperature tracked that of ambient temperature.

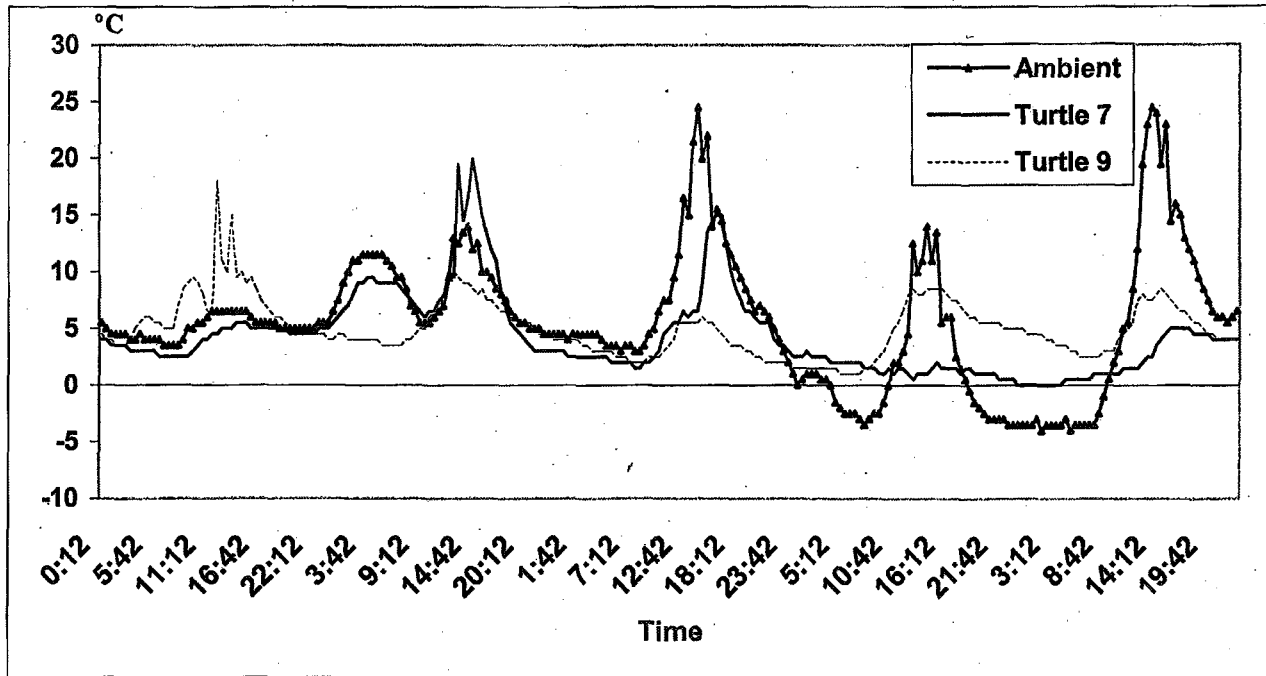


Fig. 4. Ambient temperature versus temperature on the carapace of two box turtles (#7 and #9) from 1-5 March 2007 on Ferrum College campus. Turtle #9 was apparently out of its hibernaculum because its carapace temperature tracked that of ambient temperature.

was also recorded in Virginia by Hunley (1998) and Mitchell (2005).

The hibernacula of the five turtles were situated on different aspects and slopes. Claussen et al. (1991) found that turtle hibernacula varied in the amount of insulative cover (i.e., leaf litter), as did our results. The upper portion of the leaf litter in our study was drier than the lower layer of leaves, which were damp throughout many of the sites, creating a bond between each leaf, forming a protective layer.

The results of our study suggest that box turtles may maintain activity until late in the fall and emerge at intervals throughout the winter, although movements are never far from their original hibernacula. Timing of overwintering, movements during winter, and characteristics of the hibernaculum location varied widely among turtles in this study.

Acknowledgments

We thank Ferrum College, especially Leslie Lambert, Dean of Academic Affairs, for supporting this study through the Ferrum College Professional Development Fund.

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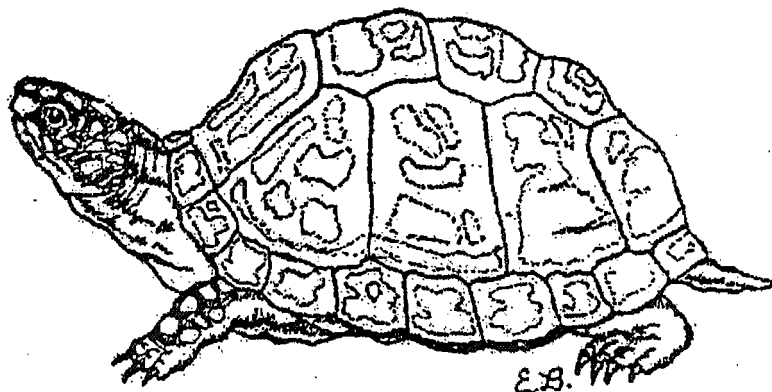
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Turtle Diversity of U.S. Army Installation, Fort Eustis, Virginia

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Introduction

Fort Eustis (3,091 ha) is a U.S. Army installation located in the Coastal Plain of southeastern Virginia adjacent to the City of Newport News. The primary mission is transportation and related logistical training. The James River comprises the western and southern boundaries, the Warwick River comprises the eastern boundary, and Newport News abuts the northern end of the installation. The installation has a diversity of habitat types including tidal marshes, isolated wetlands, ephemeral pools, several man-made lakes, open tidal shoreline, and mixed upland forest with riparian corridors along streams.

The natural resource manager and wildlife biologist staff at the installation are responsible for monitoring wildlife species in accordance with the Fort Eustis Integrated Natural Resources Management Plan (INRMP). The INRMP is structured towards the management for biodiversity of native species. Subsequently, non-game species including reptiles and amphibians represent integral components of the plan.

- Monitoring of non-game wildlife species is typically performed by implementing (1) periodic planning level surveys through contract mechanisms; and (2) species-specific and categorical surveys being conducted by installation natural resources staff. Planning level surveys are performed for all wildlife and support land and other resource use planning as well as serve as baseline data for species-specific surveys. The need for planning level surveys however, is variable and may be generated by significant changes in military missions and land use changes. Categorical surveys focus on a special group such as turtles. Currently, turtle surveys are performed usually every five years based on availability of

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resources. Species-specific surveys are typically performed to support environmental impact assessments of given projects or as directed.

Installation natural resources staff surveyed one man-made lake and two natural impoundments during 2002 and 2007 and added a second man-made lake (Eustis Lake) during the 2007 survey. The results of these two surveys combined with previous observations (Versar, Inc., 2006, and incidental encounters) were used to determine the relative extent of turtle diversity at the installation.

Materials and Methods

Both the 2002 and 2007 surveys were conducted in a similar fashion. The 2002 survey was conducted in August whereas the 2007 survey was performed in June through August. Basking and hoop traps (baited with sardines) were used in both cases. During the 2007 survey, a fisheries survey was performed concurrently at Eustis Lake. In this case minnow traps and fyke nets were intentionally utilized for fish; however, in some cases turtles were captured in these traps as well. The results of these surveys were compared with each other as well as a planning level survey performed from 2004-2005 (Versar, Inc., 2006) and incidental encounters on the installation. Additionally, carapace length and width were measured (in centimeters) for each specimen using calipers, and specimens were marked to identify recaptures by filing a notch in the posterior margin of the carapace. This data was collected to support potential future studies.

Survey Site Descriptions:

Site 1: Brown's Lake (1.2 ha) has an estimated maximum depth of 3.66 meters. It contains no aquatic macrophytes but woody deciduous vegetation occurs on the banks. The lake has no recreational use. Basking resources are minimal. It is located near family housing areas and some work sites.

Site 2: Range Lake (4 ha) is a natural impoundment with a maximum depth of 1.23 meters; however, water level fluctuates with beaver (*Castor canadensis*) activity. No submerged vegetation exists but the lake has approximately 25% coverage of emergent vegetation and contains woody deciduous vegetation along the banks. The lake has no recreational use. Basking resources are minimal. It is located in a more remote, undeveloped area of the installation.

Site 3: NBC Lake (0.4 ha) is a natural impoundment with a maximum depth of 1.23 meters. No submerged or emergent vegetation exists. It has no recreational use. It contains moderate to heavy basking resources from woody debris. It is located in a more remote, undeveloped area of the installation.

Site 4: Eustis Lake (18 ha) is a large man-made lake with an estimated maximum depth of 2.44 meters. It is used for public recreational purposes including catch and release sport fishing, paddle boats, and small watercraft with trolling motors. This surface water is closer to the installation boundary than the other sites. No submerged aquatic vegetation exists, and the lake has approximately 5% emergent vegetation coverage, primarily in small coves, and contains a moderate amount of basking resources from woody debris. A turtle survey was not performed at Eustis Lake in 2002 due to workload and time constraints.

Results

Five turtle taxa were captured during the 2002 survey, including *Chelydra serpentina* (Common Snapping Turtle), *Chrysemys picta* (Eastern Painted Turtle), *Kinosternon subrubrum* (Eastern Mud Turtle), *Trachemys scripta elegans* (Red-eared Slider), an introduced exotic (Mitchell, 1994), and *Pseudemys rubriventris* (Red-bellied Turtle). All turtles were captured in hoop traps. A total of six taxa were captured during the 2007 survey. These included *C. serpentina*, *C. picta*, *T. s. elegans*, *K. subrubrum*, *Sternotherus odoratus* (Common Musk Turtle), and *Trachemys scripta scripta* (Yellow-bellied Slider). One incidental encounter with a *P. rubriventris* occurred in August 2007 in a location separate from the survey sites. Most turtles were captured in hoop traps (no captures occurred with basking traps); however, several Painted, Mud, and Musk turtles were captured in minnow traps and several Snapping Turtles, Painted Turtles, Red-eared Sliders, Mud Turtles, and Musk Turtles were captured in fyke nets intended for fish captures. Table 1 compares the average sizes for each taxon by survey site.

Trachemys s. elegans is considered an introduced subspecies with established populations in portions of Virginia, including populations containing intergrades between *T. s. elegans* and *T. s. scripta* (Mitchell, 1994). Thirteen were captured in Eustis Lake in 2007 and two others in Range Lake in 2002.

- No *Terrapene carolina* (Eastern Box Turtle) were captured during the 2002 or 2007 surveys because of their terrestrial nature. This species, however, is routinely encountered by natural resources staff in forested upland habitat. At least six live specimens were encountered by staff or were brought in by well-intentioned individuals who found them crossing roads or in developed cantonment areas. In several cases, carapaces have been found in various locations around the installation that likely resulted from predation or fire. Eleven live individuals were recorded during the 2004-2005 planning level survey.

No *Clemmys guttata* (Spotted Turtle) were captured during the 2002 or 2007 surveys. Two individuals were observed during the 2004-2005 planning level

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Table 1: Mean body size of turtles captured at Fort Eustis survey sites; combined data from 2002 and 2007.

Taxon	Site 1 - Browns Lake		Site 2 - Range Lake		Site 3 - NBC Lake		Site 4 - Eustis Lake	
	N ¹	Carapace Length ² Width	N	Carapace Length Width	N	Carapace Length Width	N	Carapace Length Width
<i>Chelydra serpentina</i>	4	24.46 20.52	1	25.15 21.59	8	24.74 20.27	7	29.45 24.41
<i>Kinosternon subrubrum</i>	-	- -	1	9.65 6.86	2	9.02 6.48	1	8.38 6.86
<i>Sternotherus odoratus</i>	-	- -	-	- -	-	- -	2	10.29 7.11
<i>Chrysemys picta</i>	5	13.46 10.26	19	11.96 9.04	5	14.02 10.52	17	12.80 10.11
<i>Pseudemys rubriventris</i> ³	1	26.42 18.80	-	- -	-	- -	-	- -
<i>Trachemys scripta elegans</i>	-	- -	2	12.32 10.03	-	- -	13	20.52 16.10
<i>Trachemys scripta scripta</i>	-	- -	-	- -	1	25.65 18.54	-	- -

¹ N refers to the sample size.

² Carapace length and width measurements are in centimeters.

³ One *Pseudemys rubriventris* was captured during the 2002 survey. The incidental observation in 2007 was not included in the table because that turtle was not found at one of the survey locations.

survey. One of these was found in a mixed forested upland and the other was observed in a freshwater wetland.

No *Malaclemys terrapin* (Diamond-back Terrapin) were captured or observed during the 2002 or 2007 surveys. Incidental visual observations of two individuals were made on the Warwick River in the spring of 2003 in a vegetated mudflat adjacent to the Fort Eustis shoreline.

Discussion

The intent of this study was to determine the relative diversity of terrestrial, semi-aquatic, and aquatic turtles occurring at Fort Eustis. According to Mitchell and Reay (1999), 13 possible turtle taxa (including *T. s. elegans*) occur in the Coastal Plain of Virginia (excluding sea turtles). We used this resource to measure the relative diversity of turtles at the installation.

The 2002 and 2007 surveys identified seven turtle taxa on Fort Eustis. A review of the planning level survey conducted from 2004–2005 and data from incidental encounters documented between 2002 and 2007 add an additional three taxa. This confirms a total of 10 turtle taxa on the installation: *Chelydra serpentina*, *Chrysemys picta*, *Clemmys guttata*, *Kinosternon subrubrum*, *Malaclemys terrapin*, *Pseudemys rubriventris*, *Sternotherus odoratus*, *Terrapene carolina*, *Trachemys scripta elegans* (non-native invasive), and *T. s. scripta*. Compared to 13 possible taxa, this probably represents a “healthy” diversity.

Trachemys s. scripta, *P. rubriventris*, and *C. guttata* were encountered infrequently in this study. A more thorough evaluation of suitable habitat and species-specific surveys should be considered.

More data on *M. terrapin* are also needed. Survey locations in this study were not in appropriate habitat for this species. Even though some individuals have been observed incidentally along the Warwick River, it is desirable to obtain information on the extent and success of nesting at Fort Eustis.

This study underscores the need to conduct further research on the distribution and population trends of *T. s. elegans* on the installation. This information would be useful towards determining whether this species is impacting other turtle species and the local ecology. Furthermore, surveying additional sites may yield additional turtle species not previously documented on the installation.

No turtles were captured in basking traps during the 2002 or 2007 surveys. We speculate that the use of basking traps may be better utilized in early spring when water temperatures are typically lower.

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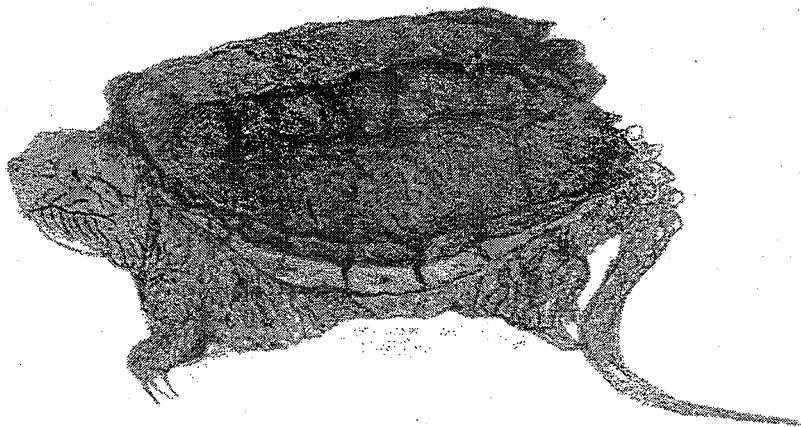
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KHARRIS 07

Juvenile Snapping Turtle (*Chelydra serpentina*);
original drawing by Kyle Harris.

Fluctuations in Mating Activity of *Hyla chrysoscelis* in Southside Virginia

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Several years ago I belatedly became aware of an interesting situation regarding population fluctuations of *Hyla chrysoscelis* in southside Virginia. The scenario had already developed and mostly played out before I was aware of it, otherwise I would have taken pains to accumulate data a little more objectively. As it is, the following, strictly narrative, account is reconstructed from imprecise recollections, but even so flawed it may be of interest to others having had – or likely to have – a similar experience. Without having made a thorough literature search, I suspect that the described phenomena may have widespread application to populations of hylids across the board.

My residence in Martinsville, Virginia, is in an outlying area characterized by a mosaic of small dwellings lining city streets, several apartment and condominium complexes, and isolated patches of woodland separating the foregoing – a suburban into rural transition. My condominium lies at the end of a cul-de-sac surrounded by a marginal “gallery forest”, ranging from about 30 to 130 meters in width. Directly behind is the course of a minuscule, but permanent, spring-fed streamlet, and above that, a small shallow pond that usually dries up in late summer.

I took up residence at this locality in July of 1990. For the next 11 years the only frogs that I heard vocalizing were *Pseudacris crucifer* and *P. feriarum*, usually in choruses of less than a dozen males. That other species occupied the stream was evident from the recovery of half-grown specimens of *Rana clamitans* from the small condominium swimming pool during the summer months, although I have never heard a single note that would suggest local breeding by this species.

In May of 2002, therefore, I was surprised one evening to hear the unmistakable trills of *H. chrysoscelis* coming from the swimming pool of the adjacent apartment complex, approximately 50 m from my front door. This seemed curious in view of the fact that the entire general area is on a ridgetop, with no bodies of water anywhere nearby. Where had these frogs come from, and from what distance? As best as I could determine, perhaps three or four males were calling, and they continued doing so on into June.

In May of 2003, this apparently immigrant population was maintained and perhaps augmented a little, maybe five or six calling males of *H. chrysoscelis* could be distinguished.

MATING ACTIVITY OF *HYLA CHRYSOSCELIS*

In 2004, early May brought in *H. chrysoscelis* in profusion: they were virtually everywhere in the wooded areas: in the trees, in the two swimming pools mentioned, in rain puddles in the parking lot. My condominium unit was entirely surrounded, and although the temporary pond was occupied, there was no congregation there, just a few. In an area no greater than 100 m on a side, probably 50-60 males could be estimated on warm evenings after rain.

In 2005 the numbers of calling males were greatly reduced and very sporadic. But in July, I was visited for several days by Gerlinde Hoebel, a graduate student of Dr. Carl Gerhardt at the University of Missouri-Columbia, who was investigating the interactions of *H. chrysoscelis* and *H. versicolor* in a postulated zone of contact in the western Piedmont. For several nights we drove extensively through Patrick, Henry, and Pittsylvania counties and located small choruses - all of them containing only *H. chrysoscelis* - at a number of localities. Her visit was fortuitously well-timed, because 2006 saw an abrupt decline in population density at my residence. Only a few dispirited males were calling, mostly from trees and shrubs, none at the swimming pools.

Activity in 2007 has been essentially negative in Martinsville. On 30 June, a single male called several times near my residence (not at either pool), but fell silent and was not stimulated by generous rainstorms later that day and several following. On 14 June of this year I heard four males calling from roadside shrubbery not far from Critz, in Patrick County, but road cruising over much of the route covered in 2005 has been negative.

To add to the problem, 2007 is the first year in 18 that not a single individual of either *P. crucifer* or *P. feriarum* vocalized from the pond behind my residence. Without recourse to actual rainfall data for this region, I can only assert that on balance precipitation seems to have been about comparable throughout the time period. The winter of 2006-07 was the mildest of my personal recollection, and the spring of 2007 provided a reasonable number of thunderstorms and a few episodes of cool rainy days. Subjectively, the spring months of 2005-07 did not appear to me noticeably different from those preceding.

As outlined, the scenario depicts a marginal appearance of sexually active male *H. chrysoscelis* in an area previously unoccupied (or undetected), a gradual increase during the following year, and then a quantum increase in the number of calling males for one season, following by an abrupt and dramatic decrease in the numbers. Hard figures would surely have produced a normal bell-shaped curve.

A somewhat similar, but far less well-documented case involves a population of *Hyla cinerea* in Greensville County, Virginia. At sporadic intervals beginning in

1952 I had occasion to collect in that region, with frequency of visitation accelerated in 1993 when VMNH personnel installed a drift fence-pitfall array in the Meherrin River floodplain about 1.6 km east of the mapped place "Claresville". On the edge of an extensive swamp, this site typically supported a vast population of *H. chrysoscelis*, heard on every visit during the summer months of the early 1990s. Up until 1994, I had never heard *H. cinerea* anywhere in Greensville County, despite ongoing road-cruising before, during, and after rains. I was therefore pleasantly surprised upon hearing this species calling in a swamp at the intersection of county routes 666 and 624, in the Fontaine Creek area on 14 June 1994 (Hoffman, and Mitchell, 1996). As the site was impacted by dense growths of cane, catbriers, and other vegetation, I returned the following day and forced a path into the swamp, resulting in the capture of a male, one of four or five calling, that evening. At the same site on 9 June 1995, the number of calling males was increased tenfold or more.

On the same night, on returning to the Claresville site to operate a black-light trap for insects, I was astonished that the frog chorus had changed drastically: *Hyla chrysoscelis* was only marginal, while now *H. cinerea* was calling by the hundreds (Hoffman, and Mitchell, 1996), and this profusion was still in force two months later on 8 August 1995 (the date 7 August 1996 cited by those authors was a clerical error)! Where had the latter species been during the previous summer visits to the site? It is a frog that one does not likely overlook, and does not have a narrow window of advertisement activity. Regrettably, circumstances prevented a follow-up visit the next season, so I do not know if that population of *H. cinerea* continued active for another year or what the present situation may be.

Without far more information and controlled data, one hesitates to attempt explanations for such natural phenomena. Nonetheless, it is tempting to speculate, and two options that occur to me are: (1) either the Martinsville frogs migrated into an area not previously occupied, and later moved out, or (2) the population is perennially resident but active only on a cyclic basis, a sort of "Periodical Cicada Effect", one not influenced by climatic conditions. The long period of inactivity adds a coincidental parallel to that of the insect mentioned.

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Some Noteworthy Lizard Observations from Virginia and Nearby Areas

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Incidental to my field work in Virginia and neighboring states during the past half century, I have encountered numerous lizards. The sightings listed below are among those that I consider to be the most noteworthy, previously unpublished records because they were made either outside of or near the periphery of the recorded range of a species, or were from a relatively high elevation for a particular species. I include unvouchered sightings in hopes that someone might be inspired to go to these sites in an attempt to further document the occurrence of these animals.

Eumeces laticeps (Broad-headed Skink)

VA: Fauquier Co., Bull Run Mountain, 2 mi (3.2 km) N of Thoroughfare Gap, 38.8513 N, 77.7156 W. Elevation 1250 ft (381 m). 29 May 1968. W. H. Martin. Photographed.

VA: Loudoun Co.-WV: Jefferson Co., state border along crest of Blue Ridge Mountains just off Appalachian Trail, 1.4 mi (2.2 km) NNE of Wilson Gap. 39.1897 N, 77.7998 W. Elevation 1680 ft (512 m). 25 May 1999. W. H. Martin and Elliott H. Black. Photographed. This skink (13-15 cm SVL, 20-23 cm total length) was observed in a horizontal fissure in a quartzite ledge.

VA: Madison Co., Shenandoah National Park, Old Rag Mountain, 38.5515 N, 78.3065 W. Elevation 2800 ft (853 m). 30 July 1985. W. H. Martin. Photographed. This is my personal elevational record for *E. laticeps*, and exceeds a report of 2400 ft (732 m) from the Blue Ridge Parkway in Bedford County that was mentioned by Tobey (1985).

MD: Frederick Co., Sugarloaf Mountain. 39.2826 N, 77.3996 W. Elevation 700 ft (213 m). 28 May 1967. W. H. Martin. Photographed.

WV: Morgan Co., Devils Nose. 39.6090 N, 78.1134 W. Elevation 900 ft (274 m). 25 July 2006. W. H. Martin. Photographed.

Tobey (1985) and Mitchell (1994) plotted unvouchered records for *E. laticeps* in extreme northern Virginia from the vicinity of "Ashburg" (=Ashburn) on the opposite (east) end of Loudoun County from my sighting location along the

Virginia-West Virginia state line and from near Waterlick in Warren County. Neither of these authors had records for Fauquier or Madison counties, and there are no mapped records from these two counties or Loudoun County in Mitchell and Reay (1999). Green and Pauley (1987) recorded *E. laticeps* from Jefferson, but not Morgan, County in West Virginia, and Harris (1975) plotted two specimen records for this species in Frederick County, Maryland.

***Eumeces fasciatus* (Five-lined Skink)**

WV: Pendleton Co., North Fork Mountain. 38.5421 N, 79.5011 W. Elevation 3850 ft (1173 m). 3 September 1998. W. H. Martin. Sight record. This is my personal elevational record for *E. fasciatus*.

***Eumeces anthracinus* (Coal Skink)**

VA: Page Co., Shenandoah National Park. Timber Hollow. 38.5707 N, 78.3915 W. Elevation 2700 ft (823 m). 9 May 2006. W. H. Martin, Rich Legere, and Jim McGibney. Sight record.

Despite numerous recent reports of *E. anthracinus* (e.g., Roble et al., 1998; Donahue 2005, 2006; Croy, 2006) in Virginia since the comprehensive summaries by Mitchell (1994) and Mitchell and Reay (1999), there are no previous records for Page County. The Timber Hollow site supplants the Hone Quarry Picnic Area in Rockingham County (Donahue, 2005) as the northernmost known locality for this species in Virginia.

***Sceloporus undulatus* (Fence Lizard)**

WV: Pendleton Co., Allegheny Front. 38.9059 N, 79.3803 W. 3650 ft (1113 m). 16 September 1987. W. H. Martin. Sight record. This is my personal elevational record for *S. undulatus*.

***Aspidoscelis sexlineata* (= *Cnemidophorus sexlineatus*) (Six-lined Racerunner)**

VA: Amherst Co., Round Mountain, above Becks Creek. 37.4583 N, 79.0191 W. 700 ft (213 m). 15 June 1980. W. H. Martin. Sight record.

MD: Allegany Co., Outdoor Club Shale Barrens above Potomac River. 39.5927 N, 78.4530 W. Elevation 900 ft (274 m). 26 May 1991. W. H. Martin, Rich Legere and Dan Dellatorre. Sight record.

There are no previous reports of racerunners from Amherst County, but this species has been recorded at several localities just south of the James River in

LIZARD DISTRIBUTION RECORDS

neighboring counties (Mitchell, 1994; Mitchell and Reay, 1999). Harris (1975) plotted an earlier record from the Potomac River in Allegany County, Maryland.

Scincella lateralis (Ground Skink)

VA: Culpeper Co., base of Buzzard Mountain. 38.3393 N, 78.0300 W. Elevation 350 ft (107 m). 13 August 1961. W. H. Martin. Sight record.

Tobey (1985) and Mitchell (1994) plotted another unvouchered record of *S. lateralis* from this county at a site "between Mitchell and Rapidan." This record is not shown in Mitchell and Reay (1999). Both records are disjunct from the nearest documented Piedmont localities.

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**Discovery of a Population of Scarlet Kingsnakes
(*Lampropeltis triangulum elapsoides*)
in the Virginia Piedmont**

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The Scarlet Kingsnake, *Lampropeltis triangulum elapsoides* (Holbrook), has long been of interest to herpetologists because its brightly colored and strongly patterned appearance closely resembles, and apparently mimics (Pfennig et al., 2007), the venomous Harlequin (Eastern) Coralsnake (*Micrurus fulvius*). The Coralsnake has a black snout/forehead and broad, alternating black and red bands (= rings) separated by thinner yellow bands (hence, red and yellow bands touch), whereas the Scarlet Kingsnake has a red snout/forehead and broad red bands separated by three narrower bands (black, white/yellow, and black again; hence, red and yellow bands do not touch)(Conant and Collins, 1998). The colored bands of Scarlet Kingsnakes usually completely encircle the body, or at least partially cross the belly, whereas another similar, sympatric species, the Scarlet Snake (*Cemophora coccinea*), has a plain, whitish belly and pointed snout (Conant and Collins, 1998; Gibbons and Dorcas, 2005).

Holbrook (1838) originally described the Scarlet Kingsnake as a distinct species (*Coluber elapsoides*), and it was generally regarded as such for the next century. Blanchard (1920) described the subspecies *Lampropeltis elapsoides virginiana* based on specimens from North Carolina and Virginia, but Conant (1943) synonymized this taxon with the Coastal Plain Milksnake, *L. triangulum temporalis*, which has a purported range that extends from southern New Jersey to eastern Virginia (there are no milksnake records for the two Eastern Shore counties despite nearby records in eastern Maryland; Mitchell, 1994; Grogan and Forester, 1998) and extreme northeastern North Carolina (Wright and Wright, 1957; Conant, 1958). Williams (1978, 1988) subsequently concluded that *L. t. temporalis* did not merit recognition either, because he considered it to be the same taxon as the Eastern Milksnake (*L. t. triangulum*). For a more detailed summary of the *L. t. temporalis* situation, see Grogan and Forester

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(1998), who have suggested that this subspecies should be recognized again. Conant (1943) was the first to present evidence suggesting that the Scarlet Kingsnake is a subspecies of the Eastern Milksnake. The situation became confused when some herpetologists applied the name *Lampropeltis dolia* (Linnaeus, 1766) to some or all North American milksnakes (e.g., Wright and Wright, 1957; Conant, 1958); this name actually referred to the Scarlet Snake, and its further usage was formally suppressed by a 1967 ruling of the International Commission of Zoological Nomenclature (Mitchell, 1994). Virtually all recent workers have followed Conant (1943) in using the name *Lampropeltis triangulum elapsoides* for the Scarlet Kingsnake (e.g., Williams 1978, 1988; Tobey, 1985; Mitchell, 1994; Palmer and Braswell, 1995; Conant and Collins, 1998; Gibbons and Dorcas, 2005).

Among several characters that distinguish *L. t. elapsoides* and *L. t. triangulum* are the presence of complete (or nearly so) bands (typically 14-20 red bands) encircling the body in the former and differences in the number of midbody scale rows (17-19 [usually 19] in *elapsoides* vs. 21-23 in *triangulum*) and ventral scale rows (fewer in *elapsoides*; 158-196 vs. 189-210) (Williams, 1978, 1988). Eastern Milksnakes typically possess a grayish brown snout, a Y or V shaped mark on the head, dorsal reddish blotches interspersed with smaller lateral blotches, and a checkerboard belly pattern (Conant and Collins, 1998).

The status of the Scarlet Kingsnake in Virginia has been debated for many years. Generalized range maps indicate this snake occurs in southeastern Virginia and also barely enters the southern Piedmont region of the state (Wright and Wright, 1957; Conant, 1958; Conant and Collins, 1998; Dorcas and Gibbons, 2005). The range map in Linzey and Clifford (1981/1995) suggests that Scarlet Kingsnakes are known from four Piedmont counties and six counties/cities in the Coastal Plain, and that intergrades with Eastern Milksnakes occur in 19 jurisdictions in the eastern and northern portions of the state. Tobey (1985) provided a separate map and account for the Scarlet Kingsnake, attributing all 14 locality records in the eastern Piedmont and Coastal Plain, south and east of a line from Mecklenburg to Lancaster County (after Williams, 1978) to this taxon, but noted that apparent intergrades exist and did not provide a clear delineation of range limits. He mentioned a juvenile photographed in the Great Dismal Swamp that closely resembled the Scarlet Kingsnake in pattern. In his detailed studies of North American milksnakes, Williams (1978, 1988) concluded that *L. t. elapsoides* and intergrades with *L. t. triangulum* are found in southeastern Virginia and northeastern North Carolina. He identified specimens from Mecklenburg County, Lancaster County, and the City of Virginia Beach as Scarlet Kingsnakes, but Mitchell (1994) considered these specimens as intergrades based on scale counts and pattern and concluded that *L. t. elapsoides* "should not be included in the Virginia checklist."

Mitchell (1994) stated that "*Lampropeltis triangulum* exhibits the most extreme geographic variation in body size, pattern, and color of any Virginia snake" and concluded that *L. t. triangulum* and intergrade populations with *L. t. elapsoides* were the only taxa of this complex present in the state. In the most recent Virginia herpetological atlas, Mitchell and Reay (1999) reiterated this conclusion. Mitchell (1994) further stated that "Snakes in the Coastal Plain and southeastern Piedmont more closely resemble the form [*elapsoides*] with encircling body bands" and his book also presented a photograph (Plate 45) of a completely ringed "intergrade" specimen from Southampton County. Martof et al. (1981) noted that these taxa were considered separate species for many years, but apparent intergrade zones existed in some areas of the Carolinas and Virginia. However, these authors also noted that both forms occur sympatrically in southwestern North Carolina without evidence of interbreeding. Palmer and Braswell (1995) determined that true *elapsoides* did not occur north of Pamlico Sound in North Carolina, and considered all specimens north and northeast of this estuary as intergrades with *L. t. triangulum*. In contrast, Armstrong et al. (2001) reported no interbreeding between populations of *L. t. elapsoides* and the Red Milksnake, *Lampropeltis t. sypila*, in western Kentucky and adjacent Tennessee. These authors noted that the aforementioned photograph, count data (scales and body rings), and statements in Mitchell (1994) led them to believe that the situation in Virginia might be similar to that in Kentucky (i.e., little or no interbreeding between purported subspecies of the same species). Armstrong et al. (2001) stressed the need to collect more data, especially from the southern Piedmont region of Virginia. More recent studies have revealed that the Scarlet Kingsnake is genetically different from and not especially closely related to the Eastern Milksnake, and merits recognition again as a full species (Harper, 2006; Harper et al., in prep.; G. R. Harper and W. L. Grogan, pers. comm.).

Harper and Pfennig (2006) and Pfennig et al. (2007) recently studied the Coralsnake mimicry complex that includes the Scarlet Kingsnake, and observed that mimic taxa vary in their resemblance to the model (i.e., Coralsnake) in different parts of their geographic range. The nearest populations of Coralsnakes to Virginia are in southeastern North Carolina (Palmer and Braswell, 1995); thus any Scarlet Kingsnake populations that occur in Virginia would be allopatric from and under less selective pressure than more southern (sympatric) populations to closely resemble the model. This might partially explain the presence of incompletely ringed specimens in Virginia.

The range map in Harper and Pfennig (2006) shows that Scarlet Kingsnakes extend farther north into the Piedmont of Virginia than had been previously illustrated, and also suggests that this taxon is absent from southeastern Virginia (but see footnote on page 92). Their northern range limit in Virginia is based on a population that two of us (GNW and MDK) discovered on 18 September 2003

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while road cruising along County Route 608 (Tolers Ferry Road), a rural, lightly traveled road, in extreme southern Bedford County, east of Smith Mountain Lake and south of Huddleston. During the following three spring and early summer seasons (2004-2006), nine more Scarlet Kingsnakes were found crossing Route 608 in this area. All 10 snakes were found at night, typically between 2100 and 2300 h. Another specimen was found on this same road in June 2007 by Paul Sattler. Scarlet Kingsnakes are secretive and prefer pine forests (Martof et al., 1981) or mixed pine-hardwood habitats. They often hide beneath the loose bark of dead pine trees, especially during spring and fall (Gibbons and Dorcas, 2005). A diurnal search by Greg Woodie, Jason Gibson, and Paul Sattler during the summer of 2004 of one area of forest bordering County Route 608 failed to yield any additional Scarlet Kingsnakes.

Tissue samples from snake #6 below, as well as shed skins from several of the others currently in captivity were analyzed in the recent genetic study, and their identity as Scarlet Kingsnakes was confirmed (Harper, 2006; Harper et al., in prep.; G. R. Harper and W. L. Grogan, pers. comm.). This is a new county record and the first unequivocal report of Scarlet Kingsnakes from Virginia (Mitchell and Reay, 1999). Cumulatively, these records suggest that a thriving population inhabits southern Bedford County, and moreover, provide credence that earlier specimens from at least three other Piedmont counties (Albemarle, Appomattox, and Mecklenburg; Blanchard, 1920, 1921; Williams, 1978, 1988) were correctly assigned to this form (W. L. Grogan, pers. comm.).

The following is a chronological, annotated list of the Scarlet Kingsnakes that were found (all by Greg Woodie and Mike Kinsler, except #11) along a meandering, 6.0 mile (9.6 km) section of Route 608 in southern Bedford County (Fig. 1). None of the cross streets listed below is numbered on U.S. Geological Survey topographic maps or the DeLorme atlas map of Virginia. Elevations of the collection sites range from 750-1000 ft (229-305 m). The approximate center point of all sites (linear distance between the most northern and southern collections is ca. 4.2 mi [6.8 km]) is 37° 02' 44" N, 79° 29' 46" W.

1. Collected on 18 September 2003 near Teakwood Drive, about 1.3 km north of Toler's Bridge (Route 608 crossing of Leesville Lake [Roanoke River] at Bedford-Pittsylvania county line); 22 (total) white bands, slight break at midline of neck band; 15th band incomplete, being entirely absent on right side of body; 21 (total) red bands (Figs. 2B, 3H, 3J).
2. This snake was collected on 9 May 2004 near Moss Meadows Drive, about 3.3 km north of Toler's Bridge. It was hit by a truck after it was spotted on the road but before it could be retrieved, and died 2 days later. The specimen is deposited in the Liberty University Natural History Museum (#582). Mid-body

scale rows are 19, with 170 ventrals and 40 subcaudals. The belly is mostly white in the anterior portion and predominantly black posteriorly, with no complete ventral bands. All dorsal bands are complete, with the white ones (20 total) flared ventrolaterally; 20 red bands (Figs. 3B, 3K).

3. Collected on 13 May 2004 near Marcus Keller Lane, about 4 km north of Toler's Bridge; 22 white bands including a broad neck band, the 6th band is incomplete, being confined to the left side of the body; 21 red bands (Figs. 2D, 3A, 3G). Mid-body scale rows are 19, with 167 ventrals and 39 subcaudals; 160 mm total length (October 2005).

4. This snake was collected on 16 May 2004 near Timberland Trail, about 1.6 km southeast of the junction of County Routes 608 and 872.

5. Found on 5 June 2004 just north of the previous site; 24 white bands and 23 red bands, all sharply defined and complete dorsally (Fig. 2A; frontispiece, page 62).

6. This snake, which was collected on 23 June 2004 near Moss Meadows Drive, died in captivity and was frozen for use in the recent genetic study (Harper, 2006; Harper et al., in prep.). It is currently in the possession of Dr. George R. Harper, Hendrix College, Conway, Arkansas, who plans to donate it to the Virginia Museum of Natural History (G. R. Harper, pers. comm.).

7. Collected on 8 June 2005 north of Marcus Keller Lane; 23 white bands, including a partial neck band (right side only); 23 red bands (Fig. 3E). Mid-body scale rows are 19, with 169 ventrals and 38 subcaudals; 168 mm total length.

8. Collected on 12 June 2005, between 3.2 and 4.0 km north of Toler's Bridge.

9. This possible 2004 hatchling (95 mm total length) was captured on 21 June 2005 near Bettys Hill (Alta Lane), about 1.4 km southeast of the junction of County Routes 608 and 872; 24 white bands, neck band incomplete; 23 red bands; black bands are nearly complete on the venter (Figs. 3C, 3D, 3F, 3I).

10. Collected in April or May 2006 on Route 608 north of Toler's Bridge (exact date and location not recorded).

11. Paul Sattler collected this snake on 3 June 2007 "east of Smith Mountain Lake." It died in captivity and was deposited in the Liberty University Natural History Museum (#681). Midline scale count is 18; 23 white bands, all of which are quite wide; the 17th band is incomplete, being confined to the left side of the body; 22 red bands (Fig. 2C).

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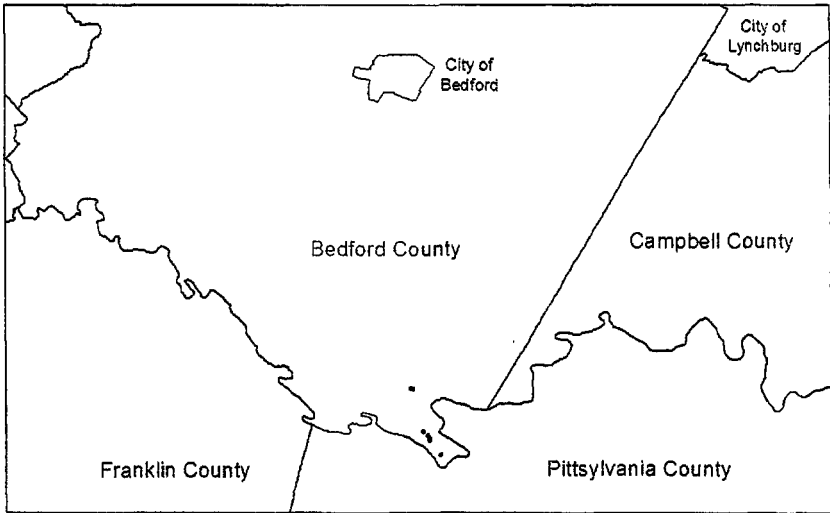


Fig. 1. Map showing approximate capture locations of Scarlet Kingsnakes in southern Bedford County, Virginia.

Fourteen other snake species were found by Greg Woodie and Mike Kinsler during road cruising along County Route 608 in Bedford County, including Wormsnake (*Carphophis amoenus*), Black Racer (*Coluber constrictor*), Ring-necked Snake (*Diadophis punctatus*), Eastern Ratsnake (*Elaphe alleghaniensis*), Cornsnake (*Elaphe guttata*), Northern Watersnake (*Nerodia sipedon*), Rough Greensnake (*Ophedryx aestivus*), Northern Brownsnake (*Storeria dekayi*), Northern Red-bellied Snake (*Storeria occipitomaculata*), Southeastern Crowned Snake (*Tantilla coronata*; $n = 2$), Eastern Gartersnake (*Thamnophis sirtalis*), Smooth Earthsnake (*Virginia valeriae*), Northern Copperhead (*Agkistrodon contortrix mokasen*), and Timber Rattlesnake (*Crotalus horridus*). Three of these species (both *Storeria* and *T. coronata*) have been reported previously from very near to but not within Bedford County (Linzey and Clifford, 1981/1995; Tobey, 1985; Mitchell, 1994; Mitchell and Reay, 1999); of these authors, only Linzey and Clifford reported *V. valeriae* from this county. No Eastern Milksnakes or Eastern Kingsnakes (*Lampropeltis g. getula*) have been observed along Route 608, but one possible Mole Kingsnake (*Lampropeltis calligaster rhombomaculata*) was noted.

The forests (mostly pine) bordering Route 608 in southern Bedford County are being increasingly threatened by residential development and logging. If the decision to upgrade the status of Scarlet Kingsnakes to full species is accepted by professional herpetological organizations such as the Society for the Study of Amphibians and Reptiles, then more attention should be paid to the conservation

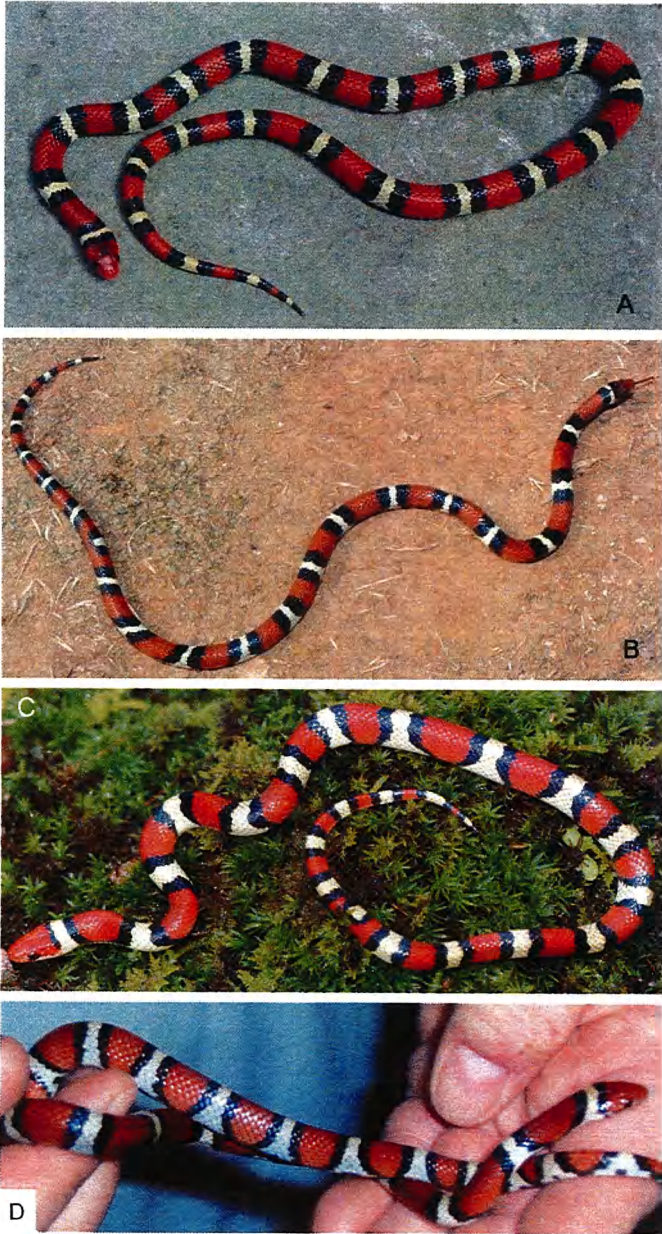


Fig. 2. Scarlet Kingsnakes from Bedford County, Virginia: #1-B; #3-D; #5-A; #11-C. Photos by John White (A, B), Paul Sattler (C), and Greg Woodie/Mike Kinsler (D).

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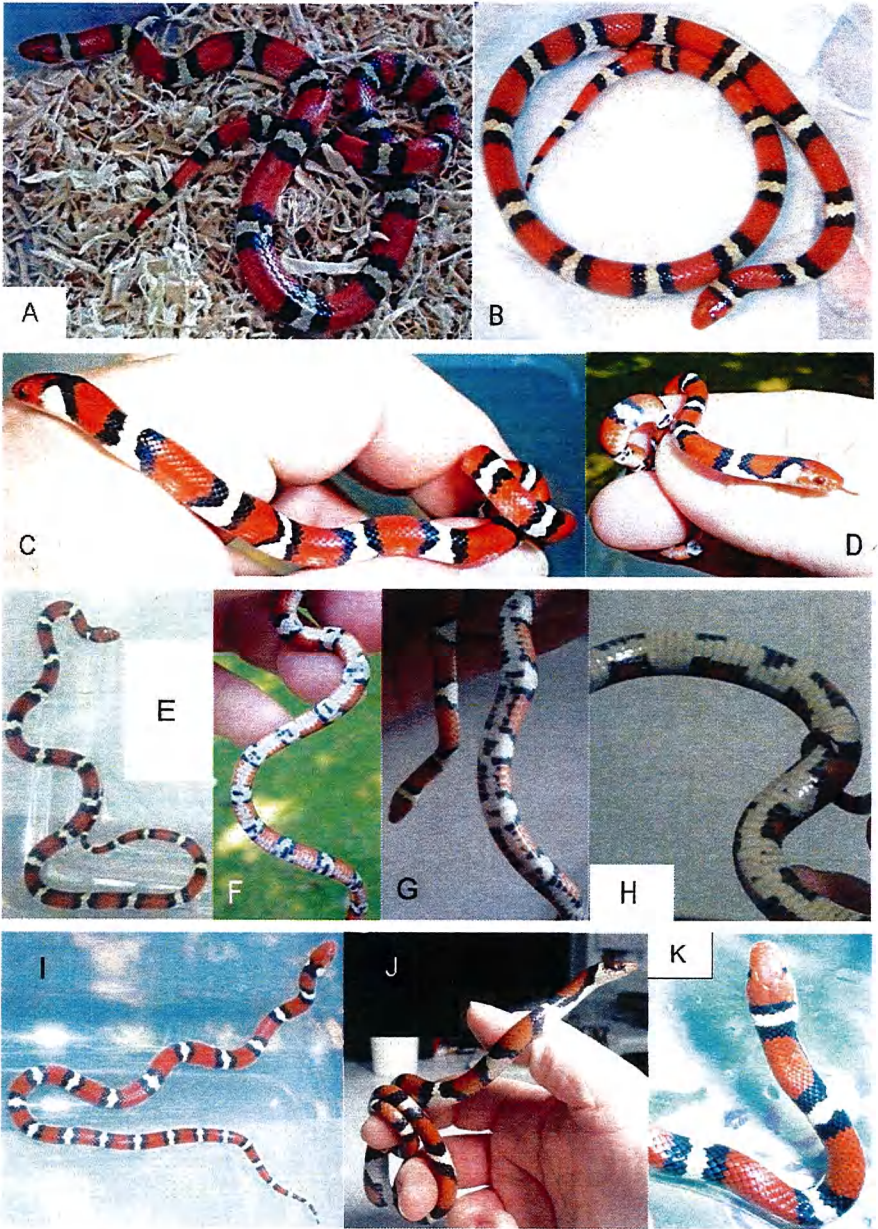


Fig. 3. Scarlet Kingsnakes from Bedford County, Virginia: #1-H, J; #2-B, K; #3-A, G; #7-E; #9-C, D, F, I. Photos by Greg Woodie and Mike Kinsler.

of this snake in Virginia. In one of the earliest attempts to identify the rare vertebrate fauna of Virginia, Russ (1973) suggested that the Scarlet Kingsnake was endangered in the state, but Tobey (1979) did not mention this snake in his review of endangered and threatened amphibians and reptiles of Virginia. However, in their review of the conservation status of Virginia's reptiles, Mitchell and Pague (1987) placed the Scarlet Kingsnake in the category "status undetermined" and noted that, due to secretive habits, it was likely more common in the state than the number of available specimen records ($n = 7$ at that time) indicated. This snake was not discussed in Mitchell's (1991) subsequent review of the rare (including status undetermined species) herpetofauna of Virginia. Currently, the Scarlet Kingsnake is not included on the list of "Species of Greatest Conservation Need" recently developed by the Virginia Department of Game and Inland Fisheries (<http://www.bewildvirginia.org/species/reptiles.pdf>). Mitchell (1994) remarked that the "intergrade" milksnake population in southeastern Virginia¹ was threatened with local extirpation due to urbanization and deforestation, and recommended the identification and protection of occupied habitats. This comment holds true for populations of Scarlet Kingsnakes in the Piedmont as well. All *Lampropeltis* specimens from southeastern and central Virginia that were previously regarded as intergrades should be re-examined in light of the results of the recent genetic study, and new material should be obtained for future genetic and morphological analyses to more accurately determine the distribution and status of Scarlet Kingsnakes (and Coastal Plain Milksnakes if this taxon is resurrected) in Virginia.

Acknowledgements

We thank Paul Sattler for providing information on and access to specimens in the Liberty University collection. John White and Paul Sattler graciously allowed us to include several of their photographs in this paper. George Harper and William Grogan shared the results of their recent, currently unpublished genetic analysis. William Grogan, George Harper, Richard Hoffman, and Joseph Mitchell reviewed a draft of the manuscript and provided helpful comments, as well as copies of or access to relevant literature.

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¹Several *Lampropeltis* specimens that were collected during 2006-2007 in the City of Chesapeake are putative Scarlet Kingsnakes based on morphological characters (W. L. Grogan, pers. comm.).

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FIELD NOTES

Bufo quercicus (Oak Toad). VA: Isle of Wight Co., Rattlesnake Trail (36° 56' 13" N, 76° 49' 40" W). 26 June 2007. Robert B. Clontz.

The Oak Toad reaches the northernmost limit of its range in southeastern Virginia and is classified as a Species of Special Concern by the Virginia Department of Game and Inland Fisheries (Mitchell and Reay. 1999. Atlas of Amphibians and Reptiles in Virginia. Special Publication No. 1, Virginia Department of Game and Inland Fisheries, Richmond, VA. 122 pp.). At 0800 h on 26 June 2007, an Oak Toad was observed crossing a dirt road (Rattlesnake Trail) in Isle of Wight County. The habitat on both sides of the road is a 20-year old loblolly pine (*Pinus taeda*) plantation with an understory of horse sugar (*Symplocos tinctoria*) on one side of the road and canebrake (*Arundinaria gigantea*) on the other. This observation is a new county record for Isle of Wight and fills a hiatus in the distribution of this species in Virginia (Mitchell and Reay, op. cit.; Roble et al. 2005. Opportunistic surveys for the Oak Toad [*Bufo quercicus*] in southeastern Virginia: On the trail of Leslie Burger. *Catesbeiana* 25: 3-25). A digital image has been deposited in the VHS archives (digital voucher #108).

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Hyla chrysoscelis (Cope's Gray Treefrog). VA: Montgomery Co., 1707 Ginger Lane, Blacksburg (37° 14' 25" N, 80° 27' 00" W). 2 June 2007 to 10 July 2007. Alan Raflo and Don Mackler.

One individual of this species was heard calling on the evenings of 2, 4, and 12 June and 4, 5, and 10 July 2007 from a small, plastic-lined, constructed pond at a residence in Blacksburg, Virginia. Elevation of the pond is 2030 feet (619 meters). Calls of *Hyla versicolor* (Gray Treefrog) were also heard at this location on the dates noted above. Verification of the species was made by tape recordings obtained on 2 and 4 June 2007. The recordings were converted to an electronic file (MP3) and verified by Drs. Steve Roble and Joseph Mitchell. The recording was submitted to the Virginia Herpetological Society and assigned Digital Archive #107.

This record establishes a new county record for this species (Mitchell and Reay. 1999. Atlas of Amphibians and Reptiles in Virginia. Special Publication Number 1, Virginia Department of Game and Inland Fisheries, Richmond, VA. 122 pp.;

Virginia Dept. Game and Inland Fisheries, 2004. County occurrence maps chapter for Treefrog, Cope's Gray. <http://www.dgif.state.va.us/wildlife/species/maps/020006-map.jpg>, accessed 5 July 2007). The species has been previously reported from Floyd County (Hoffman. 1996. *Hyla chrysoscelis* crosses the Blue Ridge: *Sic Juvat Transcendere Montes*. Catesbeiana 16: 3-8), which borders Montgomery County on the south, but in no other counties adjacent to Montgomery (VDGIF, op. cit.).

Acknowledgements - We thank Carola Haas, Joseph Mitchell, Paul Sattler, Steve Roble, and the Virginia Tech New Media Center for their assistance; and the property owners for access to their constructed pond.

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Hyla chrysoscelis (Cope's Gray Treefrog). VA: City of Richmond, State Capitol grounds (37° 32' 19" N, 77° 25' 58" W). 14 June and 27 June 2006. Steven M. Roble.

Tropical Storm Alberto brought heavy rains to the Richmond area on 14 June 2006. At 2200 h, I heard 3-4 *Hyla chrysoscelis* males calling vigorously on the State Capitol grounds near the Governor's Mansion. Two weeks later, several heavy downpours occurred on the afternoon of 27 June, and a total of 5.6 cm of precipitation was recorded in Richmond. Shortly after 2100 h that evening, I heard a male *H. chrysoscelis* calling from behind an office building directly across the street from the Governor's Mansion, in an area devoid of vegetation. The State Capitol is located in an urban setting, 0.5 km uphill from a stretch of the James River that essentially lacks forested floodplain habitat. The Capitol grounds consist primarily of manicured lawns, with some scattered large trees and shrubs, and two concrete water fountains (8-10 m diameter). A review of aerial photos indicates that natural, forested potential breeding habitat for *H. chrysoscelis* is at least 1.8 km away, on Belle Island in the middle of the James River. Although this species may have been present on the Capitol grounds in past years, I have no distinct recollections or notes to confirm that I have heard it there during the past decade. This scenario may be analogous to Richard Hoffman's report in this issue (see pages 78-80), with the same basic questions "Where had these frogs come from, and from what distance?" I have found an egg clutch of *H. chrysoscelis* in a small, water-filled flower pot beside my suburban Chesterfield County residence, more than 50 m from the nearest potential natural breeding site, so perhaps this species can breed in the concrete

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fountains on the State Capitol grounds. There are numerous records of *H. chrysoscelis* in adjacent Chesterfield and Henrico counties, but no City of Richmond records are mapped in Mitchell and Reay (1999. Atlas of Amphibians and Reptiles in Virginia. Special Publication Number 1, Virginia Department of Game and Inland Fisheries, Richmond, VA. 122 pp.). This is clearly an artifact of sampling and reporting because this species is commonly heard, and occasionally seen, in city parks such as James River Park along the river's shoreline.

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Hyla cinerea (Green Treefrog). VA: City of Richmond, James River Park, The Wetlands (37° 32' 45" N, 77° 30' 37" W). 10 May 2007. S. M. Roble and P. Bedell; 30 May 2007. S. M. Roble and R. Groover; 31 May 2007. S. M. Roble, A. Bryan, and D. Bryan; 7 June 2007. S. M. Roble and P. Bedell.

Mitchell (2005. Field Notes: *Hyla cinerea*. *Catesbeiana* 25: 77-78) reported Green Treefrogs from three sites in Henrico County and noted that this species has possibly expanded its range inland in recent years. He recommended the reporting of additional records of this and other primarily Coastal Plain anurans from the Fall Line and points westward. I take this opportunity to briefly note my observations of a population of *H. cinerea* from "The Wetlands" section of James River Park in the City of Richmond, apparently the first report for the City (Mitchell and Reay. 1999. Atlas of Amphibians and Reptiles in Virginia. Special Publication Number 1, Virginia Department of Game and Inland Fisheries, Richmond, VA. 122 pp.). The species occurs in the vicinity of a relatively young (<40 years old), man-made pond (<0.2 ha) about 120 meters south of the James River. It is bordered by an open, grassy field on one side and deciduous and mixed forests on the others. Several juveniles and subadults were found in the grassy field during a diurnal survey on 10 May 2007. Chorusing males were heard at the pond at dusk on the other dates. This is apparently a thriving population of *H. cinerea* near the western limits of the species' range in Virginia.

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Hyla gratiosa (Barking Treefrog). VA: Nottoway Co., Virginia Tech Southern Piedmont Agricultural Research and Extension Center. 37° 05' 16.17" N, 77° 57' 23.35" W. 26 August 2007; 37° 04' 36.33" N, 77° 57' 54.39" W (both NAD 83). 11 September 2007. Robert B. Semtner and Paul J. Semtner.

The Barking Treefrog occurs primarily in the Coastal Plain region of the southeastern United States. This species breeds in a variety of aquatic habitats including ephemeral pools, semi-permanent and permanent ponds, swamps, and Carolina Bays. One shared characteristic of all breeding sites is the absence of predatory fish (Lannoo, 2005. *Amphibian Declines: The Conservation Status of United States Species*. University of California Press, Berkeley and Los Angeles, CA. 1094 pp.). Except for two locations in Chesterfield County, all other known locations of this species in Virginia are within the Coastal Plain region (Mitchell and Reay, 1999. *Atlas of Amphibians and Reptiles in Virginia*. Special Publication No. 1, Virginia Department of Game and Inland Fisheries, Richmond, VA. 122 pp.).

On 26 August 2007 at 1522 h, Robert B. Semtner found two adult Barking Treefrogs seeking refuge in an open bucket next to a building at the Virginia Tech Southern Piedmont Agricultural and Extension Center near Blackstone, Virginia. Because the bucket contained rainwater and mosquito larvae, it appears to have been at this location for a period of time. A third specimen was found on 11 September 2007, when Paul J. Semtner, an entomologist at the Center, accidentally captured it while using an insect net (i.e., sweep net) in an open field approximately 1 km west of the first location. This specimen was approximately half the size of the previous two specimens and therefore was assumed to be a recently metamorphosed juvenile. A previous herpetological survey of Fort Pickett, which is adjacent to the Center, did not document Barking Treefrogs (Roble et al. 2003. *Records of amphibians and reptiles from Fort Pickett, Virginia*. *Catesbeiana* 23: 35-60).

These occurrences are most likely the result of an artificial introduction through the importation of plants or soilless media to the Center. Soilless media is primarily composed of peat moss (*Sphagnum* spp.) and is frequently imported from Kinston, North Carolina, which is located in the Coastal Plain region. The Barking Treefrog is considered locally common in North Carolina (Lannoo, op. cit.). The lack of any natural breeding site(s) near the Center further supports the belief that these individuals are the result of an artificial introduction. The aquatic habitats in and around the Center include predator-free artificial ponds, greenhouse troughs, and intermittent streams. The greenhouse troughs may be sufficient in providing surrogate breeding sites. A large number of Southern Leopard Frog (*Rana sphenoccephala*) larvae were found in the troughs. The Southern Leopard Frog and Barking Treefrog are often syntopic (Lannoo, op.

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cit.). Determining if a reproducing population of Barking Treefrogs exists at this site is warranted.

This is the first documented occurrence of this species in Nottoway County and the third occurrence in the Piedmont region of Virginia. Digital photos of the first two specimens were deposited in the VHS archives (vouchers #109 and 109b). No photograph exists of the third specimen, but it was confirmed and released at the point of capture by J.D. Kleopfer.

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Rana sylvatica (Wood Frog). VA: Fairfax Co., Great Falls Park, George Washington Memorial Parkway (38° 59' 15.46" N, 77° 15' 06.27" W). 10 March 2007. Brent W. Steury and Kevin Butler.

On 10 March 2007, two of us (BWS and KB) observed mating behavior and amplexus of several male Wood Frogs (*Rana sylvatica*) with an adult female Spotted Salamander (*Ambystoma maculatum*) in a small pool in a Red Maple (*Acer rubrum*) seepage swamp in Great Falls Park, a section of the George Washington Memorial Parkway, Fairfax County, Virginia. A loud chorus of Wood Frogs emanated from the swamp and at least 12 were observed in the pool along with a single female Spotted Salamander. At least five *R. sylvatica* attempted to mate with the salamander (Fig. 1) and two engaged in amplexus at the exclusion of other interested competitors over the course of 30 min of observation. The salamander appeared helpless to fend off her suitors, and moved less than 0.1 m during the observation. Two other mating groups were evident farther out in the pool; but we could not determine whether a salamander was present in these groups.

Males of species with explosive mating aggregations and scramble competition like *R. sylvatica* apparently have trouble distinguishing gender and species of other individuals visually (Wells. 2007. *The Ecology and Behavior of Amphibians*. University of Chicago Press, Chicago, IL. 1,148 pp.). Male Wood Frogs are well known to amplex with females of other species of frogs and even inanimate objects during the period of heightened hormonal activity during the breeding season, probably because of this visual challenge (Davis and Folkerts. 1986. Life history of the Wood Frog, *Rana sylvatica* LeConte (Amphibia: Ranidae) in Alabama. *Brimleyana* 12: 29-50; JCM, pers. obs., P. deMaynadier,

J. Petranka, and S. Roble, pers. comm.). Amplexus with other species has been reported, for example, in Boreal Toads (*Bufo boreas*) (Marco et al. 1998. Sex recognition and mate choice by male Western Toads, *Bufo boreas*. Animal Behavior 55: 1631-1635) and Cope's Gray Treefrogs (*Hyla chrysoscelis*) (Byrd. 2007. The last kids in the wetland. Tennessee Herpetological Society Newsletter 3: 6-7). Although unusual, amplexus of *R. sylvatica* with *A. maculatum* is yet another outcome of the mating frenzy characteristic of explosive breeding anurans. Although amplexus with Spotted Salamanders has also been observed in Maine (A. Calhoun, pers. comm.) and New York (A. Breisch, pers. comm.), we believe this is the first published observation.

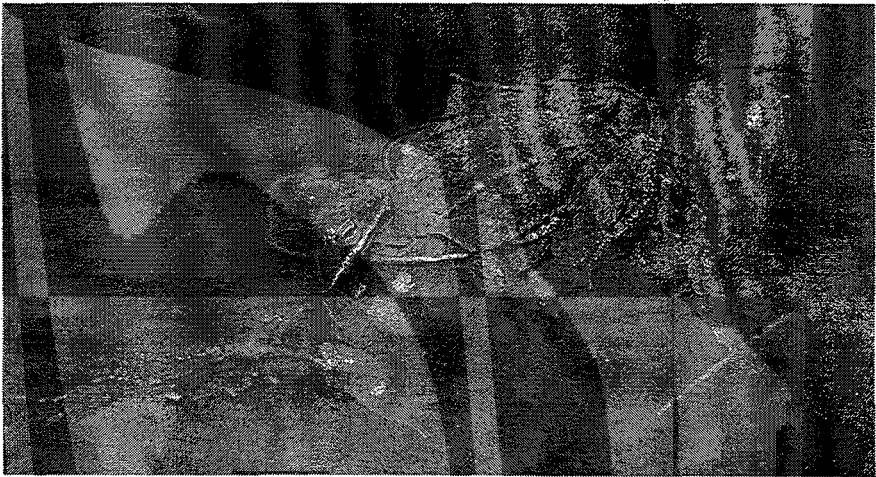


Fig. 1. Several males of *Rana sylvatica* in amplexus with a female *Ambystoma maculatum* in Great Falls Park, Fairfax County, VA.

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FIELD NOTES

Farancia abacura abacura (Eastern Mudsnake). VA: Isle of Wight Co., Junction Co. Rt. 620 (Broadwater Road) and Central Hill Road (36° 55' 34" N; 76° 46' 14" W). 26 May 2007. Robert B. Clontz.

On 26 May 2007 at 2030 h, an Eastern Mudsnake was observed crossing County Route 620 (Broadwater Road) near the intersection with Central Hill Road in Isle of Wight County. It was apparently attempting to cross the road from one drainage ditch to another. Before the observer could stop and safely remove the snake from the road, an oncoming car intentionally swerved and hit the snake. Although it is widely believed that drivers will intentionally run over snakes on the highway, this is a rare eyewitness account. This observation is a new county record for Isle of Wight and fills a hiatus in the distribution of this species in Virginia (Mitchell. 1994. *The Reptiles of Virginia*. Smithsonian Institution Press, Washington, DC. 352 pp.; Mitchell and Reay. 1999. *Atlas of Amphibians and Reptiles in Virginia*. Special Publication No. 1, Virginia Department of Game and Inland Fisheries, Richmond, VA. 122 pp.). A digital image has been deposited in the VHS archives (digital voucher #106).

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Sternotherus odoratus (Common Musk Turtle; Stinkpot). VA: Bath Co., Cowpasture River, 0.5 km upstream of Co. Rt. 629 (5.9 km E Bath Alum). (38° 02' 59" N; 79° 39' 05" W). 8 June 1999. Steven M. Roble.

Sternotherus odoratus occurs throughout Virginia, but records are lacking for many counties (Mitchell. 1994. *The Reptiles of Virginia*. Smithsonian Institution Press, Washington, DC. 352 pp.; Mitchell and Reay. 1999. *Atlas of Amphibians and Reptiles in Virginia*. Department of Game and Inland Fisheries, Special Publication No. 1, Richmond, VA 122 pp.). There are few records for the northwestern counties (Alleghany, Bath, and Highland) that encompass Allegheny Mountain and upper tributaries of the James River (e.g., Bullpasture, Cowpasture, and Jackson rivers). Hoffman (1986. *The herpetofauna of Alleghany County, Virginia*. Part 3, Class Reptilia. *Catesbeiana* 6: 4-9) provided his personal observation records of *S. odoratus* from four localities in northern Alleghany County, the most recent dating to June 1945. Tobey (1985. *Virginia's Amphibians and Reptiles: A Distributional Survey*. Virginia Herpetological Society, Purcellville, VA. 114 pp.) only plotted one of Hoffman's records, whereas Mitchell (op. cit.) plotted all four as unvouchered records. The range

map in Mitchell and Reay (op. cit.) lacks records for this county. None of the above sources nor Young (1993. An annotated checklist of reptiles and amphibians from Highland County, VA. *Catesbeiana* 13: 3-8) indicates the presence of *S. odoratus* in Bath or Highland counties. I take this opportunity to report my discovery of an adult on 8 June 1999 in the Cowpasture River above Co. Rt. 629 in Bath County while engaged in a survey of riverine dragonflies. The specimen was captured by hand in shallow water near the river's edge and released shortly thereafter. At this site, the river is shallow (<1 m deep) and 15-20 m wide, bordered on the west by agricultural fields and on the east by a large, rather steep shale barren that lies within the George Washington National Forest.

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Trachemys scripta scripta (Yellow-bellied Slider). VA: Henrico Co., 3.93 km SSW Glendale, Richmond National Battlefield Park (37° 24' 45.1" N, 77° 15' 0.7" W, NAD 83). 26 May 2003. Joseph C. Mitchell.

Yellow-bellied Sliders (*Trachemys s. scripta*) reach their northernmost range limits in the Virginia Coastal Plain (Ernst et al. 1994. *Turtles of the United States and Canada*, Smithsonian Institution Press, Washington, DC. 578 pp.). Several additional localities north of the James River have come to light in recent years following publication of distribution maps in Mitchell (1994. *The Reptiles of Virginia*. Smithsonian Institution Press, Washington, DC. 352 pp.) and Mitchell and Reay (1999. *Atlas of Amphibians and Reptiles in Virginia*. Special Publication No. 1, Virginia Department of Game and Inland Fisheries, Richmond, VA. 122 pp.). These include Gloucester County (Mitchell and Musick. 1997. Geographic distribution: *Trachemys scripta scripta*. *Herpetological Review* 28: 49) and New Kent County (Kleopfer. 2006. Field notes: *Trachemys scripta scripta* (Yellow-bellied Slider). *Catesbeiana* 26: 74). I report another county record for the slider that extends the range of *T. s. scripta* farther westward than heretofore known.

On 26 May 2003, my field assistants and I trapped an adult female *T. s. scripta* (257 mm carapace length, 233 plastron length, 2425 g body mass) in a sardine-baited hoop trap set in a beaver-impounded stream on the Malvern Hill unit of the Richmond National Battlefield Park (National Park Service) in eastern Henrico County. This site is 18.8 km WSW of the most recently reported site for

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this subspecies in New Kent County at Providence Forge (Kleopfer, op. cit.). This turtle had the diagnostic vertical, yellow bar on each side of the head behind the eye, the paired black spots on the gular scutes on the plastron, and the striped black and yellow pattern on the thighs. Also captured in the beaver pond were one *Chelydra serpentina serpentina* (Snapping Turtle), five *Chrysemys picta picta* (Eastern Painted Turtle), and one *Sternotherus odoratus* (Common Musk Turtle, Stinkpot). All turtles were marked and released at their capture locations.

This observation represents a westward extension of the known range of the Yellow-bellied Slider in the Virginia Coastal Plain. It would be instructive to know where the true limits of the range of this subspecies lie in relation to populations of the introduced Red-eared Slider (*Trachemys scripta elegans*). This introduced subspecies is known to occur in the Newport News Reservoir and Lee Hall (Mitchell, op. cit.), two lakes on Fort Eustis (Dolan and Christensen. 2007. Turtle diversity of U.S. Army Installation, Fort Eustis, Virginia. *Catesbeiana* 27: 72-77) and in Lake Murray, City of Newport News (B. Savitzky, pers. comm.), all on the north side of the James River. Elucidation of the distributional relationships of these two sliders in Virginia would provide a better understanding of the potential impact of the introduced *T. s. elegans* on the native *T. s. scripta*.

Acknowledgements - I thank Elvira Lanham and Todd Georgel for their assistance in the field, the National Park Service for support of field inventories on Richmond National Battlefield Park, and Kristin Allen, Resource Manager, for her help with logistics.

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President's Corner

Allow me to introduce myself for my first President's Corner. I am Susan Watson, a research specialist with the Virginia Department of Game & Inland Fisheries (Wildlife Diversity Division, Fish & Wildlife Information Services Section) in Richmond. My duties vary from answering calls from the general public about wildlife (especially snakes and other herpetofauna); to maintaining data on all types of wildlife species in Virginia; to responding to consultants, government agencies, and other entities with information on initial environmental review of proposed construction, restoration, or other land use projects. My interest in wildlife, and animals in general, has always been one of my great passions in life, since I can remember. I grew up on a farm in rural Prince George County (still live in PG, just on the other side of it, now), and I always had a special affinity for the animals that many people disliked or feared. Although most of the women in my family were afraid of snakes to some degree, most of the men in my family taught me that, at least some, snakes were good. (Of course, now I know they're ALL good.) One of my other passions has always been art, which usually means drawing or painting wildlife subjects, though I don't get around to this one very often these days. The first passion led me to pursue a degree in Wildlife Science at Virginia Tech. After school, my first jobs were at local nature centers, and these opportunities provided much of my knowledge and appreciation of herpetology, making herpetology my biggest interest. I enjoyed my work at nature centers, where I realized the joy of helping people understand these animals, and thus helping people to appreciate herpetofauna, their habitats, and their role in our ecosystems. When I had to move on from the nature centers, I first accepted a position with the Virginia Coastal Program at the Department of Environmental Quality. I was able to work with a broad array of environmental topics affecting Virginia's Coastal Zone. Later, I accepted my current job at Game and Inland Fisheries, since it was a better fit for me, in dealing mainly with the issues concerning Virginia's wildlife.

I would like to take this opportunity to thank Jason Gibson for his excellent service to VHS as President for not just the past two years, but also for a prior two-year reign as President in 2001-2003. Obviously, he was so good the first time, he was nominated to return as President for a second time! In the past two years, Jason has greatly improved the society's activity. He expanded our participation to three surveys per year. There were actually four surveys last year, in which we were at least participating, if not running. Jason's most prized conception was the Annual HerpBlitz, which is a slightly smaller scale than the main Annual Survey, and which has been highly successful both years. Also, during Jason's recent term, the society's Annual Fall Meeting has become the Annual Fall Symposium, and both of the past two Symposiums have been very successful, with authors Dr. Mike Dorcas and Dr. Whit Gibbons providing wonderful presentations, opportunities to meet with them and discuss topics of interest with them, and a chance to have them sign their books. It's also been

PRESIDENT'S CORNER

tremendously inspiring to see and hear so many students at the Symposiums presenting their papers and posters.

There are many others that I would like to thank for all of their hard work and that I appreciate their competencies now and count on them to help keep the society successful in the future. Without our wonderful officers and members, VHS would not be the success that it is today. Congratulations to our other new officers: Dave Van Gelder as Vice President; Pattie Crane as Treasurer; and Emily Cole as Secretary. Dave and his son Wes have been enthusiastic members for years, participated in most, if not all, of the surveys since their membership, and both have shared their wonderful talents with VHS – Dave's great photography, and Wes's wonderful artwork and his cool talents in the field in catching many of the hard to catch herps. Pattie has already been a success being in charge of the VHS Store, so we are all confident that she will be a great Treasurer. Pattie has also shared some of her terrific photos in the past. Emily has been a great member helping at surveys and sharing her awesome photos, and we are all certain she will be a great Secretary since she has shown us her skills as a great organizer, compromiser, and balancer with the crew that she usually accompanies during surveys and meetings. Then, there are those who are moving to other positions: Paul Sattler is taking over as editor for *Catesbeiana*, and I would like to thank Paul for volunteering his time, energy, and talent towards this duty. His past service as our Treasurer/Secretary is very much appreciated, and I find it quite impressive that he kept up with those duties so well and for so long. I would also like to thank Steve Roble for his many years of doing a superb job as editor of *Catesbeiana* and for volunteering to help put together a special publication for VHS's upcoming 50th Anniversary. Kory Steele has provided VHS with outstanding Newsletters and does a great job in maintaining the VHS Yahoo Group on the web. Tim Christensen has been a great asset as our Conservation Committee Chair as he stays active in conservation activities both within and outside of VHS. His participation in WildlifeMapping encouraged him to invite Lou Verner, of VDGIF, to present information on this program to members at the Fall Symposium. Joy Ware continues to be a fabulous leader as our Research Committee Chair and the head of Snake Force One. Her important work helps show many in and out of VHS the value of learning more about Virginia's herp ecology and biology. Mike Clifford has been a great connection to the environmental education world as our Education Committee Chair. John White is a fantastic asset as the VHS Webmaster. Our website is always impressive and updated, and his fabulous photography always keeps much of the website attractive as well as informative. I cannot thank everyone enough and can never say enough about all the dedication and talent that they all provide to VHS. I feel so lucky to be surrounded by and supported by such wonderful folks, and they all help me feel more confident that I have them to help me keep this great group going.

I would like everyone in VHS to know that for my term as President, first and foremost I would like to keep up the successful path that VHS has been on in recent years. As well, I would like to continue to make improvements where they are needed and enhancements where they are possible. One improvement in VHS is to promote the WildlifeMapping program to members. As was mentioned at our Fall Symposium, this program is in need of herpers. I would like to help, in any way that I can (especially since I work fairly closely with the office that coordinates this program), to help encourage members to become WildlifeMappers. WildlifeMapping is a great program that helps the state and its citizens to record general wildlife observations that the state can use to see general patterns of wildlife occurrences. This gives participants a chance to learn about wildlife and assist in Virginia's conservation goals. The VHS surveys are already recorded officially to the state through our VDGIF Scientific Collection Permit. But, members can add other observations of herps (and other wildlife) throughout other times of the year and throughout other locations in Virginia by becoming WildlifeMappers. Participants can record their observations in backyards, trips to a park, camping trips, fishing and hunting trips, local gatherings organized through the VHS Yahoo Group, and any other outdoor activities. Since many of its current participants are birders or folks who are simply more familiar with mammals and birds than they are with herps, it is important that we try to get more herpers involved. Another new program that members should be encouraged to consider, and that relates well with WildlifeMapping, is the Virginia Master Naturalists program. This is a program sponsored by several state natural resource agencies, including VDGIF. It is set up similar to the Master Gardeners program, for those of you familiar with this established program. Participants take courses about conservation and natural resources, as well as volunteer their time to work on projects and duties that support the program. A set number of hours of coursework and volunteer time allow participants to become certified Master Naturalists who will serve the state as conservationists, educators, stewards, and researchers in order to benefit natural resources (including herps).

Another program, in which I would like to encourage members to participate, is the Virginia Frog and Toad Calling Survey. This is another important program to get citizens involved in collecting information on locations and abundance of anuran species in our state. The Virginia program is coordinated by VDGIF's J. D. Kleopfer, and it is part of the nationwide network of the North American Amphibian Monitoring Program. This national program provides the protocols that Virginia's program follows.

One more goal during my term will be to make sure that VHS is formally established as a non-profit status organization. (Thank you, Jason, for bringing this point to my attention.) There has been some confusion over this, and I intend to find out what steps we need to take to make sure we are officially in this

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status. Achieving this goal will allow VHS to solicit donations to help fund projects, run programs, and award student prizes. I think I have some connections who may be able to help with this goal.

In closing, I would like to encourage members to keep up the activity of VHS, especially in the celebratory spirit of VHS's 50th Anniversary coming up in 2008! There are many ways to stay active in the society: attend surveys and meetings (the '08 Fall Symposium will celebrate the 50th Anniversary), volunteer to help at VHS exhibits, offer to present papers, send in herp observations to *Catesbeiana*, write articles for the Newsletter, send in artwork and photos to *Catesbeiana* and photos to the website, join the Yahoo Group, shop at our online store, and/or contact me or other officers if you have ideas.

Susan Watson
VHS President

**Virginia Herpetological Society
Minutes of Spring Meeting
New Kent Forestry Center
New Kent, VA
July 6, 2007**

The Spring Meeting was called to order by Jason Gibson at 6:35 pm with 22 individuals in attendance. Jason began by thanking Susan Watson for making all of the arrangements at the New Kent Forestry Center and Chickahominy Wildlife Management Area. Jason asked for Committee Reports.

Paul Sattler reported that the Minutes of the Fall 2006 Meeting at Longwood University had been published in *Catesbeiana* 27(1). Since publication of the Treasurer's Report in the same issue of *Catesbeiana*, \$147.26 was deposited as income and expenses of \$512.44 were paid out to bring the current balance to \$5,919.14.

Steve Roble reported that 185 copies of *Catesbeiana* 27(1) were printed and about 165 were mailed out for a total of \$476.44. It was a large issue of about 60 pages, and the next to last one with Steve as editor, who plans to relinquish the editorship at the end of the year. Steve said that new artwork was always appreciated, and that while there were no articles ready to go, there were several in various stages of revision, as well as several surveys being written up from this and previous years.

Joy Ware reported that "Snake Force One" has begun PIT-tagging snakes on several wildlife refuges. There were about 20 volunteers active in this effort with 5-8 coming out for any one survey. Joy reminded the group that the NEPARC meeting was coming up August 20-22 and encouraged members to attend.

Pattie Crane reported that the "VHS Store" was running in the black. She has paid ahead about 6 months and has a credit of about \$150 with the organization. When questioned, Pattie reported that the Snake poster was the current best-selling item. She requested that high quality photos for the 2008 VHS Calendar be submitted before September 1, 2007 for consideration for use. Kory will advertise the Calendar in the VHS Newsletter.

John White reported that the Web Page is more active now than ever before, with "hits" coming from all over the world. New items added recently include Marty Martin's timber rattlesnake report and improvements to the snake identification page. He is currently working on a salamander identification page, no small task for Virginia. John requested that additional photos be submitted for use in the section on the different species. To see how many, if any, photos are present for any species, just check out the link to that species.

Tim Christensen reported that the Conservation Committee now has three active members, and encouraged anyone interested in helping to contact him via email (Tim.christensen@US.army.mil). The Committee has developed a set of goals, which includes the following:

1. Coordinate Conservation Committee actions/programs with those of the Education and Research Committees.
2. Promote research on herpetofaunal diseases.
3. Educate the public on why herpetofaunal conservation is important.
4. Promote the creation of new, and maintain existing, habitats.
5. Discourage the capture and collection of native wild reptiles and amphibians as pets, or for temporary display specimens.
6. Promote rehabilitation of injured native herpetofauna.
7. Support the Virginia Wildlife Action Plan.
8. Seek opportunities to partner with government agencies, other non-profit organizations, and corporate sponsors interested in herpetofaunal conservation efforts.

The Conservation Committee also printed an article in the January 2007 Newsletter asking for members to support efforts to increase resources to the Wildlife Refuge System by contacting their Congressional Representatives for their support. Finally, the Committee is working on development of a standard presentation that might be used by various members for educational purposes on the importance of conserving herpetofaunal resources.

SPRING MEETING MINUTES

There were no representatives from the Education Committee present. There was discussion on whether or not there were human resources available to organize an Educational Workshop for the Fall Meeting. Members present did not think this was possible unless the Education Committee would organize it.

New Business was then considered:

The Reptile Festival to be held on July 28 at the new Virginia Museum of Natural History facility in Martinsville was discussed. Jason expressed interest in participating and got volunteers to assist in setting up three tables at the event. One table will present dried specimens (skulls, skins, and shells) for people to handle and discuss. Another table will include VHS materials to promote the image and visibility of the organization. The third table will include live animals that will be rotated throughout the day so as to not stress any one group. There will be displays of toads, treefrogs, turtles, lizards and some salamanders. Jason would like to do a presentation on myths about herps, and he asked members to send him any recurrent myths that they have heard.

The Fall Meeting will be held on October 20 at Virginia Commonwealth University and hosted by Joy Ware. Joy is still working on the parking arrangements. Ideas for a keynote speaker were discussed, but there are currently no individuals committed. There will be a paper session with a prize of \$100 for the best student paper. A poster session will offer three prizes for student posters of \$100, \$50, and \$25, for first, second, and third place, respectively. Kory Steele was selected to organize the different auctions, which may include raffle, silent, and live auctions, if materials are available. Please let Kory know if you can provide any donations. Food in the form of a box lunch for a modest price will be available. Joy is still working on these arrangements. Joe Mitchell will be presented with the third "Lifetime Achievement" award for his long-time work on Virginia herps.

Officer nominations should be seriously considered because all three officer positions (President, Vice-President, and Secretary/Treasurer) will be in need of replacing as current officers are either off their terms and/or considering other positions of service within the Society.

The meeting was adjourned at 7:50 pm for snacks, after which Susan Watson presented a slide show on the herps that could be expected in New Kent and Charles City counties.

Submitted by Paul Sattler,
VHS Secretary/Treasurer

Virginia Herpetological Society
Treasurer's Report, November 2007

Balance on Hand May 2007 \$6,284.32

Receipts:

May Dues	\$ 20.00
June Dues	\$ 50.00
July Dues	\$ 75.00
August Dues	\$ 30.00
September Dues	\$186.00
October Dues	\$251.00
November Dues	\$ 75.00
<i>Catesbeiana</i> back issues	\$ 17.26
Donation	\$ 35.00
T-Shirt Sale	\$ 60.00
Silent Auction Receipts	\$267.00
Live Auction Receipts	\$443.00
Book Sales	\$ 40.00
Additional Fall Meeting Income	\$266.65

Total Receipts \$1,815.91

Disbursements:

<i>Catesbeiana</i> 27(1)	\$476.44
Virginia Museum of Natural History (Contribution to Richard Hoffman Symposium)	\$250.00 X
Herpblitz Charges	\$ 36.00
Herpblitz Food	\$ 36.91
Auction Books for Fall Meeting	\$355.00
Plaques of Appreciation for Service	\$200.57
Fall Honoraria	\$250.00
Student Paper Award	\$150.00
Student Poster Awards	\$200.00
Fall Meeting Lunches and Delivery fee	\$167.00
Fall Meeting Food	\$171.63
Stop Check Charge (for PARC)	\$ 35.00

Total Disbursements \$2,328.55

Balance on Hand November 2007 \$5,771.68

Paul Sattler, VHS Secretary/Treasurer

Editor's Notes

This is my 19th and final issue as Editor of *Catesbeiana*. When I volunteered to assume this role in mid-1998, I had no intention of retaining it this long. I believe that I succeeded in achieving my goal of improving the quality of this journal through peer review and careful editing. The criteria for submitting field notes were upgraded, requiring authors to explain the significance of their observations and to provide better documentation (i.e., specimens, photos or recordings) for all new county/city records. Compared to the previous 19 issues published before my tenure as Editor, the average size of *Catesbeiana* increased by more than 50% (48 pages per issue vs. 31). Six of the 19 issues that I edited and produced contained 56 pages or more, and ten other issues had at least 40 pages. The number of printed pages (120) in 2007 establishes a new high mark for *Catesbeiana*, topping the previous record of 104 set in 2005. Furthermore, the print size (10 pt. font) used in both of this year's issues was smaller than that of nearly all previous issues (11 pt.); otherwise, this year's total would have exceeded 130 pages. The current issue also includes color plates for the first time.

I would like to thank the following VHS members who served as President during my tenure as Editor for their support, as well as for timely submissions of the President's Corner and meeting announcements: Mike Pinder, Bob Greenlee, Jason Gibson (two terms), and Mike Clifford. Jason deserves special mention for his recent efforts to arrange for 1-2 additional field surveys per year (vs. the traditional spring survey only) to ensure that *Catesbeiana* has had a steady supply of manuscripts in the past few years. As some readers know, on many occasions in previous years I felt compelled to prepare a last-minute lead article (and numerous field notes) for *Catesbeiana* because of a lack of submissions from members. Hopefully, this problem has been permanently resolved and future editors will not face this same predicament. Offhand, I can think of six recent VHS surveys that have not yet been published in *Catesbeiana* but which should be completed and ready for publication in 2008. I would also like to thank the last two members who served as Secretary/Treasurer, Shay Garriock (1998-1999) and Paul Sattler (2000-2007), for providing mailing labels/lists, meeting minutes, and financial reports for each issue.

I thank the following people for reviewing manuscripts during the past decade: Tom Akre, Tim Brophy, Dick Bruce, Kurt Buhlmann, Anne Chazal, Don Church, Bob Davic, Chris d'Orgeix, Carl Ernst, Jason Gibson, Dick Highton, Chris Hobson, Richard Hoffman, Fred Huber, Don Mackler, Don Merkle, Walt Meshaka, Joe Mitchell, Jim Organ, Tom Pauley, Jim Petranka, Norm Reichenbach, Paul Sattler, Al Savitzky, John White, and Jill Wicknick. I especially thank Drs. Hoffman and Mitchell for reviewing numerous submissions, often on short notice. I apologize for any names that I may have inadvertently omitted from the above list.

Technological advances during the past decade, particularly in email and digital photography, have greatly benefited the production of *Catesbeiana*. The ability to send and receive manuscripts, page proofs, and digital images as email attachments has proven invaluable. The VHS still lacks desktop publishing software, but the ability to insert digital images (maps, photographs, illustrations, etc.) into articles, field notes, and other pages of the journal has made that aspect of the editor's job much easier. I recommend that the society consider a more professional publishing format (vs. standard photocopying) for the journal in the future. However, this will require a longer delay at the printers, and thus more strict deadlines for submissions. As most members should already know, all past issues of the *VHS Bulletin* (1958-1979) and most back issues (through 2005) of *Catesbeiana* were recently posted on the VHS website (vaherpsociety.com) through the efforts of Paul Sattler and his students and John White.

The next Editor of *Catesbeiana* will be Paul Sattler, who previously served in this role for 8.5 years before me, and most recently was the VHS Secretary/Treasurer. Effectively immediately, all submissions for *Catesbeiana* should be sent to him at this address: Dr. Paul Sattler, Editor, *Catesbeiana*, Department of Biology, Liberty University, 1971 University Blvd., Lynchburg, VA 24502 (email: pwsattler@liberty.edu). I hope that members will provide Paul with a sufficient quantity and quality of manuscripts, field notes, and illustrations for each issue of the journal. I wish him well in his second tour of duty as Editor.

It has been my pleasure to serve as the Editor of *Catesbeiana*. Thanks to everyone who submitted articles, field notes, illustrations, and corrections during the past decade. Without your submissions, there is no journal.

In 2008, I will help to prepare a special publication to coincide with the 50th anniversary celebration of the VHS. I welcome any suggestions from members for topics to be covered or items to be included in this publication.

Last but not least, I thank my family for allowing me to devote hundreds of evening and weekend hours during the past decade to the tasks of editing and formatting *Catesbeiana*, and for their assistance in applying mailing labels, stamps, and tape to many of the journals.

Steve Roble
Catesbeiana Editor

Lifetime Achievement Award

At its fall meeting held at Virginia Commonwealth University on October 20, 2007, the Virginia Herpetological Society awarded Dr. Joseph C. Mitchell, a member since 1963 and former Society President (1988-1993) and *Catesbeiana* Editor (1983-1985; also interim editor, 1989), with a Lifetime Achievement Award for his past service to the VHS and for outstanding contributions to the field of herpetology in the Commonwealth of Virginia. The VHS has presented this award, its highest honor, only twice previously in its 49-year history (other recipients were Frank Tobey in 1998 and Richard Hoffman in 1999). Joe is perhaps best known to most members of the Society for his book entitled *The Reptiles of Virginia* (1994, Smithsonian Institution Press) and for being the senior author of the second Virginia herpetological atlas (Mitchell and Reay, 1999. Atlas of Amphibians and Reptiles in Virginia. Virginia Department of Game and Inland Fisheries Special Publication No. 1). He also coauthored the popular brochure on the snakes of Virginia produced by VDGIF and a book entitled *Amphibians and Reptiles of Assateague and Chincoteague Islands* (1994, Virginia Museum of Natural History Special Publication No. 2). In addition, Joe has published hundreds of scientific and popular articles and book chapters on the herpetofauna of Virginia. Joe recently relocated to Gainesville, Florida. We wish him well in his future endeavors and thank him for his many contributions to Virginia herpetology.

New VHS Officers

(elected at Fall Meeting, October 20, 2007)

President – Susan Watson

Vice-President – David Van Gelder

Secretary – Emily Cole

Treasurer – Patricia Crane

Dues Reminder

Membership in the Virginia Herpetological Society is on a calendar year basis (expires annually on December 31). **Please renew your membership for 2008 now** to save our Treasurer the time and expense needed to send you a renewal notice. See the last page of this bulletin for the membership application/renewal form. Inclusion of your email address on the form provides the Society with the easiest and cheapest method of distributing the Newsletter to members and informing you about upcoming meetings, field trips, and other events.

MEMBERSHIP APPLICATION

I would like to initiate renew membership in the Virginia Herpetological Society for the year 2008 2009 2010.

Name _____

Address _____

Phone _____

email address: _____

Dues Category: Regular (\$15.00)
 Family (\$20.00)
 Under 18 (\$8.00)
 Life (\$225.00)

Interests: Amphibians Reptiles
 Distribution Research
 Captive Husbandry
 Specifically _____

Make checks payable to the Virginia Herpetological Society and send to:
Patricia Crane, 71 Jefferys Drive, Newport News, VA 23601

Visit the VHS web site at: vaherpsociety.com

Visit the VHS store at: <http://www.cafepress.com/vaherpsociety>

Field Notes

The field notes section of *Catesbeiana* provides a means for publishing natural history information on Virginia's amphibians and reptiles that does not lend itself to full-length articles. Observations on geographic distribution, ecology, reproduction, phenology, behavior, and other topics are welcomed. Field Notes will usually concern a single species. The format of the reports is: scientific name (followed by common name in parentheses), state abbreviation (VA), county and location, date(s) of observation, observer(s), data, and observations. The name(s) and address(es) of the author(s) should appear one line below the report. Consult the editor if your information does not readily fit this format. **All field notes must include a brief statement explaining the significance of the record** (e.g., new county record) **or observation** (e.g., unusual or rarely observed behavior, extremely early or late seasonal record, abnormal coloration, etc.). Submissions that fail to include this information are subject to rejection. Relevant literature should be cited in the body of the text (see Field Notes in this issue for proper format). All submissions will be reviewed by the editor (and one other person if deemed necessary) and revised as needed pending consultation with the author(s).

If the field note contains information on a **new county (or state) record**, **verification is required in the form of a voucher specimen** deposited in a permanent museum (e.g., Virginia Museum of Natural History) or a **photograph** (print, slide, or digital image) **or recording** (cassette tape or digital recording of anuran calls) deposited in the archives of the Virginia Herpetological Society. Photographs and recordings should be sent to the editor for verification and archiving purposes; the identity of voucher specimens must be confirmed by a museum curator or other qualified person. Include the specimen number if it has been catalogued. Prospective authors of distribution reports should consult Mitchell and Reay (1999. *Atlas of Amphibians and Reptiles in Virginia*), Mitchell (1994. *The Reptiles of Virginia*), and Tobey (1985. *Virginia's Amphibians and Reptiles: A Distributional Survey*) [**both atlases are available on-line on the VHS website**] as well as other recent literature to determine if they may have a new county record. New distribution records from large cities that formerly constituted counties (Chesapeake, Hampton, Newport News, Suffolk, and Virginia Beach) are acceptable, but records from smaller cities located within the boundaries of an adjoining county will only be published if the species has not been recorded from that county. Species identification for observational records (e.g., behavior) should be verified by a second person whenever possible.

PHOTOGRAPHS

High contrast photographs (prints, slides, or digital images) of amphibians and reptiles will be considered for publication if they are of good quality and are relevant to an accompanying article or field note. Digital images are preferred. Prints should be on glossy paper and no larger than 5 x 7 inches. Published photographs will be deposited in the Virginia Herpetological Society archives.