



Virginia Herpetological Society

Newsletter

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Home Page: <http://www.vaherpsociety.com>
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VHS Business

- 1) Fall Meeting
- 2) Website Updates
- 3) Snake Lesion Study
- 4) Photo Contest for the 2008 VHS Calendar

1) Fall Meeting, October 20, 2007

Location: Virginia Commonwealth University, Eugene P. and Lois E. Trani Center for Life Sciences.

<http://www.vcu.edu/maps/acmap/trani/lifescfifuture.htm>

Date: Saturday October 20, 2007

Parking: Parking is free along the streets near the Trani building or \$5.00 all day parking in the VCU parking decks about a block from the Trani Center for Life Sciences. There are two decks, the West Main Street Parking Deck and the West Cary Street Parking Deck. A map of these and the Trani Center can be found at this website <http://www.vcu.edu/maps/acmap/acmapov/j.htm>

Directions: Driving directions can be found at VCU's directions website

<http://www.vcu.edu/maps/acmap/acmapd.php>

Cost: Registration is \$8.25 which will include a box lunch, drinks, and snacks. If you don't want lunch cost is free. Please fill out and send in a registration form.

Symposium Events

The 49th annual VHS fall symposium will be very special this year. We will have a paper and poster session for students with monetary prizes for the best research (see explanations and directions below). We will be giving a lifetime achievement award to **Dr. Joe Mitchell**, for his many years of dedicated service to the VHS and herpetology in Virginia. As usual we will have presentations, the member of the year award, a live and silent auction, a business meeting, and elections for all offices. Most exciting though will be our keynote speaker. We are very happy to announce that **Dr. Whit Gibbons** has agreed to be our keynote speaker this year. Whit Gibbons is a professor of ecology at the University of Georgia and former head of the Environmental Outreach and Education program at the Savannah River Ecology Laboratory. He is author or editor of 11 books on herpetology and ecology and has published more than 200 articles in scientific journals. <http://www.uga.edu/srelherp/staff/WGibbons.htm>

Franklin J. Tobey Award

During the annual fall symposium the Virginia Herpetological Society will award first, second, and third place monetary prizes for the best student posters. First place will be awarded \$100.00, second \$50.00 and third \$25.00. This award is named for the society's first lifetime achievement award winner and a co-founder of the VHS, Franklin J. Tobey. To be eligible for this competition students must be the first author and presenter, must submit an abstract 2 weeks before the meeting, and be a high school, undergraduate, or graduate student. Judges will use a rubric similar to one used in judging posters for the SSAR competition. This rubric will include the following criteria: introduction, methods, data analysis and interpretation, conclusions, innovation, originality, scientific significance, presentation and graphic design. Each criterion will be rated from 0 to 10 points. Posters must be smaller than six feet horizontally and four feet vertically. Fifteen posters is the maximum the facility will hold so the first fifteen abstracts will be the only ones accepted.

Richard L. Hoffman Award

The annual fall symposium will also award the best oral paper presentation. A monetary prize of \$150.00 will be awarded to the best paper presentation. This award is named in honor of the second lifetime achievement award winner, Richard L. Hoffman for his service to the Virginia Herpetological Society and herpetology in Virginia. To be eligible for this competition students must be the first author and presenter, must submit an abstract 2 weeks before the meeting, and be a high school, undergraduate, or graduate student. Judges will use a rubric similar to one used in judging oral presentations for the SSAR competition. This rubric will include the following criteria: introduction, methods, data analysis and interpretation, conclusions, innovation, originality, scientific significance, presentation and design. Each criterion will be rated from 0 to 10 points.

2) Website Updates

Webmaster John White offers the recent additions to the VHS Website: www.vahepsociety.com

1. Photos from the 2007 Herp Blitz, BioBlitz, Annual Survey, Reptile Day and Camp Ottari have been added.
2. Historical documents of the VHS. http://fwie.fw.vt.edu/VHS/vhs_history.htm

Nearly all of the VHS's past bulletins and journals have been laboriously scanned into pdf format by Paul Sattler and his colleagues, from the inception of the VHS in 1958 to 2005. If you happen to have one of the missing publications, please contact Paul at pwsattle@liberty.edu.



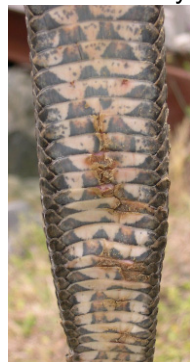
Group photo from the Annual Survey at the New Kent Conference Center.

3) Snake Lesion Study

SNAKE FORCE ONE Continues to Strike!

Snake Force One, a group of dedicated snake lovers, completed their second spring survey and examination of snakes for external skin lesions and disease at three area National Wildlife Refuges this year. The refuges surveyed were Rappahannock River Valley National Wildlife Refuge (NWR) (Wilna Pond and Tayloe Units), James River NWR, and the Presquile Island NWR. In addition to examining the snakes and, where appropriate, performing biopsies, we also initiated PIT-tagging of those snakes that were large enough to tag. This spring we PIT tagged 18 snakes at RRV-NWR, 6 at JR-NWR, and 4 at Presquile Island NWR. As an example of some of our findings, the photograph below is a northern watersnake first captured on April 14, 2007 and tagged. The snake exhibited 18 ventral lesions and was emaciated. Three weeks later, we re-caught him, and at this time he was in worse health. In addition to his previous problems, something had bitten his tail off just below his cloaca.

Snake Force One consists of both the baseline team (who participate in almost all surveys) and those who may only be able to join us a few times. We welcome all fellow snake-enthusiasts, whether you can join once or all the time! Participants have included: **John Agee, Jeanie Bishop, Patricia Crane, Larry Mendoza, Leeanna Pletcher, Justin Pletcher, Scott Duncan, Joy Ware, Susan Watson, Kory Steele, Ken Yanek, John Kleopfer, Mun, Nick & Tim Christensen, Emily & Elijah Cole, Mike Rosati, Brian Cutler, Greg Cutler, Laurie Cutler, Mike Rosati, Rebecca Parada Rivera, Catherine Tucker, and Kyle and Gavin Rogers.**



We have also discovered a novel way to identify black racer snakes: if they bite Tim Christensen, they are Racers! We have yet to determine why they enjoy nipping him so much....

In the fall we will return to the refuges again to continue the project. If you think that you may wish to join us in September or October, please email Joy Ware at jware@mcvh-vcu.edu.

4) Photo Contest for the 2008 VHS Calendar

We are currently accepting photographic submissions for the 2008 VHS calendar. I will be accepting submissions until September 1, 2007, so be sure to send any pictures you wish to submit right away. There is no limit this year on the amount of submissions one can send in, and all current members are eligible to

submit material. All images submitted will need to be high resolution JPG files, and they must be at a minimum of 2000 pixels in width and 1500 pixels in height or larger. If you are unsure about these requirements, feel free to email me and I'll be happy to help you.

I am also wishing to speak with any members who would be interested in preordering their calendar to be available for pick up at the upcoming VHS symposium. If there are enough interested members then we all gain by saving on the price of the calendar and shipping costs. There were only two calendars available at last year's fall meeting, and they were both very popular items in the auction. Please email me right away if you're interested so I can get a count



Patricia Crane

patticrane@gmail.com

VHS Store Committee

Herp Trivia

1. "Cold blooded" is an outdated term for temperature regulation by herps, what is the proper term? Endothermy or ectothermy?
2. Who provided some of the earliest recorded observations of herps in Virginia?
3. How long has the VHS been active?
4. What is the only Virginia herp to inhabit brackish waters?
5. Native Americans used to use what kind of snake to adorn their ear lobes?
6. What herp species are illegal to possess in Virginia?
7. What does the term "hepatic piston" refer to? *Hint: Hepatic = liver.*
8. True or False? Reptile kidneys (except turtles) are unable to produce liquid urine more concentrated than their body fluid. This is because they lack a specialized structure present in the nephrons of birds and mammals, called a Loop of Henle.
9. What Virginia native is capable of producing the strongest known vomit inducing chemical? It is also a potent neurotoxin with no known antidote, blocks action potentials in nerves, and is actually the product of certain bacteria.

Answers can be found on page 15

Events

- | | |
|--|--------------------------|
| 1) Vernal Pond Workshop | 3) Reptile Expos |
| 2) Symposium in Honor of Richard Hoffman | 4) NEPARC Annual Meeting |

1) Vernal Pond Workshop, Sept 28-30, 2007

Sweet Briar College and the Virginia Vernal Pools Campaign are pleased to announce an Isolated Wetlands Conference & Vernal Pond Building Workshop

Featuring Mr. Tom Biebighauser,
 Author of A Guide to Creating Vernal Ponds
 (<http://herpcenter.ipfw.edu/outreach/VernalPonds/index.htm>) and

Wetland Drainage, Restoration, and Repair

(http://www.kentuckypress.com/viewbook.cfm?Category_ID=1&Group=197&ID=1396)

When: **September 28-30, 2007** (5:00 p.m. Friday to 2:00 p.m. Sunday)

Where: Sweet Briar College in Amherst County, Virginia

Conference presentations and reception, full-day construction workshop, on and off-campus field exploratories and lots of take-home resources!

*Price rate varies from "independent lodging" to "full accommodations" (at the Elston Inn on campus)...

Registration deadline: **September 17, 2007**

FMIC: Mike Hayslett @ mhayslett@sbc.edu or (434) 381-6439

2) Symposium in Honor of Richard Hoffman, Sept 21-22, 2007

The Virginia Museum of Natural History (VMNH), Virginia Natural History Society (VNHS), VHS, and Patrick Henry Community College are cosponsoring a special symposium this fall to honor the career and 80th birthday of Richard Hoffman. Richard and Joe Mitchell conceived the idea of the journal *Banisteria* in the early 1990s and served as coeditors of the journal from 1992-1999. Dr. Hoffman is currently an associate editor of the journal, an honorary councilor of VNHS, and has been a long time member of the VHS.

The symposium, entitled "A Lifetime of Contributions to Myriapodology and the Natural History of Virginia: A Symposium in Honor of Richard L. Hoffman's 80th Birthday" will be held on **September 21-22, 2007**, at the VMNH's new facility in Martinsville. Current plans include a social reception on Friday night and a banquet on Saturday night, with formal and informal presentations throughout the day on Saturday.

Coorganizers of the event are Steve Roble (steve.roble@dcr.virginia.gov) and Joe Mitchell (dr.joe.mitchell@gmail.com) of VNHS and Nick Fraser (nick.fraser@vmnh.virginia.gov) of VMNH. Consult the Virginia Natural History Society's website (va-nhs.org) for periodic updates or contact one of the coorganizers. Preregistration is required by no later than **September 10**. Costs are \$25 for registration and \$25 for the banquet. The Virginia Museum of Natural History will publish the proceedings of the symposium and other invited papers as a contribution to its Memoirs series.

3) Reptile Expos

	Richmond	Manassas
Show	November 4, 2007	August 25, 2007
Dates		December 8, 2007
Location	The Holiday Inn Select 1021 Koger Center Blvd. Richmond, VA 23235	Prince William County Fairgrounds Manassas, Virginia 20108
Admission	\$7.00	\$6.00
Time	10 am to 3 pm	9 am to 3 pm
Contact	(804) 379-3800	(703) 368-0173

4) NEPARC Annual Meeting, August 20-22, 2007

The annual meeting for the Northeast Partners in Amphibian and Reptile Conservation will be held on August 20-22, 2007 at University of Virginia's Mountain Lake Biological Station. Meetings are held annually and provide a forum to discuss NEPARC projects, hear presentations on various herp conservation and research activities, network and enjoy the company of like-minded herp enthusiasts, and elect officers.

<http://www.pwrc.usgs.gov/neparc/Meetings/index.htm>

NOTICE: Submissions for *Catesbeiana* Vol. 27 No. 2 are due September 1, 2007!

Please support the VHS by submitting any papers, field notes, or artwork for *Catesbeiana* to: Dr. Steven Roble, Editor, *Catesbeiana*, Virginia Department of Conservation & Recreation, Division of Natural Heritage, 217 Governor St., Richmond, VA 23219, Steve.Roble@dcr.virginia.gov.

Conservation Key

Tim Christensen
VHS Conservation Committee Chair

EFFECTS OF WETLAND COMPENSATORY MITIGATION ON AMPHIBIANS

Federal and Virginia laws exist to protect important wetland environments that perform several vital functions including erosion control, groundwater recharge, recreation (ie, hunting, bird-watching), trapping contaminants from stormwater runoff and most importantly as habitat for a myriad of organisms. Nonetheless, Virginia, as well as the nation, has experienced significant loss of this valuable resource. Cognizant of their value, regulatory agencies require compensatory measures for projects where losses cannot be avoided or minimized. In Virginia, "compensation" is defined as "actions that provide some form of substitute aquatic resource." This typically involves creation of new - presumably in-kind - wetlands on-site or part of a wetland mitigation bank.

Conservation of amphibians is dependent on retaining and creating suitable habitat. The question that arises is whether such measures actually affect amphibians negatively in terms of habitat availability and population dynamics. It would seem plausible to assume that creation of new wetlands would constitute a positive outcome in that anuran and caudate species would eventually colonize the new habitat. Let's examine this in more detail.

First, consider the impacted wetlands. It constitutes a loss of a particular type of wetland habitat. Understandably, this includes losing the majority of the biological component. Unless organisms are able to immigrate to a suitable new area, mortality would be expected particularly for amphibians. Consider carpenter frogs (*Rana virgatipes*) for example. This species breeds in permanent ponds, marshes and cypress swales, and the adults tend to remain in these habitats throughout the year. Presumably then, destruction of a given wetland for which *R. virgatipes* exist would result in high mortality. Consequently, some loss of an amphibian population(s) is expected depending on the type of wetlands, size of acreage to be lost, the species present and possibly the time of year.

The compensation requirements would involve conversion of a non-wetland site to a presumably in-kind wetland. The habitat associated with the mitigation site might comprise any type such as an early successional area, forested land or an open field though ultimately the site must meet hydrologic, soil and vegetation criteria for a wetland. Such areas may also contain ephemeral pools or depressions that retain precipitation which are not regarded as wetlands.

When a mitigation design is prepared, did it consider whether amphibian species existed at the proposed site? Many adult amphibians (anuran and caudate) occupy terrestrial upland areas outside the breeding season. Adult Eastern narrow mouthed toads (*Gastrophryne carolinensis*) are highly terrestrial to include during the breeding season by utilizing flooded pastures or grassy open fields containing sufficient moisture. Adult Eastern spadefoot toads (*Scaphiopus holbrookii*) occupy small home ranges occurring in

open and forested uplands often using the same burrow for extended periods of time. Many hylids use forest leaf litter and areas beneath tree roots as hibernacula. Ambystomatid and plethodontid salamanders occupy forested uplands at considerable distance from standing water. Converting areas occupied by such species would constitute habitat destruction essentially as would fill of the impacted wetland with equitable mortality.

This issue prompts the question of why not capture and translocate the affected populations before the conversion begins. This concept was actually attempted for a population of Blanchard's cricket frog (*Acris crepitans blanchardi*) at risk from a development project in southeast Michigan (Richard, Sonntag and Zippel, 2004). While the authors claim success in the very short-term, the outcome is questionable. Such an action would be resource-intensive particularly in terms of labor and time not to mention the capability of locating and capturing a large number of small specimens, and distinguishing them from *A. crepitans*. One would need to consider mortality from the stress of capture and temporary retention as well as concerns over introducing disease to a new area. Success of such translocation could only be confirmed by monitoring the released specimens over a period of several years. Likely there would be several species involved making the action more problematic. While admirable from an ethical perspective, the costs may not be feasible in the short or long term.

Effects on amphibians from mitigation efforts are not limited to the obvious habitat destruction associated with the impacted and mitigation sites. Consider the key term "in-kind" wetlands. When compensatory wetlands are created they are typically designed to be the same kind of wetland that was lost as a condition of the permit to fill the original wetland. Does this actually happen? Is there sufficient regulatory oversight? How much time will it take to actually achieve the required vegetative, hydrologic and soil conditions? Is the mitigation site monitored for a sufficient period of time and maintained as the same type of wetland? Are sufficient adjacent uplands included in the design? Will migration corridors exist or will the new site contain barriers?

Pollio (2007) reported the surveys of mitigated wetlands constructed since 1990 in Ohio by Porej and Hetherington (2005) that indicated more than half contained predatory fish species and nearly the same amount lacked sufficient shallow littoral areas, and she theorized that this practice reduced the habitat requirements of upland chorus frogs (*Pseudacris feriarum*) contributing to that species' decline. Interestingly, Micacchion (2006) reported that 35 sub-areas of 12 wetland mitigation banks in Ohio were compared to 111 natural wetlands concluding that amphibian species composition was considerably different especially forested wetlands. Mitigation bank wetlands tended to be dominated by bullfrogs (*Rana catesbeiana*), green frogs (*Rana clamitans melonata*) and northern leopard frogs (*Rana pipiens pipiens*). Ambystomids, newts (*Notophthalmus viridescens*) and wood frogs (*Rana sylvatica*) were virtually absent. Reasons for the disparity included mitigation efforts tending towards permanent hydrologic conditions, presence of predatory fish, steep slopes and lack of sufficient vegetation.

In conclusion, I feel that we very well may be impacting amphibian populations by robbing upland areas to pay for mitigation wetland sites. Granted that wetland mitigation was not specifically intended for amphibian propagation but it seems we've forgotten that amphibians require more than one type of habitat for survival. The challenge is studying the issue adequately. Arguably, more information is needed. Furthermore, I believe we should follow Ohio's lead and thoroughly evaluate mitigated wetlands to ascertain the degree of amphibian diversity.

LITERATURE CITED

- Micacchion, M. 2006. Amphibian Communities Of Wetland Mitigation Banks-Comparisons To Natural Wetlands. International Wetlands Symposium. www.aswm.org/calendar/wetlands2006/abstracts20065.htm.
- Pollio, C. A.. 2007. The Upland Chorus Frog (*Pseudacris feriarum*) in Virginia: A Species In Decline? *Catesbeiana*, Vol 27, No. 1: 24-35.
- Porej, D. and Hetherington, T. E. 2005. Designing Wetlands For Amphibians: The Importance Of Predatory Fish And Shallow Littoral Zones In Structuring Of Amphibian Communities. *Wetlands Ecology and Management*, Vol 13: 445-455.
- Richard, A., E. Sonntag, and K. Zippel, K. (2004). Amphibian Conservation Strategies: Translocating An Entire Population Of Blanchard's Cricket Frog (*Acris crepitans blanchardi*) in Southeast Michigan. *Endangered Species UPDATE*, Vol. 21 No. 4: 128-131.

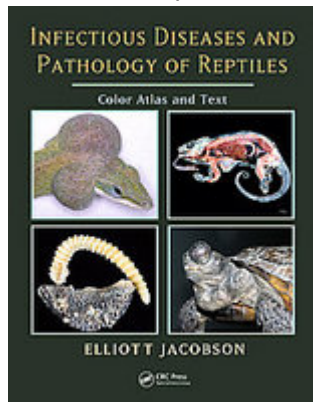
Book Review

Elliot R. Jacobson. 2007. Infectious Diseases and Pathology of Reptiles: Color Atlas and Text. CRC Press. ISBN13: 9780849323218

Joy Ware

VHS Research Committee Chair

This recently published book is the most up-to-date text available on infectious diseases of reptiles. Published in April 2007, this is a superb, highly detailed reference book covering the topic of infectious diseases of reptiles from multiple angles. The color photographs provide excellent images of histopathology, internal and external lesions and abnormalities, and dissections of a variety of reptiles.



In addition to the descriptions and photographs of the manifestations of these diseases, the book also includes instructions in pathogen isolation, necropsy techniques, and microbial culture techniques. The book is most valuable for those doing research on reptile diseases and/or providing health care for reptiles.

This is a highly technical publication with a high price (\$199), and thus it is understandable that some herpers may not wish to buy it. However, I would recommend that VHS members urge their universities to purchase the book so that it will be available for access when needed, as well as available for education reference.

Herpcetera

Thanks to Tim Christensen for the following:

Welcome!

The other month, my coworker told me that her 9-year old daughter conveyed her desire to become a herpetologist when she grows up. Frankly, how often do we hear young people expressing that kind of interest? It's great to know we actually have a new generation of herpetologists on the horizon! Miss Rebecca Haynes, who became one of our most recent VHS members says that she would like to help discover a new species of frog as well as meet other people who have interests in reptiles and amphibians. So, with this wonderful news, we are extending a special welcome to you, Rebecca!

WildlifeMapping Revisited

Well, VHS members, as the Conservation Committee chairperson, I wanted to remind everyone that a very credible program exists that can serve as an important tool towards herpetofauna conservation (and all native wildlife) in Virginia. Many of you heard this before but let's bring it up again. I'm referring to the program called WildlifeMapping administered by the Department of Game and Inland Fisheries. WildlifeMapping is a wildlife-monitoring program that utilizes wildlife observations contributed by volunteers to the state's biological database. This helps support long-term wildlife distribution information.

Data on reptiles and amphibians is needed, and VHS members who complete the one-day training workshop can contribute greatly to this program. Several members recently completed the training. Dr. Lou Verner who manages the program will be a guest speaker at the fall meeting and will provide more information about the program.

Herpetology Mythology

A recent incident involving a broad-headed skink prompted us to initiate a new forum for the Newsletter. As you can infer from the title of this article, the topic relates to myths about reptiles and amphibians. We're sure most people are familiar with many such myths and the one that snakes hypnotize

their intended prey is a classic. It's highly likely this bogus idea was created or at least perpetuated by Disney's animated version of Kipling's "The Jungle Book".

The broad-head skink incident represents a possible new myth. This particular incident originated with a person who believed his dog would be poisoned and die if it caught and ate a broad-headed skink. Unfortunately, the reasoning behind this thought could not be ascertained. It's a new one on me anyway. What do you think?

So, herpers, do you have a myth of herpetological proportions to convey? If so, we'd like to include them in the next Newsletter. Forward your fabulous folklore to either Tim Christensen (mtnc066@msn.com) or Kory Steele (colchicine@gmail.com) by December 15.

Those Elusive Hognose Snakes!

This spring, Tim Christensen, the natural resources manager for the U.S. Army at Fort Eustis and Fort Story, Virginia, received several phone calls of odd-looking (and odd-acting) snakes at Fort Story. Verbal descriptions clearly indicated that these were Eastern hognose snakes (*Heretodon platyrhinos*). This was enlightening news. Previously, he documented only one specimen (that was found in 2006) though unfortunately it was DOR.

To some of us *Heretodon platyrhinos* is arguably one of the more fascinating species both morphologically and from a behavioral perspective. That rostral scale, triangular head, contrasting orange-black color pattern (or if you prefer the melanistic phase)...this species is truly a unique colubrid. It's the behavior that really separates them from all other snakes. To witness the classic hognose response to a perceived threat is nothing short of a show of a lifetime! The flattening of the head and the hissing followed by the methodical feigning of death complete with comical convulsions is a sight to behold.

Despite having spent considerable time on-site performing various natural resource-related actions, he encountered not a single live specimen. Tim conveyed his frustrations in not achieving his life's objective to Kory who likewise shared a similar interest. Not to be undone, they orchestrated a site visit to Fort Story for the sole purpose of finding the elusive hognose snake. One Saturday in early May, they set out on their quest.

The environment and related ecosystems of Fort Story constitute some interesting features, and one can understand why hognose sightings were occurring. While typically envisioned by its beaches and primary sand dunes (from its location near the confluence of the Chesapeake Bay and the Atlantic Ocean), it also comprises interior sand dunes with areas of sparse herbaceous vegetation but also maritime forest. Live oak (*Quercus virginiana*), sweet gum (*Liquidamber styraciflua*), loblolly pine (*Pinus taeda*), American holly (*Ilex opaca*) and sassafras (*Sassafras albidum*) comprise the dominant trees species while greenbrier (*Smilax glauca*), Jessamine (*Gelsemium sempervirens*) and trumpet honeysuckle (*Lonicera sempervirens*) comprise other vegetation in these areas. Lowland areas contain beautiful forested wetlands dominated by bald cypress (*Taxodium distichum*), swamp tupelo (*Nyssa biflora*) and loblolly pine. Several small man-made lakes also make up the environment. This area is home to the illustrious Southern toad (*Bufo terrestris*) and equally magnificent Fowler's toad (*Bufo fowleri*). Yes, Virginia, that's why we have Eastern hognose snakes hanging out at Fort Story.

As the story continues, they traversed these several ecosystems through the course of a day. Skies were generally partly cloudy and temperatures rising into the 70s. Maybe it wasn't the best weather for searching out the quarry but then can one ever have ideal conditions? Several anurans were heard calling including Cope's gray treefrog (*Hyla chrysoscelis*), green frogs (*Rana clamitans*) and Southern leopard frogs (*Rana sphenoccephala*), and the occasional huge splash indicated bullfrogs (*Rana catesbeiana*) were also in the immediate area. A large congregation of recently hatched toad larva was observed in the shallows of one lake in particular. Despite their efforts however, no hognoses were kind enough to rear their flatten heads.

As the expedition was nearing its end, they were crossing a fairly open area containing only sparsely positioned plants. With disappointment looming, Tim turned over a small piece of metal debris. To their astonishment, an adult six-lined racerunner (*Cnemidophorus sexlineatus*) scurried out and stopped just a few feet from its refuge. Well, it wasn't exactly the hognose that they sought but nonetheless its appearance did make the day. Kory followed



through with no less than his 500-photo op session, and Tim could marvel momentarily to see a lizard other than skinks for once. While this species had been recorded at Fort Story previously, it was the first time that either had observed a racerunner in the wild. It just goes to show you that when you journey afield, never intend to find something specific.



WHERE CAN YOU FIND ALL OF THESE HERP ITEMS??

The VHS online store at www.cafepress.com/vaherpsociety !!!

Online Resources

Free Trial Access to Applied Herpetology

Applied Herpetology is an international journal addressing research on amphibians and reptiles in relation to humans and therefore focusing on natural products development, farming, ethnobiology, biodiversity and environmental monitoring, conservation and wildlife management. A main objective of the journal is to enhance communication between academic scientists and researchers in industry, governmental bodies, international agencies and others involved in applied research involving herpetofaunal.

<http://www.ingentaconnect.com/content/brill/ah>

Valid until **15 October 2007**

User Name: aphe_trial

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Some articles related to Virginia herps:

- Spot symmetry predicts body condition in spotted salamanders, *Ambystoma maculatum*
- Evaluation of seven aquatic sampling methods for amphibians and other aquatic fauna
- The effects of survey protocol on detection probabilities and site occupancy estimates of summer breeding anurans
- Road occurrence and mortality of the northern diamondback terrapin
- A cost-benefit analysis of automated call recorders

"Rattlesnakes...and bison lived together in western Oklahoma for thousands of years, and it was not the snakes that nearly exterminated the buffalo."

Richard Lardie

News

- 1) The Underdog of Wetlands
- 2) Sweating To The Turtles

- 3) The Good Side Of Reptiles

1) The Underdog of Wetlands

Vernal pools, incubators of wildlife, are disappearing at an alarming rate—in part because people are just beginning to recognize their ecological value.

By Jennifer C. O'Donnell

Tuesday, May. 8, 2007

In other parts of the country they're called kettles, pot holes or hog wallers. In Virginia, they're referred to as vernal pools—seasonal temporary freshwater wetlands that appear in winter and early spring. By mid-June or July, these pools have just about vanished, evaporated under the hot summer sun, but not before they serve as a first home to a new generation of wildlife.

This time of year vernal pools are positively teeming with life as frogs, salamanders, toads, even crustaceans use them as an ideal incubator for their eggs. These small ponds, sometimes as little as 10 feet square, give vulnerable species the chance to lay eggs in an environment that offers the benefits of fresh water living, without the drawbacks of predators such as fish, turtles and other predatory species. The pools play host to a variety of organisms, including threatened and endangered salamanders, toads and frogs. While these species are terrestrial as adults, they require a safe, fresh water habitat in order to complete the stages of metamorphoses.

Take a look around and you might spot a vernal pool locally – in the depression of a local corn field, on the edge of a wooded area, maybe even in your own backyard. Sometimes they look like nothing more than a mere puddle. In some cases they're as large as a football field and only a foot or two deep. Some of the larger pools locally can be found at First Landing State Park, on the ground of Fort Eustis, in Grafton and Isle of Wight County.

If you're lucky enough to find a pool, look hard, because they're disappearing at an alarming rate. Nationwide and particularly in Virginia, vernal pools are vanishing from the landscape as construction and development encroach on areas once reserved for farming or rural living. As housing developments pop up, strip malls replace agriculture fields and forests are thinned, the pools that have, in many cases, served as a temporary habitat for centuries of Virginia wildlife, are lost. Forever.

What's so bizarre is that the current and dire predicament of vernal pools is partially the result of bad publicity. "I like to call them the underdog of the wetlands," said Michael Hayslett, an adjunct professor of environmental studies at Sweet Briar College in Sweet Briar, Virginia, and one of the state's leading advocates of vernal pools. "People are only just beginning to recognize the ecological value of them."

For the past two decades wetland conservation has grabbed newspaper headlines as well as the attention of the public and well-funded advocacy groups such as the Chesapeake Bay Foundation and the Nature Conservancy. But as hard as the public and advocacy groups have fought to save wetland areas, most failed to champion for the under-appreciated vernal pools. Not necessarily due to apathy, but because vernal pools are



STILL WATERS RUN DRY: As housing developments pop up, strip malls replace agriculture fields and forests are thinned, the pools that have, in many cases, served as a temporary habitat for centuries of Virginia wildlife, are lost. Forever.

CREDIT: Norm Walsh

small and easily overlooked— and seasonal. And since most reside on private property they're mistaken as being nothing more than a nuisance puddle or a magnet for disease-carrying insects such as mosquitoes.

"I don't think most people have a visual image of what a pool looks like," says Alan H. Savitzky, a herpetologist with Old Dominion University. "They don't make the connection between these seasonal habitats and the importance they play with a large number of organisms."

Another problem: "When you visit them determines if what you see is a wetland or a dried-up small patch of depressed land with a few trees in it," says Savitzky. "And they don't always show up in aerial imagery if it's taken at the wrong time of year."

With image problems to contend with, it's no wonder vernal pools have suffered so.

While the state offers no specifics as to how many acres of temporary wetlands have been lost in recent years, environmentalists agree the news isn't good. And the impact of losing these vulnerable habitats will no doubt ripple through Virginia wildlife.

Amphibians, already in state of distress worldwide, are what environmentalists refer to as a "bridge between the aquatic world and the terrestrial world." Not only do they eat mosquito larvae and other insects, but they serve as a food source for a variety of larger animals. In addition, fairy shrimp, a common crustacean found in Virginia's vernal pools, are an important food source for waterfowl and other migratory birds during the spring months.

Construction is the most obvious offender to vernal pools. But Hayslett says he can't ignore other factors that are contributing to their decline, namely climate change.

Hayslett says he's noticed a dramatic change in amphibian behavior in the last five years, change that he associates in part to seasonal changes. If seasonal changes bring warmer weather for longer durations of time the impact on vernal pools would be significant, says Hayslett.

The species that rely on the pools "will not be able to complete their developmental cycles before the pools dried up. The tadpoles would perish."

Other factors are also contributing to the decline of vernal pools and their inhabitants, including mosquito spraying and logging.

Protection, in the form of legislation, is weak, say environmentalists.

"We do not have strong legislation that protects these isolated wetlands in Virginia," says Hayslett. As bad as the news is, there is some hope.

Hayslett says public perception concerning vernal pools is already changing and has made strides in their preservation particularly in New England and California. And research is on-going. Hayslett and his employer, Sweet Briar College, recently launched a collaboration with Boxley Corporation to restore vernal pools in distress. The program will attempt to recreate several wetlands which will eventually be lost during the expansion of the company's Amherst County quarry within the next decade. The recreation will not only try to match the wetlands original dimension and dynamics, but will also relocate a variety of species to the new pool sites on the company's property. The collaboration could serve as a templet for similar projects statewide.

But research, says Hayslett, can't go it alone. "This is where the state has to step up with legislation to preserve these isolated wetlands." Savitzsky believes that the pools and the wildlife that depends on them is in the hands of the public.

"Education and appreciation for these habitats is what's needed, and patience on the part of the public," he says. "If we continue to make exceptions to zoning rules, we're just nibbling away at these habitats." •

<http://www.portfolioweekly.com/Pages/InfoPage.php/iID/2824>

2) Sweating To The Turtles

Researchers Seeking Answers to the Box Turtle's Slow Demise

By REX SPRINGSTON

Richmond Times-Dispatch

June 30, 2007

CHARLES CITY, Va. -- The dead walk among us. Actually, they crawl.

They are box turtles--gentle, softball-sized animals that can live to be more than 100. Loved even by people who find other reptiles creepy--many Virginians have kept them as pets--the land-dwelling turtles are dying out as we develop their forests and crush them with our cars. You can still find the eastern box turtle across Virginia, particularly during a summer rain, which gets them moving in search of earthworms, insects and other food. But because they live so long, a few individuals can give the impression that a healthy population inhabits your neighborhood. The truth is, you may be seeing the last survivors of a doomed group that no longer produces young that survive.

"We call them populations of the living dead," said Joseph C. Mitchell, a University of Richmond biologist.

Raccoons, thriving in part because we serve them takeout from our trash cans, dig up and eat the turtles' eggs. Raccoons, dogs and other predators kill young turtles. At Virginia Commonwealth University's wooded Charles City County tract called the Rice Center, scientists are conducting an experiment that may help save these imperiled animals.

Some people sweat to the oldies. "We're sweating to the turtles," said J.D. Kleopfer as he trudged through the Rice Center forest on a recent steamy morning.

Kleopfer, a reptile expert for the state Department of Game and Inland Fisheries, held an antenna before him as he zigged and zagged through the woods. A series of ever-sharper beeps told him he was closing in on a box turtle with a watch-size transmitter glued to its back. As part of a study that began in May, Kleopfer was tracking turtles to learn when and where they travel. When a forest is about to be bulldozed, well-meaning people sometimes catch box turtles and put them in another woods miles away. Experts believe that doesn't work. The displaced animals become homing turtles, taking off like a shot--a very slow shot--for their former home. They usually end up dead on the

highway or picked up by people who take them home.

In the study, scientists will first learn how these local turtles move in their natural territory. Seven are wired with transmitters.

So far, the work shows that some stay in the same place for days, while others wander hundreds of feet looking for food, a mate or whatever else a turtle wants. Later--possibly next year or the year after--box turtles from other areas will be put in an outdoor pen, held for several months and then released. The thinking is that, like a cat you take in for a few days, the turtles may decide to stay put.

Box turtles have been studied a lot, but little is known about how they adapt to this sort of detention, Kleopfer said.

If the hold-and-release method works, it could show conservationists how to move box turtles from development sites before the bulldozers roll in. The forest smelled like damp earth as Kleopfer pushed past branches and spider webs. Crickets chorused, and a distant wood thrush sang its flutelike song. Kleopfer came to a patch of wild grapes, with leaves that blanketed the forest floor to about calf-high. The beeping transmitter said the quarry--romantically named turtle 103--was hiding nearby. Kleopfer pulled back some leaves and uncovered the turtle, blinking like an old man awakened from a nap.

"Look at him," Kleopfer said. "He's not happy. He says, doggone it, I keep hiding, and they keep finding me."

Ricky Davis, a game-department intern, recorded the precise location electronically, and turtle 103 was left in his grape-leaf lair. Why all the concern over box turtles?

Kleopfer said they are as important as Civil War monuments or historic buildings. "They are part of our legacy as Virginians." They can be startlingly attractive in their Halloween colors -- orange and black, or yellow and brown. They stare at you with determined mouths and bright eyes--orange in males, brown in females. They rarely, if ever, bite.

"Snapping turtles look prehistoric and menacing, and they can bite like hell," said UR's Mitchell. "Box turtles look like little tanks running around in your yard, and they're sweethearts." Box turtles are like people in some ways, Mitchell said. They can live to a ripe age; the females don't begin to reproduce until they hit their teens; and they don't reproduce every year. That makes the turtles' fate all the more heartbreaking. When a forest is cleared for development, Mitchell said, these animals that have lived there for decades are buried alive or crushed. "It's a very sad story," he said.
<http://www.dailypress.com/news/local/>

3) The Good Side Of Reptiles

By Becky Robinette Wright, Special Correspondent
Featured in June 28, 2007

Slither. Hiss. Fangs. Venom. If these words strike fear in you, prepare to be surprised, snakes have a good side.

In Chesterfield varieties of venomous and non-venomous snakes can be found. "In Chesterfield, the venomous snakes found are Copperheads and Moccasins," explains Judy Brown a naturalist who is based at Rockwood Nature Center. "The Copperhead is found in every county in Virginia, but the Moccasins in Chesterfield are only around the Appomattox River. Locally we don't have Rattlesnakes but they are located in the southeast Dismal Swamp area and the western portion of the state. That's all the venomous snakes in Virginia."

If you come upon a snake, Brown continues, just stop and watch, see what it is going to do. By large the venomous snakes are not aggressive, but they will defend themselves if teased, threatened or injured. Copperheads usually stand their ground.

How can you tell if a snake is venomous or not? Brown says that venomous snakes have vertical or oval pupils, like a cat's eye and non-venomous have round pupils. The venomous snakes have two nostrils with two additional holes which are called pits, thus their name of pit vipers. The venomous snakes look like they have big, fat heads because they have the venom sacs, it also makes their necks appear to be very skinny. Some people describe them as having a triangular head. Young Copperheads and Moccasins will also have a yellow tip on their tail.

What do snakes do for us ?

"Snakes are very useful," Brown firmly states. "They eat rats, mice, moles and insects. There was a subdivision in Chesterfield that had a tremendous rat problem, I guarantee it was because the snakes in the area had been killed off. There never would have been a rat problem if snakes were there."

What if a bite does occur ?

"Forget what was done in the past," Brown said. "Do not put ice on the bite. It's an automatic thing to think that if something swells it needs ice, but for a snake bite that's not correct. All that will do is cause cell damage in the bite area. Don't cut the spot and don't try to suck out the venom. Do not apply a tourniquet. The best thing to do is nothing, but immediately call 911."

Brown said a shed snake skin can also reveal if its owner was venomous or non-venomous. Look at the scales on the skin, Brown says, the belly side scales are stacked but if you look at the tails, if the skin has one scale after another at the tail, its venomous. Non-Venomous have double scales at the tail. In some skins that have shed you also can see the pattern of the snake.

Judy Brown host numerous classes to educate the public on snakes. She is also available to answer snake questions. Contact Judy Brown at (804) 745-7020.

<http://www.westernchesterfieldexchange.com/npps/story.cfm?ID=1058>

"Human industry has been in full swing for a little over a century, yet it has brought about a decline in almost every ecosystem on the planet. Nature doesn't have a design problem. People do."

William McDonough, architect and designer, Sierra Club magazine

Answers from page 4

Herp Trivia Answers

1. "Cold blooded" is an outdated term for temperature regulation by herps, what is the proper term? Endothermy or **ectothermy**
2. Who provided some of the earliest recorded observations of herps in Virginia?
Captain John Smith



3. How long has the VHS been active? **50 years in 2008**

4. What is the only Virginia herp to inhabit brackish waters? **Diamond Back Terrapin (*Malaclemys t. terrapin*)**



5. Native Americans used to use what kind of snake to adorn their ear lobes?
Rough Green Snake (*Opheodrys aestivus*)

6. What herp species are illegal to possess in Virginia? **Natives: Diamond Back Terrapin (*Malaclemys t. terrapin*), Spotted Turtle (*Clemmys guttata*) and E. Hellbender (*Cryptobranchus alleganiensis*). Nonnatives: (Cane Toad (*Bufo marinus*), African Clawed Frog (*Xenopus spp.*), Barred Tiger Salamander (*Ambystoma tigrinum mavortium*), Gray Tiger Salamander (*A. t. diaboli*), Blotched Tiger Salamander (*A. t. melanostictum*), Brown Tree Snake (*Boiga irregularis*), all species of crocodylians.**

7. What does the term "hepatic piston" refer to? **The liver in crocodylians is moveable to allow room for expansion of the lungs. Therefore, the liver is part of the respiratory mechanism as it plunges back and forth like a piston.**

8. **True** or False? Reptile kidneys (except turtles) are unable to produce liquid urine more concentrated than their body fluid. This is because they lack a specialized structure present in the nephrons of birds and mammals, called a Loop of Henle.

9. What Virginia native is capable of producing the strongest known vomit inducing chemical? It is also a potent neurotoxin with no known antidote, which blocks action potentials in nerves, and is actually the product of certain bacteria. **Red Spotted Newt (*Notophthalmus v. viridescens*)**



Send your suggestions for Herp Trivia to the newsletter editor, Kory Steele, colchicine@gmail.com.

Virginia Literature

These selections represent articles published or In Press, January to July 2007. Included articles are focused primarily on (1) studies performed within Virginia environments, (2) studies on reptiles or amphibians found within Virginia, or (3) additional herpetological topics that are of

general interest. Compiled by Dr. Joy Ware & Dr. Steve Roble.

Reptiles

Pizzatto, L, S. M. Almeida-Santos, and R. Shine. 2007. Life-history adaptations to arboreality in snakes. *Ecology*. 88(2):359-66.

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Cabe, P. R., R.B. Page, T. J. Hanlon, M. E. Aldrich, L. Connors, and D. M. Marsh. 2007. Fine-scale population differentiation and gene flow in a terrestrial salamander (*Plethodon cinereus*) living in continuous habitat. *Heredity*. 98(1):53-60.

Semlitsch R.D., T. J. Ryan, K. Hamed, M. Chatfield, B. Drehman, N. Pekarek, M. Spath, and A. Watland. 2007. Salamander abundance along road edges and within abandoned logging roads in Appalachian forests. *Conserv Biol.* 21(1):159-67.

Roelants K., D. J. Gower, M. Wilkinson, S. P. Loader, S. D. Biju, K. Guillaume, L. Moriau, and F. Bossuyt. 2007. Global patterns of diversification in the history of modern amphibians. *Proc Natl Acad Sci U S A.* 104(3):887-92.

Green, D. E., and C. K. Dodd. 2007. Presence of amphibian chytrid fungus, *Batrachochytrium dendrobatidis*, and other amphibian pathogens at warm-water fish hatcheries in southeastern North America. *Herpetological Conservation and Biology*. Vol 2(1): pp. 43-48.

Miller, J. E., G. R. Hess, and C. E. Moorman. 2007. Southern two-lined salamanders in urbanizing watersheds. *Urban Ecosystems* 10(1):1573-1642.

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<http://groups.yahoo.com/group/VaHS/>



<http://www.cafepress.com/vaherpsociety>

Gibson, J. D., and P. Sattler 2006. Observation of Intra-dermal Trombiculid Mite Larvae in Two Species of Salamanders in Virginia. *Banisteria* 27: 29.

Mitchell, J. C. 2006. Status of the Smooth Greensnake (*Ophiodrys vernalis*) in North Carolina and Virginia. *Banisteria* 28: 37-43.

Reichenbach, N., M. LeMon, and J. Hinson. 2006. Ecology of a Salamander Assemblage, Including Disjunct Populations of *Eurycea lucifuga* and *E. l. longicauda*, in an Abandoned Virginia Mine. *Banisteria* 28: 44-48.

Kleopfer, J. D., and J. C. Mitchell. 2006. Notes on Basking Behavior of the Stinkpot (*Sternotherus odoratus*) and its Implications for Predation Risk. *Banisteria* 28: 55-56.

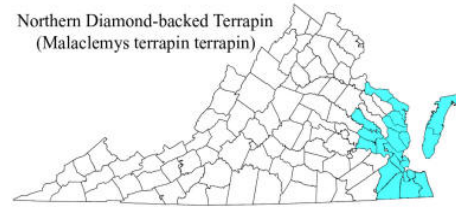
Mitchell, J. C., and C. Seltzer. 2006. Early Emergence and Unusual Coloration in Eastern Milk Snakes (*Lampropeltis triangulum triangulum*) in the Northern Blue Ridge Mountains of Virginia. *Banisteria* 28: 56-59.

Gibson, J. D., and J. C. Mitchell. 2006. Opportunistic Scavenging by Eastern American Toad (*Bufo americanus americanus*) Tadpoles on a Dead Red-Spotted Newt (*Notophthalmus viridescens viridescens*). *Banisteria* 28: 59-60.

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> & http://www.chesapeakebay.net/info/diamondback_terrpin.cfm.

Malaclemys terrapin, or the diamondback terrapin, is the only North American turtle that lives exclusively in brackish water, inhabiting estuarine embayments and marshes from southern New England to the Gulf of Mexico. The word "terrpin" is an Algonquin word for edible turtles that live in brackish water. Indeed, terrapin soup laced with sherry was so appealing to gourmards during the late 19th century that the animals were hunted vigorously. More than 89,000 pounds were caught in the Bay in 1891—and they also commanded the highest price: between \$30 and \$120 per dozen. Their abundance wasn't always so appealing—according to one account, slaves on the Bay's Eastern Shore were fed so much terrapin during the 18th century that they protested. Nonetheless, the continued harvest pressure on terrapins combined with their low reproductive rates and longevity resulted in decimating terrapin populations throughout the Bay by the early 1900's.



- Diamondbacks feed mostly on mollusks: snails, clams and mussels.
- Females begin to reproduce usually between ages 8 and 13, while males start between 4 and 7 years.
- Mating always occurs in water, usually at night, usually in May in the mid-Atlantic region.
- A female may lay fertilized eggs for four years before she mates again, and makes her nests in sandy rims above the high tide mark.
- The female digs an oval six-inch-deep hole in the sand and lays between 5 and 22 pink-white eggs, which take about 60 to 100 days to hatch.
- As in the case of most turtle species, the temperature of the diamondback's nest determines the gender of the hatchlings. The warmer the nest, the more females develop; the lower the temperature, the more males.
- If hatchlings haven't emerged by the onset of cold weather, they often winter over in the sand and hatch the following spring. Adult diamondbacks hibernate in layers of mud along embankments and at the bottom of creeks and rivers.
- Although many diamondback terrapins can live to be 40 or more years old, most never make it past the hatchling stage. Predators include small mammals that frequent wetland areas, such as foxes, otters, raccoons, and skunks, which eat either eggs or juveniles; and birds, which attack the hatchlings as they emerge. Adult diamondbacks also are killed by cars while trying to cross roads to lay their eggs near the water, many are injured or killed by boat propeller blades, and still more drown in crab pots.
- The commercial harvest of terrapins was recently banned in Maryland. Persons will be allowed to collect up to 3 terrapins from the wild as pets or for personal consumption. Thus the commercial harvest has been precluded but not all take from the wild has been prohibited. In Virginia, it is prohibited to possess terrapins.



Photo: Kory Steele & Pattie Crane – DBT courtesy of the [Virginia Living Museum](#).

NOTICE to Members: If you have an email address, please send it to Paul Sattler (pwsattler@liberty.edu). Then, for future issues of the newsletter, you will be notified via email upon its release on the website along with a link. Thank you for helping to save some trees, or should we say herp habitat!

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Please sign me up for membership in the Virginia Herpetological Society for the year(s) of _____.
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