



# Virginia Herpetological Society Newsletter

Volume 20, Number 2

August 2010

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VHS Officers were recently featured in their local news! VHS President and VHS Research Committee Chair were both in their local newspapers recently, discussing box turtles and spotted salamanders, respectively. See these news items starting on Page 13.



Come to **VHS Surveys**, start page 4!

**What is  
Virginia's rarest  
skink?  
Herp Trivia  
Page 5**

**Alert!**

VHS needs photos for  
the 2011 Calendar!  
See page 3!

This month's Virginia Native- page 20



Little Brown Skink

### Coming Events

EVENT	LOCATION	DATES
VHS Calendar Photos	<a href="mailto:pattiecrane@gmail.com">pattiecrane@gmail.com</a>	Sept 1
VHS Annual Fall Symposium	Virginia Zoo, Norfolk	Oct 16

Home Page: <http://www.virginiaherpetologicalsociety.com>  
 Message Board: <http://groups.yahoo.com/group/VaHS>  
 Online Store: <http://www.cafepress.com/vaherpsociety>

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## VHS BUSINESS

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|---|--|
| <p><b>VHS Now Officially Tax Exempt 1)</b><br/> <b>New VHS Advisory Committee 2)</b><br/> <b>NEED Photos for VHS 2011 Calendar!!! 3)</b><br/> <b>VHS Website Updates 4)</b></p> | <p><b>5) 2010 VHS Annual Fall Symposium</b><br/> <b>6) 2010 VHS Grant in Herpetology Winner</b><br/> <b>7) WHAT KIND OF SNAKE IS THIS?</b></p> |
|---|--|

### 1) VHS Now Officially Tax Exempt

Great news! VHS got its official federal tax exempt status! Our letter was received via mail, on March 1, 2010, from the IRS determining VHS to be exempt from federal income tax under section 501 (c)(3).

### 2) New VHS Advisory Committee

VHS President, Kory Steele, recently appointed five individuals to serve as the VHS Advisory Committee. They will share their opinions with the rest of the VHS Executive Committee during VHS business email discussions & attend VHS business meetings. Welcome new committee members!

**John Orr:** John has been a member of VHS for ten years. He is a PhD student at George Mason University where he earned his MS under Dr. Carl Ernst. His Masters research focused on [microhabitat use by the Eastern worm snake](#) at Mason Neck. After teaching science at the middle school, high school, and college levels for the last eight years, John is currently seeking biology employment outside of academia. He is working at the Smithsonian for the summer.



John with box turtle

**Dr. Rachel Goodman:** Rachel has just finished her first year in Virginia as an Assistant Professor in the Biology Department at Hampden-Sydney College. Currently, she is surveying diseases in local reptiles and amphibians. Previously, she studied behavior, ecology, and conservation of lizards while earning her M.Sc. and Ph.D. from the University of Tennessee, Knoxville. See her [webpage](#).



Rachel with crocodilian

**Leeanna Pletcher:** Leeanna earned her BS & MS in Biology at Va. Commonwealth University, collaborating with Dr. James Vonesh to investigate predator effects on oviposition & colonization of amphibians & aquatic invertebrates; earned many awards; & enjoyed teaching at the Walter & Inger Rice Center for Environmental Life Sciences. She volunteered as an avian field assistant for the Dept of Biology & Environmental Studies at VCU, recording banding data for Prothonotary Warblers. She examined snake, frog & salamander health as an assistant with 'Snake Force One.' She authored articles in the *Va. Journal of Science*, *The Journal of Wildlife Diseases*, *Catesbeiana*, & *The Thrasher*. She enjoys lecturing on box turtles, amphibian breeding, salamander sampling methods & rat basketball. She's a member of the Va. Academy of Science & the Richmond Audubon Society, too. She was recently a Wildlife Diversity Technician at the Va. Dept of Game & Inland Fisheries, surveying & monitoring state endangered Rafinesque Big-eared Bat, surveying herps & culturing freshwater mussels. She's now raising her son "J.J."



Leeanna at the "rivaahhh"

**Caroline Seitz:** Caroline has been a member of the VHS since elementary school. She is the director of the wildlife education outreach organization Reptiles Alive LLC, which she founded in 1996. Before that, she held other wildlife related jobs including: work at various zoos as both a keeper and educator; park ranger & naturalist; & snake removal technician. Caroline graduated from George Mason University with a BA in Speech Communication & completed Dr. Carl Ernst's graduate course in herpetology.



Caroline with Sunshine, albino Burmese python

**Craig Pelke:** Craig received his BS from the University of Wisconsin-Stevens Point; double major in Wildlife Management & Zoology, minor in Captive Wildlife Management. Currently he's working on an MA in Zoo & Aquarium Leadership at George Mason University. He has 19+ years in the zoo profession including in PA,

AZ, & WI, and currently he is Curator of Birds & Ectotherms at the Virginia Zoological Park in Norfolk. Fieldwork has included multiple stints in Grand Cayman with the Grand Cayman Blue Iguana Recovery Program; Timber Rattlesnake research in southwestern WI; Eastern Massasauga research in western WI; El Valle Amphibian Crisis work in Panama; Great Pied Hornbill research in



Craig with 10' male Boelen's python



Thailand; Humbolt Penguin research in Chile; and Ornate Box Turtle head-start program in WI. He enjoys herpetoculture, photography, hiking, traveling, landscaping, sports (watching & playing), & wildlife watching.

### 3) NEED Photo Submissions for the VHS 2011 Calendar!!!:

The VHS Store manager, Pattie Crane, needs high resolution pictures in good quality. Images should have the subject in focus and with very little background distraction. Images received before September will be considered for the 2011 calendar, but any late submissions will be saved for consideration in the 2012 calendar. Please send your submissions to [pattiecrane@gmail.com](mailto:pattiecrane@gmail.com)

### 4) VHS Website Updates

Our website address has changed... please update your favorites and/or bookmarks:

<http://www.virginiaherpetologicalsociety.com/>

Also, we now have a new webpage reporting all donations VHS has made to other organizations, grants to students & research, & prize money to students who presented papers or posters at VHS Fall Symposiums. Please check the link: <http://www.virginiaherpetologicalsociety.com/funds/funds.htm>

Check out an amazing series of posters that features known native and naturalized reptile and amphibian species of the metropolitan Washington, D. C. area. The posters can be purchased for \$18 each and feature high quality photographs of each species.

Finally, [Marty Martin's 2010 Timber Rattlesnake Emergence Report](#) is also now posted on the VHS website. Check it out!

### 5) 2010 VHS Annual Fall Symposium

The Annual Fall Symposium will be held at the [Virginia Zoo](#), in Norfolk, on Saturday, October 16, 9am to 5pm. The keynote speaker will be [Dr. Robert Weems](#), from the USGS, who is a renowned expert in Virginia's herpetological fossils. A behind-the-scenes tour will be provided by Craig Pelke, Curator of Birds and Ectotherms. This event will also feature oral and poster presentations from students (with \$100 1<sup>st</sup> place and \$50 2<sup>nd</sup> place prizes for each category), silent and live auctions, and the VHS business meeting where discussions will begin for planning 2011 surveys and other events. Also this year, attendees will be able to pay for auction items, membership dues, donations, and the like via PayPal with a provided computer at the event.

Location (linked to directions): [3500 Granby Street, Norfolk, VA 23504](#)

Admission: Free for VHS attendees; Regular zoo visits are \$8 for adults and \$6 for children ages 2-11 yrs.

Food: Onsite catering, with box lunches ranging \$8-10, including veggie options

Please keep checking the [VHS Website](#), under "2010 Calendar of Events", for further details as the date for this event gets closer. Also, contact Kory Steele for questions or details at [colchicine@gmail.com](mailto:colchicine@gmail.com), or check the [VHS Yahoo Group](#).

### 6) 2010 VHS Grant in Herpetology Winner

Congratulations to Eric Liebgold for winning the 2010 VHS Grant in Herpetology! Eric is a PhD candidate at the University of Virginia's Department of Biology. VHS sent Eric a check for his research proposal entitled "The effects of genetic heterozygosity on territory size in the terrestrial salamander, *Plethodon cinereus*". Eric hopes to determine if heterozygosity, a measure of an individual's genetic diversity, is correlated with territory size and is correlated with fitness.





For those interested in sending a proposal for the 2011 VHS Grant in Herpetology, the Virginia Department of Game and Inland Fisheries has agreed to provide a matching \$500 in grant funding for any proposals that are deemed acceptable AND that propose research on any of Virginia's herpetofaunal Species of Greatest Conservation Need from the Virginia Wildlife Action Plan (<http://bewildvirginia.org/>). Keep checking the VHS website for information on this!

## 7) WHAT KIND OF SNAKE IS THIS?

Mike Clifford, VHS Education Committee Chairman

*"What kind of snake (or lizard, turtle, frog, salamander) is this? I took the photo this morning in my yard (or basement, garage, shed, deck)."* Ever since the VHS website was established, our executive committee members have been responding to email requests like this from the general public. It seems that everyone in the state of Virginia now has access to a computer and a digital camera!

For the most part over recent years, we simply identified the animal and replied to the sender. In many cases, we were able to relieve anxieties, alleviate fears, and perhaps save the lives of a few herps. We performed a useful service, but did not have an organized system for handling these public contacts.

This year, however, we are trying a system which directs the identification requests to [animal-id@vaherpsociety.com](mailto:animal-id@vaherpsociety.com) (instead of pick-and-choose from the VHS leadership directory). Emails to this address go to Kory Steele, John White, and me. One of us will reply to the sender, with copies to each other in case we have more information to provide. In addition, as an Education Committee effort, I maintain a VHS Herp ID log to keep track of the requests and responses from the three of us and from other members of the VHS leadership team.

Fifty-five identification requests were processed during the first half of 2010. Not surprisingly, most (46) of these involved snakes. The Eastern Rat Snake was most often involved (17), with 12 other species submitted. Many senders were worried that the snake they saw might have been venomous, yet no Copperhead or Timber Rattlesnake photos were submitted. One Cottonmouth on a boat dock in Back Bay was sent to us for verification.

Some of the submitted photos have been quite remarkable and are posted on the VHS website. Among the Eastern Rat Snake photos are a striped specimen from Chesapeake and an unusual blotched one from Frederick county. Check the Northern Watersnake photos to see a great bullfrog-swallowing series in the wilds of Fairfax county. Another interesting photo shows a juvenile Black Racer swallowing a Northern Brown Snake in Chesterfield county.

At least two county locality records have been documented from reader-submitted photographs and associated data this spring. These will be published in future editions of *Catesbeiana*.

The VHS website herp identification service is a mutualistic relationship. The readers get their questions answered and VHS gets access to some great photos and new locality data. And the Virginia's reptiles and amphibians ultimately benefit from an educated public.

## EVENTS

### Reptile Expos & Show (1 | 2) International Herp Lecture

	Northern Va Reptile Expo	Richmond Reptile Expo	Mid-Atlantic Reptile Show
Dates	8/28, 10/9, 2/11/2010	10/24/10	9/18-19/10
Location	Prince William County Fairgrounds Manassas, Virginia 20108	The Holiday Inn Select 1021 Koger Center Blvd. Richmond, VA 23235	MD State Fairgrounds 2200 York Rd., Timonium, MD 21093
Admission	\$7 / \$3 child	\$8 / \$3 child	\$9 / \$7 child
Time	9 am to 3 pm	10 am to 3 pm	10 am to 5 pm
Contact	<a href="http://www.kingsnake.com/nva">www.kingsnake.com/nva</a>	<a href="http://www.kingsnake.com/richmond">www.kingsnake.com/richmond</a>	<a href="http://www.midatlanticroptileshow.org">www.midatlanticroptileshow.org</a>

## **International Herpetology Lecture – Saturday, September 4, 2010**

On Saturday, September 4, 2010, at 3pm, a lecture by Dr. Paul Hamilton, Director of Reptile & Amphibian Ecology International, will be at the Va Dept of Game & Inland Fisheries' Region 1 Office, at the Rice Center, in Charles City County (about 30 mins southeast of Richmond). Dr. Hamilton will present "Species Discovery to Conservation Ecology: Reptiles & Amphibians of the Most Biodiverse Country on Earth." VHS members may attend, first come first serve, for free. Pre-registration is required, since space is limited. Please email both Tim Christensen, [mtnc066@msn.com](mailto:mtnc066@msn.com), and Susan Watson, [shwatson8888@yahoo.com](mailto:shwatson8888@yahoo.com) to register or for details.

## HERP TRIVIA

The questions and answers in this edition of "Herp Trivia" are pulled from material in the new 2<sup>nd</sup> edition of *Amphibians & Reptiles of the Carolinas and Virginia*, which is reviewed on page 10 of this VHS newsletter. The common names and species range maps as they appear in the book are used in the questions & answers below.

1. Which two physiographic provinces border the Piedmont of Virginia?
2. The Virginia Herpetological Society was the first organization of its kind in the Carolinas and Virginia. In what year was it organized?
3. What class of animals evolved from fishes in the Devonian times to become the first land-dwelling vertebrates?
4. Which two species of sirens are native to Virginia?
5. What are Virginia's two most geographically widespread members of the genus *Ambystoma*?
6. Which Virginia salamander is dorsoventrally flattened, with green or yellowish green, lichen-like patches?
7. Which Virginia salamander often folds a leaf around each of its eggs, thus hiding it from view?
8. Which is the earliest breeding of Virginia's true toads (*Bufo*)?
9. Which species is Virginia's largest treefrog?
10. Which of Virginia's two sibling gray treefrogs has 24 chromosomes?
11. What Virginia freshwater turtle attains weights over 50 pounds?
12. What distributional feature do the Spiny Softshell, the Stripe-necked Musk Turtle, the Common Map Turtle, and the Cumberland Slider have in common?
13. What species is Virginia's largest turtle?
14. What are the two most widespread lizard species in Virginia?
15. What are the two least widespread lizard species in Virginia?
16. What is Virginia's rarest species of skink?
17. How many species of snakes are native to Virginia?



18. The adults of what Virginia snake feed mostly on eels?
19. Crayfish are the favorite food of which two Virginia snakes?
20. What is the most widespread of Virginia's venomous snakes?

Answers can be found on page 18

**NOTICE: Submissions for *Catesbeiana* Vol. 30 No. 2 are due September 1, 2010!**  
 Please support the VHS by submitting any papers, field notes, or artwork for *Catesbeiana* to: Dr. Paul Sattler, Editor, *Catesbeiana*, [pwsattler@liberty.edu](mailto:pwsattler@liberty.edu).

## ZOO UPDATES

### Virginia Living Museum

### Newport News

[thevlm.org](http://thevlm.org)



Summer brings a new educational program to the Virginia Living Museum . Educators developed a turtle censusing project to examine the turtle population in Lake Maury, which is behind the museum. Enrolled kids assist staff with identification, measurements, and documentation of the turtles caught. Traps have yielded red-eared sliders, yellow-bellied sliders, eastern painted turtles, eastern snapping turtles, and northern red-bellied cooters. We hope to have enough interest to continue this project year after year. Inside the museum, we are incubating the eggs of a few different reptile species. Our staff is carefully watching a clutch of northern fence lizard eggs due in August.  
 - Stephanie Kokosinski

### Virginia Zoological Park

### Norfolk

[virginiazoo.org](http://virginiazoo.org)



#### Incoming new animals:

- 0.0.2 Beaded lizards (*Heloderma suspectum*)
- 0.0.6 Milky Tree Frogs (*Trachycephalus resinifictrix*)
- 0.0.3 Diamondback Terrapins (*Malaclemys terrapin terrapin*)
- 0.0.1 Eastern Cottonmouth (*Agkistrodon piscivorus piscivorus*) from the VLM
- 0.0.1 Timber Rattlesnake (*Crotalus horridus*) from the VLM
- 0.0.1 Rough Greensnake (*Ophiodryas aestivus*)
- 0.0.1 Costa Rican Tiger Rump Tarantula (*Cyclosternum fasciatum*)

#### Hatchings/Births:

- 0.0.1 Rhino Ratsnake (*Rhynchophis boulengeri*)
- Bog Turtles (*Glyptemys muhlenbergii*)-hopefully more later this summer...we had 2 successful hatchings last summer

#### New exhibits:

- Aldabra Tortoise (*Geochelone gigantea*) exhibit with an adjacent holding building to be built this fall
- Temporary African Rock Python (*Python sebae*) exhibit-to display our young growing girl (only ~9' right now)

- Craig Pelke



***“Hope and the future for me are not in lawns and cultivated fields, not in towns and cities, but in the impervious and quaking swamps.”***

**- Henry David Thoreau**

## CONSERVATION KEY

### Diamondback terrapin

Dear Members, the Virginia Herpetological Society would like to thank Ms. Diane Tulipani for being a guest author for the Conservation Key for this edition of the [Newsletter](#).



Diane Tulipani with a terrapin

Diane is a Ph.D. student at the Virginia Institute of Marine Science in the Marine Conservation Biology – Community Ecology lab working with Drs. Rom Lipcius and Randy Chambers ([College of William and Mary](#)) and is

studying the foraging and community ecology of diamondback terrapins in the southern Chesapeake Bay.

Diamondback terrapins (*Malaclemys terrapin*) are the only turtle in the U.S. that lives exclusively in brackish saltwater marshes, coastal bays and lagoons from Cape Cod, MA, to Corpus Christi, TX. Of the seven subspecies of diamondback terrapins, the northern diamondback (*Malaclemys terrapin terrapin*) is found in Virginia. Their skin coloration varies greatly from light silver or cream to dark gray or black, with small to large spots that are sometimes elongated. Shell coloration varies greatly as well, ranging from black to pale gray or brown. Though terrapins mainly stay in the water, they can be spotted basking along marsh creek banks. Terrapins can live upwards of 40 years. Male and female terrapins are sexually dimorphic, which means that adult females and adult males are different sizes. Adult females are nearly twice as large as adult males (approximately 12 inches vs. 6 inches shell length, respectively). Male terrapins also exhibit longer and thicker tails with the cloacal vent located beyond the edge of the carapace.

In Virginia, the mating season occurs from April through May following emergence from overwintering in the mud of marsh creeks. Nesting season follows from June through mid-August. During this period, adult females leave the water to find sandy beaches to dig nests and

deposit their eggs. A single female can lay up to 3 clutches of 5-20 eggs per nesting season. Incubation times range from 60-90 days depending on the location along their range. Similar to other turtles, terrapins have a low egg-to-hatchling survival rate (1-3%) as nests and hatchlings frequently fall victim to predation from raccoons, crows, and rats. Hatching starts in August and, once hatched, young terrapins are also predated upon by raccoons, wading birds, and large fish species.

All diamondback terrapins exhibit strong site fidelity for their home range. Adult females also return to specific nesting beaches annually. In one long-term study in South Carolina, terrapins were recaptured in the exact same creek year after year for over twenty years. Terrapins mainly feed on a variety of marsh crabs, snails, mussels, clams, and barnacles depending on where they live along their range. In Virginia, they feed primarily on barnacles, blue crabs and marsh crabs, periwinkle and salt marsh snails, and mussels. The large, adult females mostly consume mussels and crabs.

Diamondback terrapins were once plentiful in the Chesapeake Bay, but their population was decimated from the late 1880s to the early 1900s from commercial harvest that supported the demand for turtle soup. During the early 20<sup>th</sup> Century, terrapin farms became quite common as demand for turtle meat increased. Despite these ventures and terrapins imported from Texas and the Gulf coast, the Chesapeake Bay population continued to decline. The commercial demand for terrapins ended by the 1930s as a result of low population abundance and Prohibition, as sherry was another key ingredient of turtle soup.

Today, the combined threats of continuing habitat loss, injuries and death from collisions with boats, and drowning in crab pots continue to threaten the survival of all terrapin. Scientists agree that the greatest threat to diamondback terrapins throughout their range is drowning in crab pots. It



has been suggested that terrapins are attracted to the same bait used to attract crabs to the pots. And, because of their smaller size, male and juvenile female terrapins are the most vulnerable to capture and drowning in commercial-style crab pots. Terrapins may also enter pots out of curiosity, because other terrapins are already in the pot, or because they are looking for a protected place to rest.



Terrapins trapped in crab pot;  
photo by Tim Russell

The harvest of the blue crab, *Callinectes sapidus*, is one of the largest on-going commercial shellfish harvests in the Chesapeake Bay. Crabbing is a favorite pastime for many Virginia residents as well. Recreational crab pots are typically set in shallow, near-shore waters along creeks and marshes, which is prime territory for males and juvenile female terrapins. Once they get into a crab pot most terrapins cannot escape and will eventually drown. Lost or abandoned crab pots, called ghost pots, can also be a serious threat to terrapins as they continue to trap and kill any marine organisms that enter and are too large to escape.

There is a simple and low-cost way to prevent terrapins from getting into commercial-style crab pots. By attaching a **bycatch reduction device** (BRD) to each funnel opening, the majority of terrapins and other organisms can be prevented from entering the pot. Studies have shown that while effective at preventing other animals from entering, BRDs have little impact on the size and number of blue crabs found in crab pots.

Scientists have determined the most effective size for a BRD is 1 3/4" x 4 3/4". It can be made easily out of galvanized wire and hog rings. A BRD is then attached within each funnel opening with plastic cable ties. Plastic BRDs are also available for purchase. Visit the VIMS website, [www.vims.edu/terrapi](http://www.vims.edu/terrapi), to get a copy of detailed instructions for making your own BRDs.



Crab pot with BRD's attached;  
photo by Diane Tulipani

**Please note:** In Virginia, the collection of diamondback terrapins is prohibited for both commercial and personal use (see Virginia Department of Game and Inland Fisheries Nongame regulations at <http://www.dgif.virginia.gov/fishing/regulations/nongame.asp>).

To learn more about diamondback terrapins and their conservation visit the following websites: Virginia Institute of Marine Science Diamondback terrapin webpage:

[www.vims.edu/terrapi](http://www.vims.edu/terrapi)

Diamondback Terrapin Working Group

[www.dtwg.org](http://www.dtwg.org)

Virginia Department of Game and Inland Fisheries

<http://www.dgif.virginia.gov/wildlife/information/?s=030067>

[http://www.vafwis.org/fwis/booklet.html?Menu=\\_.Life+History&bova=030067](http://www.vafwis.org/fwis/booklet.html?Menu=_.Life+History&bova=030067)

The Wetlands Institute

[www.terrapiinconservation.org](http://www.terrapiinconservation.org)

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*It is a curious situation that the sea, from which life first arose, should now be threatened by the activities of one form of that life.*

**-Rachel Carson**

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## HERPCETERA

### VIMS asks volunteers to help terrapins (1 | 2) Diamondback Terrapin Symposium

#### 1) VIMS asks volunteers to help keep terrapins from crab pots

by David Malmquist | May 17, 2010

Researchers at the [Virginia Institute of Marine Science](http://www.vims.edu) are asking recreational crabbers to take a small step that could have a big payback for Chesapeake Bay's beleaguered population of diamondback terrapins.



These reptiles—the only turtles in the U.S. that live exclusively in saltwater marshes—face numerous threats, including habitat loss, boat strikes, and nest predation by raccoons and other animals. They are currently under consideration as a "species of concern" by the [U.S. Fish and Wildlife Service](#). But the greatest threat to diamondback terrapins, scientists say, is drowning in crab pots. Diane Tulipani, a graduate student in the School of Marine Science at VIMS, is studying the terrapin's role in the [Chesapeake Bay](#) ecosystem for her dissertation research. She says "Terrapins are attracted by the same bait used to lure blue crabs to crab pots. Once the turtles get inside, most can't escape, and because they're air-breathing animals, they eventually drown."

The problem is most pressing among the pots set by recreational crabbers, which typically sit in shallow waters along creeks, seagrass beds, and marshes. "This is prime territory for males and juvenile female terrapins," says Tulipani. "Because of their smaller size, these terrapins are particularly vulnerable to capture and drowning." Adult males are only half as large as adult females, growing to about 6 inches long. Adult females are typically too large to enter a pot's funnel-like openings.

The solution to the problem, says Tulipani, is both easy and cheap—crabbers can simply [buy or build small "bycatch reduction devices"](#) and attach one to each of the funnel openings on their pots. A pre-made plastic "BRD" costs about 45 cents. Making one from galvanized wire takes just a few minutes.



Recent studies by [William and Mary](#) Biology graduate student Megan Rook and Austin Allen, a W&M undergraduate enrolled in the [REU program at VIMS](#), showed that these simple devices are highly effective at keeping terrapins from entering pots, while still allowing the pots to harvest their intended blue crab prey. Rook and Allen were advised by Professors Randy Chambers (Biol.) and Rom Lipcius (VIMS).

Professor Lipcius has made a recommendation to the Virginia Marine Resources Commission's [Crab Management Advisory Committee](#) that recreational crabbers be required to use bycatch reduction devices due to their low cost and ability to exclude terrapins, while not affecting the crab harvest. However, in response to concerns from commercial crabbers, the VMRC Blue Crab Committee earlier this year decided to first implement a voluntary BRD program. "We wanted to know if a voluntary program would be followed," says Lipcius, "and if it would be sufficient to significantly reduce bycatch of terrapins in crab pots." Lipcius and other members of the Blue Crab Studies Program at VIMS plan to monitor participation in the volunteer program beginning later this summer.

VIMS will jumpstart its efforts to encourage BRD use among recreational crabbers with a booth at the Institute's [annual Marine Science Day open house](#) on May 22<sup>nd</sup>. The display will feature information about terrapins, a BRD-equipped crab pot, and the opportunity for visitors to make their own set of BRDs for free. A limited number of pre-made plastic BRDs will also be given out at no cost. Instructions on how to make and apply bycatch reduction devices for your own crab pots, as well as information on the natural history of diamondback terrapins, are also available on the [VIMS website](#).

## **2) Diamondback Terrapin Symposium - Call for Papers- The 5th National Symposium on the Ecology, Status, and Conservation of the Diamondback Terrapin is announced.**

Where: LUMCON W. J. DeFelice Marine Center, Chauvin, Louisiana; When: 12-14 November 2010

The Diamondback Terrapin Working Group is made up of individuals from academic, scientific, regulatory and private institutions/organizations working to promote the conservation of the Diamondback Terrapin, the preservation of intact, wild terrapin populations and their associated ecosystems throughout their range. DTWG is committed to and supports research, management, conservation, and education efforts with the above goals in mind.

This conference is a forum for the presentation of current information on Diamondback Terrapin research and conservation. In addition to updating colleagues on current research, the conference can serve as a forum to identify research needs, foster friendships, and rekindle interest in terrapins by bringing people with diverse backgrounds together. All interested individuals are invited.

We are accepting abstracts for oral papers and posters from now until 1 October 2010. Posters will be on display on Friday, Saturday, and Sunday morning. The poster session will be on Saturday afternoon. Presentations are planned to be 20 minutes in total length (15 min. presentation, 5 min. questions).

For more information please see: <http://www.dtwg.org>

or contact: Dr. Russell Burke/Department of Biology, Hofstra University, 516.463.5521, [biorlb@hofstra.edu](mailto:biorlb@hofstra.edu)

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## BOOK REVIEW

***Amphibians & Reptiles of the Carolinas and Virginia (2<sup>nd</sup> Edition)*** 2010, University of North Carolina Press. 274 pp.

*Authors: Jeffrey C. Beane, Alvin L. Braswell, Joseph C. Mitchell, William M. Palmer, and Julian R. Harrison III. Photographs by Jack Dermid. With contributions by Bernard S. Martof and Joseph R. Bailey.*

In the thirty years since the original 1980 edition was published, over 50 herp name changes and species discoveries have occurred in the Carolinas and Virginia. This new 2nd edition provides up-to-date coverage of 189 species in the 3-state area: 78 salamanders, 33 frogs & toads, 1 alligator, 24 turtles, 14 lizards (including 2 imports), and 39 snakes.

Thirty years of change has also brought a new combination of authors. The 2<sup>nd</sup> edition is dedicated to the memory of three of the original writers: Joseph R. Bailey, Julian R. Harrison III, and Bernard S. Martof. William M. Palmer and photographer Jack Dermid have been involved in both editions. Three new authors of the 2<sup>nd</sup> edition are Jeffrey C. Beane, Alvin L. Braswell, and Joseph C. Mitchell.

The addition of Joe Mitchell is a major plus from the Virginia standpoint. Joe's long-time involvement and experience in Virginia herpetology and the VHS gives the book a fresh perspective. The other authors are all Carolina-based.

Taxonomically, the 2<sup>nd</sup> edition takes a conservative approach, retaining long-standing generic names such as *Bufo*, *Rana*, *Clemmys*, *Cnemidophorus*, *Eumeces*, *Elaphe* and other old favorites. However, in each species account, the proposed new name is also provided (in parenthesis).

The index also matches the new names to the old. As a book designed for a general audience, this is the correct approach. It limits confusion by generally using the same scientific and common names as found in the Peterson field guide and other popular references.

Despite their slightly smaller size, the 2<sup>nd</sup> edition's range maps are an improvement over those in the original book, reflecting thirty years of new distributional and taxonomic data. The maps are much more detailed and refined. In some cases, they are multi-colored, illustrating distributional patterns in the Slimy Salamander Complex, the Jordan's Salamander Complex, and in the Mountain Dusky Salamander Complex. The Physiographic Provinces map is also multi-colored.

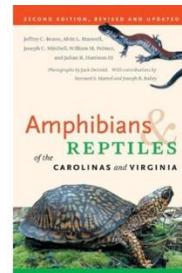
The color photographs are a pleasing blend of old and new. Although most herps are still represented by a single photograph, the 2<sup>nd</sup> edition has added multiple photos for several species and species complexes, to illustrate variations in color and pattern. The inclusion of diagnostic line drawings for some species groups would have been helpful (e.g. skink scales and toad glands) as an identification supplement to the text descriptions. A picture could be worth a dozen words.

The species accounts are also a blend of old and new. For the most part, the original wording of the 1980 edition is retained, with updated data and clarifications blended into the text. Metric measurements are given, with English approximations. A description of the animal follows, with distinguishing characteristics noted. Geographic range and favored habitats are discussed, followed by information about reproduction, feeding, and other aspects of life history.

The introductory chapters have been slightly reworked and contain much useful material. This 2<sup>nd</sup> edition provides updated listings and discussion of the region's imperiled species. Nineteen salamanders, five frogs, one crocodylian, thirteen turtles, three lizards, and eight snakes are currently on state and/or federal lists for the three states. The book also discusses the status of several non-native species that have been reported in the Carolinas and Virginia, but gives full species treatment only to the well-established Texas Horned Lizard and the Mediterranean Gecko.

The 2<sup>nd</sup> edition of ***Amphibians & Reptiles of the Carolinas and Virginia*** is a welcome addition to the Virginia herper's field-pack or library shelf. It is the most up-to-date book of its type available on the market today. Considering all of the recent discoveries and new understandings, this attractive guide is well worth purchasing by anyone interested in our regional herptofauna.

- Mike Clifford, VHS Educational Committee chairman





## NEW BOOKS

- |  |  |
|--|--|
| <p><b>Salamanders of the Southeast (1)</b><br/> <b>The Chinese Alligator: Ecology, Behavior, Conservation, and Culture (2)</b></p> | <p><b>3) The Last Tortoise: A Tale of Extinction in Our Lifetime</b><br/> <b>4) A Turtle Without a Home</b><br/> <b>5) Big Night for Salamanders</b></p> |
|--|--|

### 1) Title: **Salamanders of the Southeast**

Authors: Joe Mitchell and Whit Gibbons

Price: \$18.87 ([University of Georgia Press](#))

Description: Describing 102 species of salamanders occurring in the southeastern United States, ecologists Joe Mitchell and Whit Gibbons provide us with the most comprehensive and authoritative, yet accessible and fun-to-read, guide to these often secretive, always fascinating wonders of nature.

Mitchell and Gibbons enumerate the distinguishing characteristics of salamanders, including how they are different from other amphibians and from reptiles, especially lizards. Also discussed are distribution, habitat, behavior and activity, reproduction, food and feeding, predators and defense, conservation, and taxonomy. Accompanying each account are photographs illustrating typical adults and variations and distribution maps for the Southeast and the United States.

Given that 17 percent of the world's species of salamanders live in the Southeast and the scientific and popular concern for the worldwide decline in amphibian populations in general, *Salamanders of the Southeast* will appeal to people of all ages and levels of knowledge interested in natural history and conservation. The guide will help foster the growing interest in salamanders as well as cultivate a desire to protect and conserve these fascinating amphibians and their habitats.

Features:

- Conservation-oriented approach
- More than 400 color photographs
- 77 distribution maps
- Clear descriptions & photographs of each species
- Sections on biology, worldwide diversity, identification, taxonomy, habitats, & conservation
- "Did You Know?" sidebars of interesting facts

### 2) Title: **The Chinese Alligator: Ecology, Behavior, Conservation, and Culture**

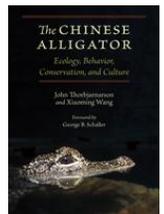
Authors: John Thorbjarnarson and Xiaoming Wang (foreword by George B. Schaller)

Price: \$85.00

Description: Hardcover, by The Johns Hopkins University Press. The rare and endangered Chinese alligator has long held a prominent place in Chinese culture and mythology. Here John Thorbjarnarson and Xiaoming Wang, who have been at the forefront of efforts to conserve these remarkable creatures, provide comprehensive details about the biology, behavior, history, and cultural and conservation significance of the animal thought to be the basis of the Chinese dragon legend.

Though more than 10,000 Chinese alligators live in zoos and breeding facilities, just a few hundred still exist in the wild. Much of their natural habitat has been lost to human development, leaving wild Chinese alligators clinging to small areas where the Yangtze River meets the Pacific Ocean. Thorbjarnarson and Wang recount how and why the species declined to the point where it is perhaps the most threatened of all crocodylians, discuss ongoing conservation works, and project what the future is likely to bring for the Chinese alligator. Their scientific synthesis sits in stark contrast to the alligators' unique relationship with Chinese culture, where folklore views it as a water deity related to dragons.

Illustrated throughout and featuring the most up-to-date biological information available, this volume is a complete overview of the Chinese alligator, a conservation and cultural icon.



### 3) Title: **The Last Tortoise: A Tale of Extinction in Our Lifetime**

Author: Craig B. Stanford

Price: \$23.95 S&H in US only \$6.00 Priority Mail

Description: Hardcover, 2010, Publication date May 15, 2010, Harvard Univ Press, 240 pgs, 20 illus.

Tortoises may be the first family of higher animals to become extinct in the coming decades. They are losing the survival race because of what distinguishes them, in particular their slow, steady pace of life and reproduction.



**The Last Tortoise** offers an introduction to these remarkable animals and the extraordinary adaptations that have allowed them to successfully populate a diverse range of habitats—from deserts to islands to tropical forests. The shields that protect their shoulders and ribs have helped them evade predators. They are also safeguarded by their extreme longevity and long period of fertility. Craig Stanford details how human predation has overcome these evolutionary advantages, extinguishing several species and threatening the remaining forty-five.

At the center of this beautifully written work is Stanford's own research in the Mascarene and Galapagos Islands, where the plight of giant tortoise populations illustrates the threat faced by all tortoises. He addresses unique survival problems, from genetic issues to the costs and benefits of different reproductive strategies. Though the picture Stanford draws is bleak, he offers reason for hope in the face of seemingly inevitable tragedy. Like many intractable environmental problems, extinction is not manifest destiny. Focusing on tortoise nurseries and breeding facilities, the substitution of proxy species for extinct tortoises, and the introduction of species to new environments, Stanford's work makes a persuasive case for the future of the tortoise in all its rich diversity.

**4) Title: A Turtle Without a Home**

Authors: Sharon Gaston and Rich Halttunen

Price: Will be available for purchase upon release date (mid to late August); check the website for price when it is available. Go to <http://www.creativemindspublications.com>

Description: This educational trade book is a fictional story about an Eastern Box Turtle trying to find the perfect habitat. The authors, both educators in the public school system, use vivid vocabulary, child friendly illustrations, and quality text to teach children about turtles and ecosystems. This educational resource is complete with lesson plans to use in the classroom. As an elementary school literacy specialist, I understand the importance of providing our students with quality literature that teach a lesson as well as factual information. As the publisher, I know how valuable a children's book like "A Turtle Without a Home" can be for children, teachers, and educators. We need to expose our young children to important subjects, such as turtle conservation. I appreciate your interest in this resource and look forward to hearing from you.  
- Kathryn Starke (publisher)

Ted the Turtle searches for the perfect home after his habitat has been polluted. He explores where ants, squirrels, and other animals live in nature. This children's book exposes children to environmental issues, such as turtle conservation, ecosystems, and litter prevention.

**5) Title: Big Night for Salamanders**

Author: Sarah Lamstein

Price: \$9.00 to \$14.00 (Amazon.com)

Description: A children's book that tells the story of the happy intersection of a boy and spotted salamanders on Big Night. 40 pages. (art by Carol Benioff, Boyds Mills Press)

To view trailer visit website: [www.sarahlamstein.com](http://www.sarahlamstein.com)

*The text elegantly blends fiction and nonfiction...the use of present tense lends immediacy and suspense to the tale...an excellent addition to science units.* --**School Library Journal**

## ONLINE RESOURCES

**What's Killing the Sea Turtles (1  
The Green Turtle & Hawksbill  
(Reptilia:Cheloniidae) (2**

**3) A Critique of the Analysis Used to Predict  
Climate Space of Burmese Python in the U.S.  
4) Gulf Coast Oil Spill Website and Listserv**

**1) What's Killing the Sea Turtles**

Amazing video on the New York Times' home page:

<http://video.nytimes.com/video/2010/07/14/science/earth/1247468438688/what-s-killing-the-sea-turtles.html>

**2) The Green Turtle & Hawksbill (Reptilia:Cheloniidae): World Status, Exploitation & Trade**

The following book has recently become available online and as it is one of the classics that is out of print and I am often being asked for it, I thought I would share my discovery with you!



Groombridge and Luxmoore 1989. The Green Turtle and Hawksbill (Reptilia:Cheloniidae): world status, exploitation and trade.

<http://www.archive.org/details/greenturtlehawks89grou>

Easy to view online but pdf is 15MB! From - Annette C. Broderick/Lecturer in Conservation/Centre for Ecology and Conservation School of Biosciences/University of Exeter/Cornwall Campus/Penryn, TR10 9EZ, UK

### 3) A Critique of the Analysis Used to Predict the Climate Space of the Burmese Python in the United States

New Paper: A Critique of the Analysis Used to Predict the Climate Space of the Burmese Python in the United States by Rodda et al. (2008, 2009) and Reed and Rodda (2009) by Dave and Tracey Barker.

[http://www.vpi.com/sites/vpi.com/files/Barkers\\_DataSetCritique-002.pdf](http://www.vpi.com/sites/vpi.com/files/Barkers_DataSetCritique-002.pdf)

(Published in Chicago Herpetological Society Journal which is not peer reviewed. It is available at the above website

### 4) Gulf Coast Oil Spill Website and Listserv

New website and listserv [www.Gturtle.net](http://www.Gturtle.net) and an associated listserv concerning Gulf Coast Oil Spill -. If you'd like to contribute relevant links, information, publications, reports tracks, photos or be added to the listserv, please visit the site. To contribute new photos, log in to your existing [seaturtle.org](http://seaturtle.org) acct, or make a new one.

## NEWS

Meet Some Commonly Seen Turtles Native to Virginia (1

2) Searching for Evasive Spotted Salamanders  
3) For Those Who Flip A Lot Of Rocks...

### 1) Meet Some Commonly Seen Turtles Native to Virginia

\*VHS's own President, Kory Steele, is featured in this news article\*

*This article was in the Daily Press (dailypress.com) on June 19, 2010, and was written by Kathy Van Mullekom*

Kory Steele keeps three box turtles within the confines of a habitat he created in the back yard of his Newport News home. They stay in his protective custody because, for various reasons, they can't survive in the wild.

"Watch this," says Kory, picking up a large strawberry from a small container of fruit. He places the strawberry where one of the turtles easily sees it. The usually slow turtle turns turbo, stretching and stretching her rubber-like, long neck to nibble, nibble, and nibble some more. When Kory moves the strawberry, the turtle scrambles to stay with it. "When she gets going, she won't even stop to swallow the first bite," he says, laughing. Within minutes, most of the strawberry is gone, and the turtle throttles her appetite into low gear. She's had enough for now, but she still watches what little strawberry Kory still holds. "I can chop up veggies and strawberries, and they will pick the strawberry out," he says.

The eastern box turtle is Virginia's only terrestrial turtle; all others are aquatic, according to Kory, who is president of the Virginia Herpetological Society. "Not every turtle you see is a snapping turtle," he says. "We have about 20 species of turtles native to Virginia, not including sea turtles."

How can homeowners help turtles who may cross their paths? Inspect an area before you run the lawn mower, Kory suggests. A lot of box turtles suffer horrific injuries and deaths from lawn mowers. To help aquatic turtles, stop using fertilizers, herbicides, and pesticides because they can run off into bodies of water where those turtles live. And, please, stop your dog from digging up turtle eggs. "If you live on a private pond, placing a downed tree partially into the water benefits the aquatic turtles greatly," he says. "In some habitats, the number of turtles far out number the basking sites for them to get warm in the sun."

Here's what Kory says about five commonly seen native turtles; you can also see and learn about them at the Virginia Living Museum in Newport News.

**Box turtle:** Eastern box turtles are known to live their entire lives in an area the size of a football field, and are very aware of when they can find water and which fruits ripen at certain times of the year. Box turtles grow slowly and have late maturation, which doesn't help their population numbers since it is



difficult to replace an adult turtle that has been killed. Box turtles suffer from a number of problems including natural disease (although environmental stressors contribute), winter mortality (freezing while hibernating), road mortality (since they spend more time on land than other turtles), and removal for the pet trade. Box turtles in Virginia are probably in decline, although there isn't any specific study that has proven so. All evidence points towards a population decline in most suburban areas. Also, there are an abundance of nonreleasable turtles with rescue organizations around the country. There really isn't any reason to take a turtle out of the wild when there is one at a rescue waiting for a good home.

**Eastern painted turtle:** I call painted turtles the "basking buddies" for the redbelly cooter since they are almost always seen together out basking on logs. Most people mistake painted turtles as being baby turtles of the larger turtles, but they are full size at 4-6 inches. They also are the most colorful, and are the only Virginia turtle with both yellow and red stripes on their neck.

**Redbelly cooter turtle:** Of any of the turtles you'll see basking on a log, this will be the largest and one of the most common. This species can grow to dinner plate size, 10 to 12 inches long in shell length. They are known for being mostly herbivorous as they get to adult age and their beak has been modified with serrated edges to cut like a knife. These turtles are important because they keep our reservoirs from getting choked with aquatic plants. These turtles can be seen in late summer chomping at the duckweed on the surface of the pond by the aviary at the Virginia Living Museum. The redbelly, too, has benefited from man's pond creations, but continues to have problems crossing man's many roads.

**Snapping turtle:** This is probably Virginia's most misunderstood turtle. Most people's only exposure to this animal is a female on land trying to find a place to dig a nest. It should be understandable that an animal that spends 95 percent of its life in water would be a little scared about coming out onto land. Snapping turtles are not nearly as defensive in water. They have been studied and shown that they don't significantly impact fish or bird populations, mostly because they only prey upon diseased, weak, or very young animals. In fact, snapping turtles are very herbivorous. Researchers have found snapping turtles with more than a pound of corn and more than 100 muscadine grapes in their stomachs! I have personally observed snapping turtles eating *Peltandra virginica*, or green arrow arum, at Newport News Park. Chances are that snapping turtles have benefited from human habitation because we have dammed up streams and created ponds where there were none. However, road mortality is the biggest problem for the species.

**Diamondback terrapins:** Diamondback terrapins are the only turtle in the United States that solely inhabits brackish waters. These are also one of the most charismatic turtles we have in Virginia with a big personality and white and black polka-dotted skin to match. Terrapins suffered a population collapse 100 years ago when turtle soup was popular, and without any regulations, they were so severely overfished that the entire industry shut down. It is now illegal to possess a diamondback terrapin without a permit from the Virginia Department of Game and Inland Fisheries. Now they are suffering from decline and in a number of areas. The Virginia Institute of Marine Science is closely looking at the effects of the accidental capture of diamondback terrapins in crab pots. Since turtles need air to breathe, they will drown within an hour of being trapped. "Ghost traps" are especially effective at capturing large numbers of diamondback terrapins and drowning them. Terrapins also suffer high mortality even in remote areas. Since raccoons are likely in higher numbers now than when the country was started, female terrapins have a very difficult time crawling out of the water and laying their eggs without their nests or themselves getting eaten by the raccoons.

**Turtle totals:** Virginia Living Museum biologists and middle-school age participants will ID, weigh, mark and release turtles during a turtle population field study at Deer Park Lake in Newport News 6-8 p.m. June 28, July 26, and Aug.30. Cost: \$120; register at 595-9135.

**Online:**

- See a video of Kory Steele feeding a strawberry to his box turtle at <http://www.dailypress.com>
- Learn about Virginia's turtles, frogs and toads, salamanders, lizards, and snakes through the Virginia Herpetological Society at <http://www.vahepsociety.com>.

**Turtle Trivia:**

- Turtles do not come out of their shells, but grow with their shells. A turtle shell is modified ribs and spine, and is a living material capable of pain reception and growth.
- If a turtle is crossing a busy road, pick it up and send it in the same direction it was going; if you try to make it go back, it will turn right around again.
- Turtles do not make good pets. They need food diversity and sunshine to maintain proper growth. You cannot release a pet turtle when you can no longer care for it because it's illegal in Virginia. Dimstore turtles, such as the red-eared slider and other non-native turtles, like the



map and soft-shelled turtles, have been seen in Lake Maury in Newport News where they out compete native turtles for food and other resources.

- *Kory Steele, President of the Virginia Herpetological Society*

## 2) Searching for Evasive Spotted Salamanders

\*VHS's own Research Committee Chair, Dr. Joy Ware is featured in this news article\*

Published on [HamptonRoads.com](http://HamptonRoads.com) | [PilotOnline.com](http://PilotOnline.com) (<http://www.link757.com>) by Diane Tennant

Anne Wright reached into a bucket of salamanders, said "slimy," and pulled one out anyway just as a gust of wind kicked up across the tailgate of her truck. "Doggone it, I thought it was supposed to be warm today!" she exclaimed. Beside her, Joy Ware cooed to the salamander as she stroked his tummy with a cotton swab. "It's OK, baby."

It was OK, because this one had been captured by two professors at Virginia Commonwealth University who think the salamander is, in general, undervalued by the public. With their research, they hope to answer a lot of questions. The big one is: What's it worth to you?

The spotted salamander is purplish brown with blue speckles on its flanks and bright yellow-green spots down its back. In its coat of many colors, it manages to be nearly invisible in the forest except for one time a year, when the white-hot heat of passion leads to the great salamander migration.

Up out of the ground they come, from the mole tunnels and subterranean burrows where they live, to troop up to half a mile looking for a pool of water. But because they migrate at night, in the rain, few people ever see them, though there may be thousands on the move, first in January, then early March.

They travel to vernal pools, which are temporary puddles in the woods. These pools fill up during winter rains, hang around as long as the water table is high, and dry up after the trees leaf out and start drawing moisture into their roots.

While they exist, these vernal pools are nurseries for frogs, toads, salamanders, insects - many, many creatures that lay their eggs in water. Drought years and drainage projects are hard on amphibians, but this winter has left numerous tea-colored pools in the woods around VCU's field station near Charles City, the Rice Center for Environmental Life Sciences.

Wright was unable to be in the woods when the last nor'easter came through on a Monday night, so she missed what could have been the big migration. But late in the day on the following Tuesday, when the forest floor was still soggy and the pools were full, the biology professor laid her traps, and, on Wednesday morning, she had salamanders.

Ralph White, the manager and naturalist of the James River Park System in Richmond, actually closes a road sometimes to protect migrating salamanders. "We do the best we can for safe salamander sex," he said. "Males wait for a real gully-washer. Then it's like going down to Fort Lauderdale: Where are all the chicks? Where's all the action? They go running down the hillsides and some move along the road, because they can go faster." After a VCU student counted 40 dead salamanders on a little stretch of road one morning, White began watching the weather forecast and closing a part of Riverside Drive on cool rainy nights in late winter. Spectators watch the migration, if White can pinpoint the right conditions and make an announcement in time. But most people have never seen, or even heard of, the spotted salamander. "They live either underground or under the litter on the forest floor, and you will never see them," Wright said. "Rarely, rarely will you see them."

That is pretty remarkable, considering their looks and size - up to 9 inches long. The easiest way to find some, other than standing in the woods in the cold rain on a dark night and crossing your fingers, is in a crayfish trap. And, really, that only works when the weather is just bad enough to make them amorous.

"There's three in there, I think," Ware said, standing in water up to her knees and peering into a flask-shaped trap. "Four," Wright said, picking out the dark shapes against the black mesh. She eased one out. It lay quietly on her palm. "I want to look at his toes," Ware said, and did. "He's got all of them, five on the back, four on the front. Let me swab him." Ware directs the conservation medicine program at VCU, which examines the interaction of wildlife, human and environmental health. "Wildlife health is not only an indicator of something that could be transmitted to us, they indicate the quality of the environment as well," Ware said. "Amphibians are not appreciated - I happen to love them - but reptiles and amphibians are important to human health." For example, she said, frogs have antimicrobial skin, which has contributed to the development of human health products, and the venom of copperhead snakes contains a substance that inhibits the growth of breast cancer cells. So she examines salamanders. "We look at them to see if any of them have malformations," she said. "Those are good environmental indicators. If it ever got above 3 percent, I'd be concerned." With the swabs, Ware was testing for the chytrid fungus, responsible for frog



and amphibian deaths and extinctions worldwide. So far, the Rice Center land has been clean, although frogs at the fish hatchery across the road have been found with a deadly virus.

Wright weighed Baby, measured him, and put him in a second bucket that held, in a few cupfuls of leaf-stained water, some bugs and five larvae of another species, the marbled salamander. The larvae looked like big black tadpoles, more or less, until you saw the four legs and the gills like feather boas around their necks. "Once you become sort of a connoisseur, they don't look anything like tadpoles," Wright said. Spotted salamander larvae look like Pixar creatures when viewed head on, pinkish with pin-dot eyes and absurdly large smiles, and a salmon-colored boa. When their pool starts to dry up in late spring, they will absorb the gills and walk up onto land as adults. Until then, they are prey for the black marbled larvae. It's a salamander-eat-salamander world out there in the woods.

Vernal pools are not protected wetlands in Virginia. They are temporary, small and scattered. Yet a salamander is only as good as his pool, without which he would be not only sad and lonely but eventually extinct. Salamanders cannot lay eggs in permanent bodies of water. "They have no defenses at all against fish," Wright explained. "They evolved in these temporary pools."

She pulled another specimen out of the bucket. "Wow," she said. "Look at the spot pattern on this guy." She photographed each salamander, hoping to track individuals over time and see whether they favor certain pools. "It's OK, baby," Ware said again. "Usually, she calls them Babette," Wright said. "I think this one is a male," Ware replied, but Wright weighed it to be sure. Females are heavier than males. Ware wiped Babette's tummy and the bottoms of her feet with a swab, 25 strokes per animal. Each swab went into a labeled test tube. "Boy, my hands are cold," Wright exclaimed, and after the salamanders had been returned to the first pool, the professors moved to the next one. The most they've ever caught in one trap was 50, but this time it was just three.

"In their right habitat, they will make up the largest biomass in a forest," Wright said, "which means there are more salamanders, by weight, in a forested area than there are any other vertebrates, including deer. To have that many of them, they must be having a pretty big impact on the processes that go on in the forest." And yet they are, largely, unknown.

A spotted salamander is the emblem of the Friends of the James River Park. But White has not had to close the Richmond road this month, partly because the weather has been too cold and snowy for the mass migration and partly because the salamanders' breeding pool was drained after a nearby resident complained that mosquitoes could breed there, too. A replacement pool has been established about 50 feet away, but White has seen no salamanders there. Most people enjoyed the migration, he said, and as they began to observe their riverside neighbors - eagles, herons, salamanders - attitudes changed. "In communities where people care about nature, they tend to care about people, too," White said. "People are not trashing the place. They're not leaving litter. They're not getting in fights." The river's previous reputation as a place to get drunk and smash glass, he said, has been replaced by appreciation. "That's why I like the salamanders, because they are the symbol of this change," he said, "and they also played a role in it."

If all the salamanders disappeared from the woods, no one knows what would happen. "We might miss them very much after a while," Wright said, as she measured one. "They're thought to have a big impact on the insect population in forests, and that, in turn, would have an impact on the breakdown of organic material like leaves and logs. They may be playing a big role in the whole way that the forest is functioning." But no pools, no salamanders. Twenty-one years ago, a VCU professor surveyed vernal pools in Virginia for water chemistry and fauna. Wright has applied for a grant to update that study, to see what has changed and whether the pools still exist. "We're thinking a number of them will probably be gone," she said. Not everyone loves a pool of rainwater. Fewer still love salamanders.

"We can't really point and say, 'They do this! Therefore we need to value them,' " Wright said. "They probably do play a big role in the forest because there's so many of them, but we're not sure what would happen if they weren't there." She held one up to see it better. "They're cute. They're very charismatic. They're beautiful, actually," she said. "Once you see them, you'll want them around just because they look so cool." The salamander squirmed. "Come on, baby," Ware coaxed. "Cold hands!" Wright said, holding tight. "Slimy." But totally worth it.

*Diane Tennant, (757) 446-2478, [diane.tennant@pilotonline.com](mailto:diane.tennant@pilotonline.com)*

Source URL (retrieved on 03/15/2010 - 04:03): <http://www.link757.com/2010/03/searching-evasive-spotted-salamanders>

### **3) For Those Who Flip A Lot Of Rocks...**

Interesting study from Australia (by David Pike) demonstrating the negative effects of moving cover materials and not replacing them.



Be sure to practice proper field etiquette as it certainly looks like replacing rocks and logs is important from a habitat perspective (most of you probably already do this anyway). Jeff Hall/Partners in Amphibian & Reptile Conservation Biologist/NC Wildlife Resources Commission/405 Lancelot Drive/Greenville, NC 27858 cell: 252-917-1683/<http://www.ncparc.org>  
<http://www.conservationmaven.com/frontpage/when-habitat-destruction-is-extremely-subtle.html>

When it comes to habitat destruction, startling events like oil spills and deforestation are certain to grab the headlines. Yet as a new study in the journal *Animal Conservation* shows, sometimes habitat destruction can be so subtle that it passes under the eyes of all but the most astute scientists.

David Pike and fellow researchers from the University of Sydney look at the case of reptiles in outcrops and find that people moving rocks less than 30 centimeters out of place can ruin the habitat for species like the endangered broad-headed snake that shelter in narrow crevices. This impact to rocky environments is widespread across the world, particularly from reptile enthusiasts, researchers, and collectors who move rocks slightly out of place to search for their favorite species. With an elaborate experimental design, Pike and his team were able to show that altering the position of rocks negatively impacts reptile habitat by modifying crevice microconditions that species prefer. The study also demonstrated that the impact is easily reversible by restoring the rocks to their original position.

The researchers surveyed for lizards in Morton National Park in southeastern Australia under previously disturbed and undisturbed rocks. Disturbed rocks are easily identifiable because they normally fit flush with underlying substrate (i.e. they do not wobble when pushed) and displacement usually leaves a light colored "scar." The researchers found that broad-headed snakes and their prey, velvet geckos, were much less likely to be found under disturbed rocks. The scientists also conducted a field experiment in which they found 26 pairs of previously disturbed rocks and returned one rock from each pair to its original setting. They found the restored rocks harbored a much greater number of reptiles, showing that the impact is easily reversible. It also provides evidence that changes in the crevice habitat itself cause the decreased reptile numbers under disturbed rocks rather than people scaring the animals or collecting them.

To understand how rock displacement alters habitat microconditions, the researchers took life-sized casts of the crevices under disturbed and restored rocks and compared the differences in surface area. They also placed data loggers in the crevices over a period of time to compare differences in microclimatic conditions. The researchers found that restoration increased crevice surface area by 59% and raised mean daily minimum temperatures.

The findings from this study will hopefully raise awareness among resource managers in rocky environments to warn hikers and reptile enthusiasts in particular against displacing rocks from their original setting. As the study shows, sometimes the ideal habitat for species forms over geological time and can be destroyed in the matter of a second by an act as subtle as moving a rock a few centimeters out of place.

v by Rob Goldstein. This article was also written for EcoTone, a blog produced by the Ecological Society of America. EcoTone showcases ecology and ecologists, focusing on ecological science in the news and its use in policy and education.

v Pike, D., Croak, B., Webb, J., & Shine, R. (2010). Subtle - but easily reversible - anthropogenic disturbance seriously degrades habitat quality for rock-dwelling reptiles *Animal Conservation* DOI: 10.1111/j.1469-1795.2010.00356.x

## VIRGINIA LITERATURE

These selections represent articles published or in press during the period August 2009 to January 2010. Included articles are focused on (1) studies performed within Virginia, (2) studies on reptiles or amphibians native to Virginia, or (3) additional herpetological topics that are of general interest. Compiled by Susan Watson.

Francl, Karen E.;  
 Faidley, Clayton R.;  
 Small, Christine J.  
 2010. Salamander Use  
 of Karst Sinkholes in  
 Montgomery  
 County, *Virginia*.  
 Southeastern  
 Naturalist, Vol. 9 Issue 1, p35, 12p.



Bergeron, Christine M.; Bodinof,  
 Catherine M.; Unrine, Jason M.; Hopkins,  
 William A. 2010. Mercury accumulation  
 along a contamination gradient and  
 nondestructive indices of  
 bioaccumulation in amphibians.  
*Environmental Toxicology & Chemistry*;  
 Apr2010, Vol. 29 Issue 4, p980, 9p.



Hossack, Blake R., Michael J. Adams, Evan H. Campbell Grant, Christopher A. Pearl, James B. Bettaso, William J. Barichivich, Winsor H. Lowe, Kimberly True, Joy L. Ware and Paul Stephen Corn. 2010. Low prevalence of chytrid fungus (*Batrachochytrium dendrobatidis*) in amphibians of U.S. headwater streams. *Journal of Herpetology*. 44 (2): 253-260. [[blake\\_hollack@usgs.gov](mailto:blake_hollack@usgs.gov)]

Tuttle, Jacob and David Rostal. 2010. Effects of Nest Relocation on Nest Temperature and Embryonic Development of Loggerhead Sea Turtles (*Caretta caretta*). *Chelonian Conservation and Biology*, Vol. 9, No. 1: 1-7.

Strickland, Jeramie T. and Fredric J. Janzen. 2010. Impacts of Anthropogenic Structures on Predation of Painted Turtle (*Chrysemys picta*) Nests. *Chelonian Conservation and Biology*, Vol. 9, No. 1: 131-135.

Barrett, K., C. Guyer and D. Watson. 2010. Water from urban streams slows growth and speeds metamorphosis in Fowler's toad (*Bufo fowleri*) larvae. *Journal of Herpetology*.

44 (2): 297-300. [[kbarrett@warnell.uga.edu](mailto:kbarrett@warnell.uga.edu)]

Earl, Julia E. and Howard H. Whiteman. 2010. Evaluation of phosphate toxicity in Cope's gray treefrog (*Hyla chrysoscelis*) tadpoles. *Journal of Herpetology*. 44 (2): 201-208. [[jee9rb@mizzou.edu](mailto:jee9rb@mizzou.edu)]

Jones, Lisa, Dalton R. Gossett, Stephen W. Banks and Malcolm L. McCallum. 2010. Antioxidant defense system in tadpoles of the American bullfrog (*Lithobates catesbeianus*) exposed to Paraquat. *Journal of Herpetology*. 44 (2): 222-228. [[malcolm.mccallum@herpconbio.org](mailto:malcolm.mccallum@herpconbio.org)]

Langkilde, T. and K. E. Boronow. 2010. Color as a signal: the relationship between coloration and morphology in male eastern fence lizards, *Sceloporus undulatus*. *Journal of Herpetology*. 44 (2): 261-271. [[tll30@psu.edu](mailto:tll30@psu.edu)]

Litzgus, Jacqueline D. and Sheila E. Smith. 2010. Geographic variation in sexual size dimorphism in painted turtles (*Chrysemys picta*). *Journal of Herpetology*. 44 (2): 320-326. [[jlitzgus@larentian.ca](mailto:jlitzgus@larentian.ca)]

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***There is no better high than discovery. -E. O. Wilson***

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Answers from page 5

## HERP TRIVIA ANSWERS

1. Which two physiographic provinces border the Piedmont of Virginia?
  - Blue Ridge and Coastal Plain.
2. The Virginia Herpetological Society was the first organization of its kind in the Carolinas and Virginia. In what year was it organized?
  - 1958.
3. What class of animals evolved from fishes in the Devonian times to become the first land-dwelling vertebrates?
  - Amphibians.
4. Which two species of sirens are native to Virginia?
  - Greater Siren (*Siren lacertina*) & Eastern Lesser Siren (*Siren intermedia intermedia*).
5. What are Virginia's two most geographically widespread members of the genus *Ambystoma*?
  - Spotted Salamander (*Ambystoma maculatum*) & Marbled Salamander (*Ambystoma opacum*).
6. Which Virginia salamander is dorsoventrally flattened, with green or yellowish green, lichen-like patches?



- Green Salamander (*Aneides aeneus*).
7. Which Virginia salamander often folds a leaf around each of its eggs, thus hiding it from view?
    - Eastern Newt (*Notophthalmus viridescens viridescens*).
  8. Which is the earliest breeding of Virginia's true toads (*Anaxyrus*, formerly *Bufo*)?
    - American Toad (*Anaxyrus americanus*).
  9. Which species is Virginia's largest treefrog?
    - Barking Treefrog (*Hyla gratiosa*).
  10. Which of Virginia's two sibling gray treefrogs has 24 chromosomes?
    - Cope's Gray Treefrog (*Hyla chrysoscelis*).
  11. What Virginia freshwater turtle attains weights over 50 pounds?
    - Eastern Snapping Turtle (*Chelydra serpentina serpentina*).
  12. What distributional feature do the Spiny Softshell, the Stripe-necked Musk Turtle, the Common Map Turtle, and the Cumberland Slider have in common?
    - In Virginia, they are native only to the far southwestern region of the state.
  13. What species is Virginia's largest turtle?
    - Leatherback Sea Turtle (*Dermochelys coriacea*).
  14. What are the two most widespread lizard species in Virginia?
    - Eastern Fence Lizard (*Sceloporus undulatus*) & Common Five-lined Skink (*Plestiodon fasciatus*).
  15. What are the two least widespread lizard species in Virginia?
    - Eastern Glass Lizard (*Ophisaurus ventralis*) & Mediterranean Gecko (*Hemidactylus turcicus*).
  16. What is Virginia's rarest species of skink?
    - Northern Coal Skink (*Plestiodon anthracinus anthracinus*).
  17. How many species of snakes are native to Virginia?
    - 30 species (not including subspecies).
  18. The adults of what Virginia snake feed mostly on eels?
    - Rainbow Snake (*Farancia erytrogramma erytrogramma*).
  19. Crayfish are the favorite food of which two Virginia snakes?
    - Queen Snake (*Regina septemvittata septemvittata*) and Glossy Crayfish Snake (*Regina rigida rigida*).
  20. What is the most widespread of Virginia's venomous snakes?
    - Northern Copperhead (*Agkistrodon contortrix mokasen*).



Send suggestions for Herp Trivia to newsletter editor, Susan Watson, [shwatson8888@yahoo.com](mailto:shwatson8888@yahoo.com).





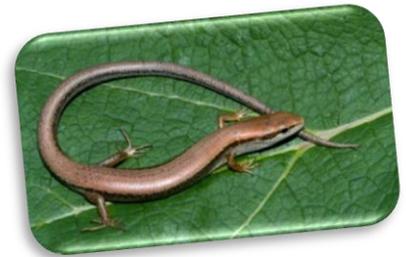
## VIRGINIA NATIVE

The purpose of **Virginia Native** is to highlight native species that are deserving of recognition. Additional information can be found on the website of the Virginia Department of Game and Inland Fisheries (VDGIF). <http://www.dgif.virginia.gov/wildlife/information>.

### little brown skink (*Scincella lateralis*)

#### Characteristics

This is a small, slender skink with an unusually long tail. It grows to a maximum snout-vent length of 57 mm (2.2 in) and a total length of 146 mm (5.7 in). The body scales are smooth, shiny, and overlapping. Its color varies from light golden tan to dark coppery brown, with a narrow, dark brown stripe on each side. The belly is pale cream or yellow to light gray or white, with lighter areas on the chin and at the waist. The legs are small, and the head is narrow compared to other species of skinks. The tail breaks off easily when the skink is captured or threatened by a predator. Regenerated tails are light brown. No other Virginia lizard has the transparent window in each eyelid. Unlike lizards in the genera *Plestiodon* and *Ophisaurus*, female little brown skinks do not remain with their eggs after laying.

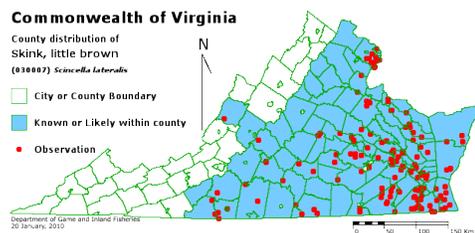


#### Distribution

This species is widely distributed in the coastal plain and piedmont of Virginia. It is not common in higher elevations. It inhabits hardwood and mixed hardwood forests, living in the leaf litter on the forest floor. It may be found in urban and suburban areas like woodlots, vacant lots, alongside buildings, and under boards.

#### Foods

Ground skinks forage under leaves and debris and in grass for small invertebrates. Specimens from Virginia had eaten wood boring beetles, wood roaches, ants, leafhoppers, butterfly larvae and adults, unidentified spiders, and isopods.



**Common Name:** Little Brown Skink

**Scientific Name:** *Scincella lateralis*

**Genus:** *Scincella* is from the Greek word *scincus* meaning "a kind of lizard".

**Species:** *lateralis* is Latin for "of the side", referring to the dark lateral stripes.

**Average Length:** 3 - 5.75 in. (7.5 - 14.6 cm)

**Virginia Record Length:** 5.3 in. (13.5 cm)

**Record length:** 5.75 in. (14.6 cm)