Virginia Herpetological Society Newsletter

Volume 17, Number 1

January 2007

Contents

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

VHS Business

1) President's Message

Jason Gibson

Hello everyone. I hope that this message finds you happy and healthy in this new year of 2007. Last year was very exciting and this year promises to be as well. There will be many opportunities for volunteer work and herping this season. In February, the VHS will have a display set up at Reptile Weekend at the Virginia Living Museum in Newport News. The VHS will also have a booth set up at Reptile Day at the Virginia Museum of Natural History in Martinsville on July 29th. These events support our mission of educating the public about reptiles and amphibians. We need your help. If you would like to volunteer to help please contact Kory Steele (colchicine@gmail.com) for volunteering to help with Reptile Weekend and Jason Gibson (frogman31@gmail.com) if you would like to help with Reptile Day. We need people to accompany the booth, interact with the public and help with the live animal displays we will have set up. In addition to these events, the VHS officers and committee members have been working on the upcoming spring / summer surveys. We have two definite events with a third still in the planning stage. Please read about the two definite events in this newsletter. The third event is tentatively scheduled for June 29 – July 1 at Chickahominy Wildlife Management Area in Charles City County. Please check the VHS website (www.vaherpsociety.com) for updates on all events. We hope to see many members come out for these field trips.

2) VHS Surveys

Blue Ridge Scout Reservation Resource Ramble

The VHS has been invited to participate in the Resource Ramble on the Blue Ridge Scout Reservation on **April 14**. The "Ramble" is similar to a BioBlitz, but will include cultural and geological resources as well as biological. The base camps offer typical scout camp sleeping, feeding and meeting space. Dublin, about 10 miles from the camps, offers several motels and restaurants should some members prefer a less rustic sleeping arrangement. Much more information is available on the VHS website, please check the calendar for updates: http://fwie.fw.vt.edu/VHS/2007_vhs_calendar_of_events.htm

Rock Creek Park BioBlitz

For the past four years the VHS has participated in all of the BioBlitz's that have occurred in Virginia. This year the BioBlitz will be held in our nation's capital at Rock Creek Park from **May 18** - **19** (noon to noon). This year's event is hosted by National Geographic and the National Park Service. Although the diversity is not high, this is a good opportunity for the VHS to gain exposure and to interact with the public. The logistics of this event are still being arranged so all new information related to this survey will be updated on the VHS website.

Second Annual Herp Blitz

The second annual Herp Blitz has been scheduled for **June 8, 9, and 10** in Chesapeake. We will have access to two pieces of property including Northwest River Park and the newly created Cavalier Wildlife Management Area. This is a great opportunity to see many different species of snakes and frogs. Please continue to look at the VHS website for updates related to this event. We suggest that you make camping reservations early to ensure you will have a spot.

Annual Spring Survey and Business Meeting

This survey is still in the planning stages. Tentative date is **July 6 – 7,** at the Chickahominy Wildlife Management Area in Charles City County. Onsite hotel-type rooms will be available on a very limited

availability at the New Kent Forestry Center, and camping sites will be finalized soon. Please check the VHS website for future updates.

FALL MEETING

The 2007 Fall VHS symposium will be held on Saturday, **October 20** at Virginia Commonwealth University. Please mark you calendars early and plan to attend. If you would like to give a presentation or volunteer to help please contact Jason Gibson (frogman31@gmail.com). More information on this event will be posted in the summer newsletter and on the VHS website.

3) New VHS Conservation Committee Announced

Tim Christensen

At the VHS Spring 2006 business meeting Jason Gibson proposed the creation of a Conservation Committee. The proposal struck a special chord with me in particular. Interestingly, I made a similar proposal to members of the Hampton Roads Bird Club in 2005 after being elected President of that organization. Conservation of avian species, after all, was paramount to sustaining the bird-watching hobby (or if you prefer, the "industry"). Unfortunately, I was unable to marshal the forces needed, and the proposal evaporated.

Whether we're considering birds or herps, conservation is critical in our ever changing world, and I fully support Jason's proposal. Indeed, reptiles and amphibians constitute an essential component of the natural ecology. Their removal would be equivalent to pulling the rug out from underneath a fragile glass menagerie. If herpetofauna were removed from the ecological system, other species will surely disappear as well. Equally so such a loss directly affects the human ecology in a number of ways. Reptiles and amphibians serve as excellent indicators to help evaluate the health of our very own environment. More often are these species being recognized as necessary to the ecotour industry and the subsequent proceeds. And where would the scientific disciplines for both education and research be without Xenopus and Northern leopard frogs? And in combating emerging diseases are we not finding potential solutions in the biochemistry of crocodilians, anurans and snake venom? "Conservation" is not just a buzz word; it's a vital aspect to sustaining our own future.

Needless to say, I offered to orchestrate the new Conservation Committee. The first and foremost objective is transition from a "committee of one", and I'm hereby soliciting members who would be interested in joining this committee. I would ask members to consider joining the committee.

So where do we begin in forming a committee and charting a direction? Conservation begins with each of us as individuals and what we can convey to society. Think of it in this context. How many "snake-haters" do you know in your neighborhood? There's probably more than you wish to know about. Needless to say I had my share where I reside. Many of my neighbors know that I manage natural resource programs for the military and have come forward to tell me of the deadly cottonmouths living in the drainage ditches or that they had to kill the evil blacksnakes hiding in their gardens. It was high time for action.

Essentially, I took the time to research the ecology of the neighborhood. I performed surveys of birds, and "mini-anuran call surveys", and investigated reports of snakes observed in or near yards. I then took this information and translated into a neighborhood newsletter. The theme of this document focused on wildlife and other natural resources associated with the neighborhood; however, one key aspect was a discussion on the value of snakes to the human ecology. It seemed that shortly thereafter neighbors began expressing a somewhat more positive interest and there even seemed less animosity towards their reptilian neighbors. This is an example of conservation and how we get things started.

So let's take things further and contribute to the bigger picture. I put together a set of proposed tenets for the committee. Granted, I'm expecting some amount of disagreement and some may find a few controversial. That's okay; you're opinion is needed! I would ask all members to provide feedback (whether or not you wish to join the committee). I'll take all input and refine the tenets, and submit a final game plan to the Executive Board. You can provide feedback to either my work email address (Tim.Christensen@us.army.mil) or my home email address (mtnc066@msn.com). You're also welcome to call me and discuss on the phone (home: 757-874-8098 or work 757-878-2375).

Proposed Tenets

1. Align Committee actions/programs with the Education and Research Committees.
2. Promote research on herpetofaunal diseases.
3. Educate the public on why conservation of reptiles and amphibians is important.
4. Promote creation/maintenance of habitat.

5. Discourage capture/collection of native wild reptiles and amphibians for pets or temporary display specimens.
6. Promote rehabilitation of injured wild herpetofauna.
7. Support the Virginia Wildlife Action Plan.
8. Seek opportunities to partner with other groups towards conservation efforts.

4) Website Updates

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

1. Photos from the 2006 Herp Blitz, BioBlitz, Annual Survey, and Fall meeting have been added.
2. All species now have their own page, this provides additional space for photos, videos and other media.
3. Etymology of the scientific names has been added.
4. New photos and a few video clips have been added.
5. Virginia Turtle Identification Guide added.

CALL FOR PHOTOS

We're in need of high quality digital images for website use. Images must be no smaller that 1024 (W) x 700 (H) pixels. We also need video clips ideally less than 6 MB in size. Please email your submissions to: vhs.webmaster@verizon.net

5) Reptile Festivals Announcement

Reptile Weekend at the Virginia Living Museum Feb. 17-19, 2007.

The VHS will participate in the reptile and amphibian dedicated weekend at the recently built 65,000 sq ft Virginia Living Museum in Newport News. This is the most popular weekend event at the VLM, and usually attracts 2,000 people to learn more about herps. The VHS had a display last year, which attracted quite a few new memberships and interest from public. We will again have a display and ask for members to volunteer a few hours to staff the table and answer questions. Training will be provided, and the full announcement is in the Events section. Contact Kory Steele (colchicine@gmail.com).

Reptile Day at the Virginia Museum of Natural History

On Saturday, July 29th 2007, the VHS will be sponsoring the 1st annual Reptile Day at the Virginia Museum of Natural History in Martinsville. During this one day reptile and amphibian celebration there will be live animal displays, live reptile presentations by Mark Kilby of Luray Zoo, an educator's workshop, and other displays related to reptiles and amphibians. If you can volunteer to help with the VHS booth or with this event please contact Jason Gibson (frogman31@gmail.com).

We hope to see many VHS members come out and support these events.

6) Snake Lesion Study

Snake Force One Strikes Again Soon!

Our on-going investigation of external skin lesions, parasites, and other disease-related issues in snakes at three wildlife refuges will resume in April 2007. This study, instigated by the findings of the 2005 VHS Spring Survey at the Rappahannock River National Wildlife Refuge (NWR), is devoted to capturing, measuring, examining for disease, biopsy (if appropriate), photographing, and then releasing snakes at the Rappahannock River NWR in Warsaw, VA, the James River NWR near Hopewell, VA, and the Presquile Island NWR, near Hopewell, VA.

Our team of VHS members and other interested individuals will be conducting more surveys each month at these sites during spring and fall of 2007. This year we will be inserting PIT tags into each snake captured, so that we can identify each snake over a three year period. The hypothesis to be tested is that snakes at more environmentally pristine locations will exhibit external skin lesions less often, or less extensive disease, as compared to those in areas with greater exposure to industrial or agricultural by-products.

If you would like to participate with our group, dubbed Snake Force One, please email Joy Ware at jware@mcvh-vcu.edu and give her your email address. You will be added to the mailing list as we begin our study.

7) Photo Contest for the 2008 VHS Calendar

The first annual VHS calendar has been very popular. Thanks again to everyone who submitted images! These calendars are still available for sale, along with other VHS merchandise at: http://www.cafepress.com/vaherpsociety

Please keep the calendar in mind while you're out photographing, as I will be looking for photographic submissions again this year. I hope many more members will be able to participate this year. I'm looking to have submissions start sometime in August, with a deadline of September 1, 2007. Images submitted will need to be high resolution JPG files in RGB mode. 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 would be happy to help you. Please feel free to contact me with any other questions or concerns as well.

Patricia Crane pattiecrane@gmail.com VHS Store Committee

NOTICE: Submissions for *Catesbeiana* Vol. 27 No. 1 are due March 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.

Discovery consists of seeing what everybody has seen and thinking what nobody has thought. - Albert von Szent-Gyorgyi (1893-1986)

Herp Trivia

Most of this issue's trivia is based on distributions of herps in relation to the location of our Annual Survey. A PDF version of the herp atlas is on the VHS website at http://fwie.fw.vt.edu/VHS/tobey_atlas.htm. Compliments of John White…

1. Which snakes are found in Charles City County?
A. Ribbon and Garter Snakes B. Mole and Eastern King Snakes C. Northern and Brown Water Snakes D. Corn and Rainbow Snakes E. All the above

2. Which snake has not been found in Charles City County?
A. Eastern Milk Snake B. Black Ratsnake C. Glossy Crayfish Snake D. Copperhead E. Eastern Mud Snake

3. Which glass lizard is found in Charles City County?

4. There are how many species of frogs in Virginia?
A. 10 B. 22 C. 27 D. 57 E. 114

5. Which frog is not found in Charles City County?
A. Little Grass Frog B. Pine Woods Treefrog C. Southern Toad D. Eastern Spade Foot E. Eastern Narrow-mouthed Toad

6. Have timber (canebrake) rattlesnakes been documented in Charles City County?

7. What is the longest (total length) species of salamander found in Charles City County?

8. What is the longest (total length) legged species of salamander found in Charles City County?

9. True/False
The Mabee's salamander is the only salamander native to Virginia on the endangered list.

Answers can be found on page 12

Events

1) Reptile Weekend at the VLM
2) Hampton Roads Herp Presentation
3) GPS Adventure Workshop

Reptiles! Bizarre and Beautiful, Feb. 17-19

Reptile expert and conservationist Bruce Shwedick will be the featured guest at the Virginia Living Museum **Feb. 17-19** as part of the museum's annual "Reptiles! Bizarre and Beautiful" weekend. Meet members of the world's most fascinating family of animals during Bruce Shwedick's educational and entertaining Reptile Discovery program (www.reptilediscovery.com). This program features a yellow-footed tortoise from Brazil, an alligator snapping turtle from the Mississippi river, a Nile crocodile, an anaconda and "Banana Boy," a 16-foot albino python from Thailand. Learn about their natural history and conservation and don't forget your camera!

Shwedick has shared his knowledge and fascination of reptiles with audiences of all ages in schools and on college campuses in 35 states. He lectures annually on the biology of venomous snakes and snakebite for medical personnel serving in the U.S. Armed Forces. As a member of the IUCN/SSC (International Union for Conservation of Nature and Natural Resources/Species Survival Commission) Crocodile Specialist Group he is actively involved in the conservation of endangered crocodilians found in the Caribbean and throughout Africa and Asia. He has authored numerous articles on crocodile husbandry and conservation and is an instructor for the AZA's (Association of Zoos and Aquariums) Crocodilian Biology and Captive Management Course. Known as Croc School, this professional development course for zookeepers and aquarists is held each year in Florida at the St. Augustine Alligator Farm and Zoological Park.

Museum visitors can see a wide variety of native and exotic reptiles and amphibians on display. See an African Spurred Tortoise and all three venomous snakes found in Virginia: rattlesnake, cottonmouth and copperhead.

Exotic reptiles will be displayed by Virginia Reptile Rescue and the Foundation for Iguana Rescue, Safety and Training (FIRST Inc.). These two programs shelter and find new homes for pet reptiles and educate people about the life-long commitment they are making when they purchase a reptile. Visitors will also see displays by the Virginia Dept. of Game and Inland Fisheries and the Virginia Herpetology Society.

There will also be live animal presentations throughout the day with reptiles native to Virginia. Children can make crafts and enjoy games and themed events. The Virginia Living Museum is located in Newport News. Call 757-595-1900 for further information or check the web site at www.thevlm.org.

2) Hampton Roads Herp Presentation

The York River Group of the Sierra Club will host a presentation on reptiles and amphibians native to the Hampton Roads area (southeast Va) at their monthly meeting at 7:00 p.m., Wednesday, **May 16, 2007**. The program will be held at the visitors center of Sandy Bottom Nature Park, 1255 Big Bethel Road, Hampton, Va. 23666. Kory Steele will be the guest speaker, presenting the herps common to Hampton Roads. He will concentrate on the native frogs and their advertisement calls that are so prevalent that time of year. After the presentation, Kory will lead a field trip just outside the visitors center, and attendees will hear and identify wild frogs in their natural habitat. Open to the public.

3) GPS Adventure Workshop 2007

March 2-3 at the Holiday Lake 4-H Center in Appomattox County. This Friday evening/all day Saturday workshop will cover a variety of Global Positioning System topics: GPS receiver operation, topographic maps and magnetic compasses, digital mapping, GPS as a tool in youth education, using GPS technology in natural resources field work and research (area calculation, sampling, GPS/FRS radio capabilities, etc.). Participants will be using our Virginia 4-H GPS Navigation Education Kits and/or other advanced GPS

equipment in both e-classroom sessions and during a variety of field exercises (culminating with GPS Search & Rescue of "Bubba" the lost hunter!). The workshop is sponsored by the Virginia 4-H Natural Resources & Environmental Education (NREE) Curriculum Committee in coordination with Frog Holler' GPS Education. The $48.00 fee covers registration, meals, lodging, and instructional materials. For more information and registration materials, contact Mike Clifford at: mjc4h@vt.edu or frogholler@tds.net or 804.561.5411

Conservation Key

Tim Christensen
VHS Conservation Committee Chair

CONGRESSIONAL WILDLIFE REFUGE CAUCUS

Whether we're discussing reptiles and amphibians, birds or mammals, probably the most important aspect of all wildlife species conservation is the availability of suitable habitat. As Virginia increasingly becomes more urban so increases the risk of further habitat loss and fragmentation. Private land represents a significant source of habitat but preserving the associated natural resources is challenging. Federal land too comprises natural resources but preservation is no less simplistic.

A prime example of this issue is the National Wildlife Refuge System. Beset by staffing and funding shortfalls, the refuge system is in crisis. Numerous problems such as invasive species and development encroachment, affect the quality of habitat needed by native wildlife. Operation of many refuges is performed with very minimal staffing and some 200 refuges (of the 545 refuges nationwide) do not have on-site staff. There are 14 refuges in Virginia and some of these refuges are included in that 200 figure.

Fortunately, Congressional action has been taken in response to these concerns. House Representatives Ron Kind (D-WI) and Jim Saxton (R-NJ), along with Michael Castle (R-DE) and Mike Thompson (D-CA), led a bipartisan effort in the U.S. House of Representatives to create the new Congressional Wildlife Refuge Caucus. The Caucus created a voice for the refuges in Congress and overall supports increasing the awareness and needs of the Refuge System. As of December 7, 2006, the Caucus comprises 125 Congressional members with 40 states represented.

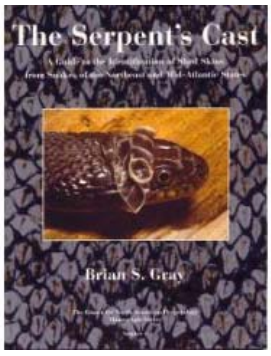
Where does Virginia stand in this effort? Virginia is among those states represented. Of the 11 Districts, 6 were members as of December 7th. These members are Rick Boucher (D, 9th), Jo Ann Davis (R, 1st), Thomas Davis (R, 11th), Thelma Drake (R, 2d), James Moran (D, 8th) and Frank Wolf (R, 10th). The following Representatives have not obtained membership in the Caucus as of the above date: Robert Scott (D, 3d), Virgil Goode (R, 5th), Eric Cantor (R, 7th), Randy Forbes (R, 4th) and Bob Goodlatte (R, 6th).

More information regarding this effort is available. Visit the National Wildlife Refuge Association website at http://www.refugenet.com/. Is your District involved?

Book Review

The Serpent's Cast - A Guide to the Identification of Shed Skins from Snakes of the Northeast and Mid-Atlantic States. by Brian S. Gray
$20 from Amazon.com

Joy Ware
VHS Research Committee Chair



This book is an invaluable asset for anyone who enjoys searching for snakes, and it is essential for anyone who wishes to perform research using shed snake skins. The paperback book is organized into three sections. Part one covers the basic biology of skin shedding by snakes, as well as appropriate shed skin collection techniques. Part 2 details how to clip, spread, and flatten the skins to maximize successful identification. Identification keys, replete with details of skin morphology and photographs of key components of shed skins from 31 species, form Part 3. Another benefit of the book is that working through the ID keys for each species makes one aware of some of the details of differences in scale structure that you might not notice on a live snake.

An additional benefit is the author's provision of clear directions for the preservation of portions of shed skin by lamination. He also notes the down side of laminating these specimens, ie, they are no longer accessible for DNA and other types of analysis, but then indicates a good compromise that permits both approaches: laminate the head, ventral region and small segment of the body, then keep the remaining shed skin in a plastic bag until used for further analysis.

Overall, the book is clearly written and the photographs of the 31 species are excellent. Identifying a snake from a shed skin is a challenge (except for black rat snakes!), and in a few cases I found some of the technical terminology unclear. However, these were minor issues.

The book costs only about $20 and is available from Serpents Tale Natural History Book Distributors either by emailing zoobooks@acegroup.cc or via Amazon.com. The amount of work required to produce this book must have been amazing. I highly recommend it for herpers!

With head raised regally, and gazing at me with lidless eyes, he seemed to question with flicks of his long forked tongue my right to trespass on his territory.
Carl Kauffeld

Herpcetera

"Cool" Herps in 2006

Tim Christensen and Kory Steele

It's interesting to note seemingly unique observations regarding reptile activity during low ambient temperatures. Tim Christensen participated in the 2006 Christmas Bird Count (an international effort organized by the Audubon Society) on December 16th in the Tabb area of York County. Some 46 species of birds were identified for this area but the interesting observation was a yellowbelly slider basking on a tire in a pond. It was a sunny day with an ambient temperature of barely reaching 60 degrees. This observation paled though, to Kory Steele's observation of a black racer basking on March 24th with the high temperature of only 40 degrees!

Red-footed Tortoise Found

Tim Christensen

During routine fieldwork, we found a red-footed tortoise wandering about a dredge spoil facility at Fort Eustis in November. Certainly, this was not something we expected to encounter! Thanks to assistance from the Newport News Discovery Center and the Virginia Department of Game and Inland Fisheries, the specimen was temporarily held in more comfortable conditions and then transported to the Luray Zoo. We were fortunate to have found it as cold temperatures were in the forecast. To the best of my knowledge this species is native to South America and apparently part of the exotic pet trade; however, I don't recall ever seeing it in pet stores. It's uncertain as to how it came to be where we found it and one could assume either it escaped or was intentionally released by its owner.

WHERE CAN YOU FIND ALL OF THESE HERP ITEMS??

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

Online Resources

1) Hellbender Home Page Updated
2) Digital Morphology Website
3) Box Turtle Teacher's Handbook
4) Box Turtle Literature
5) Database Details Pesticide Effects on Reptiles, Amphibians

1) Hellbender Home Page Updated

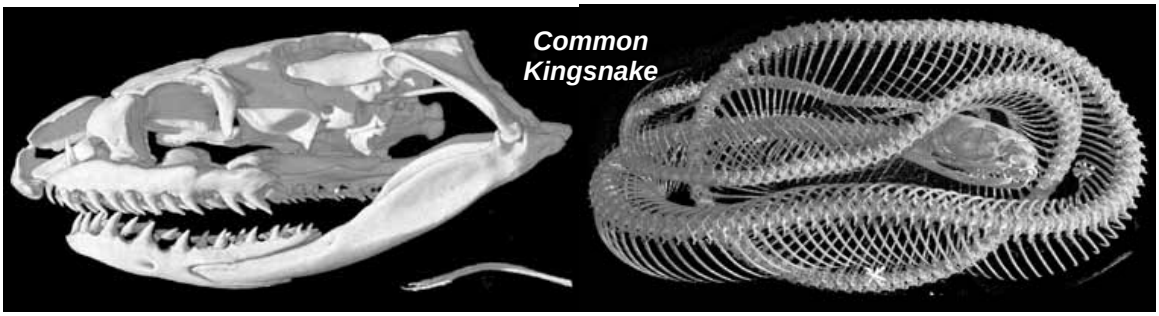
Promoting the Conservation of North American Giant Salamanders

Whether you're a biologist or naturalist looking for more information about Hellbenders or you've caught a Hellbender on a fishing line, I hope you find this page useful. Hellbenders are one of the largest salamanders in the world, rivaled only by their cousins in China and Japan. These strange, but interesting creatures once thrived throughout the eastern United States.

Today they are limited to relatively few healthy stream systems, mainly in areas that have been protected from human development. Please click on the links to the left on the home page to learn more about Hellbenders, and don't forget to check out the short videos -- Hellbenders look a lot more interesting underwater.
http://www.hellbenders.org/

2) Digital Morphology Website

Digital Morphology serves unique 2D and 3D visualizations of the internal and external structure of living and extinct vertebrates, and a growing number of 'invertebrates'. The Digital Morphology library contains nearly a terabyte of imagery of natural history specimens that are important to education and central to ongoing cutting-edge research efforts. The Digital Morphology library site now serves imagery, optimized for Web delivery, for almost 300 specimens contributed by more than 80 collaborating researchers from the world's premiere natural history museums and universities. The information core for the Digital Morphology library is generated using a state-of-the-art high-resolution X-ray computed tomographic (X-ray CT) scanner. This instrument is comparable to a conventional medical diagnostic CAT scanner, but with greater resolution and penetrating power.



3) Box Turtle Teacher's Handbook

The Box Turtle Connection: A Passageway into the Natural World

This informative book is a good way to get introduced to box turtles and learn how to use them as a subject for natural history studies in the classroom. As the title implies, the purpose of the book is to bridge children, that are often disconnected from nature, to a highly revered animal currently in

decline and deserving of more attention. The book really is geared towards teachers and their students and is fairly comprehensive in that manner. Numerous ABC boxes (Applications of Box turtle studies in the Classroom) are included throughout the text that provide insight to the use of box turtles for classroom studies. The chapters that are included to provide enough information to conduct research and involve students, including how to conduct surveys, mark for recapture studies, captive turtle care, and how to attach transmitters for radiotelemetry studies. The authors even provide sample data sheets and student permission forms. This is a must-have for any science teacher!
The book is available for free download at: http://www.uncg.edu/~absomers/BoxTurtleBook.pdf

4) Digital Froglogger Website

The system described by Peterson & Dorcas (1994), and now commonly known as a Froglogger, enables the researcher to record audio without supervision for later analysis. This enables the monitoring of animal calls during intervals and long periods of time that would be impossible for a person or too expensive. For example, you can record a few minutes every hour during several days or weeks. The name can be misleading, as the Froglogger has many applications not only for frogs and toads, but also for insects, birds and mammals.

One of the limitations of the original Frogloggers is that the recordings were made in cassettes, which take time to digitize to a computer and have a capacity of 90 minutes. I developed Digital Frogloggers, which use digital recorders instead of the cassette recorders. The digital recorders simplify data collection by recording directly to digital media, like CompactFlash memory cards. These systems also have more capacity than cassettes, and with bigger memory cards in the market today, more than 3 hours of CD quality sound can be stored per gigabyte.

The next step in the development of Digital Frogloggers is the use of miniature computers. These computers can record with more flexibility than commercial recorders. In addition to this flexibility, more time can be recorded by reducing the sampling rate, sensors can be added to record environmental variables, or wireless capabilities can be added to transmit the recording by Wi-Fi. The author has a website with Digital Froglogger systems for sale and a wiki for those who want to contribute in the development of this technology at http://froglogger.coquipr.com.
Luis J. Villanueva-Rivera San Juan, Puerto Rico ljvillanueva@coquipr.com

4) Box Turtle Literature

A Working Guide To The Literature On Box Turtles (*Terrapene*):
Life History, Evolution, Fossil Record, External Morphology, Conservation
Compiled by: C. Kenneth Dodd, Jr.
Hundreds of journal article citations:
http://cars.er.usgs.gov/Center_Publications/box_turtle_bib1/box_turtle_bib1.html

5) Database Details Pesticide Effects on Reptiles, Amphibians

The citizens group Californians for Alternatives to Toxics, CATs, has created a user-friendly database of the most recent international research about the effects of pesticide use on amphibians and reptiles. "By bringing together current research on beleaguered amphibians and reptiles, we have made this global information readily accessible to academics, neighborhood activists and students," said Patty Clary, CATs programs director. The new database is available at the Californians for Alternatives to Toxics website at:
http://www.alternatives2toxics.org

News

1) Bullfrogs as Fungus Vehicle

The emerging amphibian pathogen Batrachochytrium dendrobatidis globally infects introduced populations of the North American Bullfrog, *Rana catesbeiana*. 2006 Biology Letters 2: 455–459. Trenton W. J. Garner, Matthew W. Perkins, Purnima Govindarajulu, Daniele Seglie, Susan Walker, Andrew A. Cunningham and Matthew C. Fisher

Abstract: *Batrachochytrium dendrobatidis* is the chytridiomycete fungus which has been implicated in global amphibian declines and numerous species extinctions. Here, we show that introduced North American Bullfrogs (*Rana catesbeiana*) consistently carry this emerging pathogenic fungus. We detected infections by this fungus on introduced Bullfrogs from seven of eight countries using both PCR and microscopic techniques. Only native Bullfrogs from eastern Canada and introduced bullfrogs from Japan showed no sign of infection. The Bullfrog is the most commonly farmed amphibian, and escapes and subsequent establishment of feral populations regularly occur. These factors taken together with our study suggest that the global threat of *B. dendrobatidis* disease transmission posed by Bullfrogs is significant.

A gratis downloadable pdf of this paper is available from the CNAH PDF Library at http://www.cnah.org/cnah_pdf.asp

2) New Book on the Spotted Turtle

"The Spotted Turtle: North America's Best," is a new book by naturalist Al Roach. It features much interesting natural history information, including photos of the cranberry bogs and water-filled pools that now are home to many of the remaining populations of this chelonian in New Jersey. The book contains important information for conservation biologists about breeding and reintroduction of this turtle. It also has an excellent chapter on the conservation status of this species in every state in which it occurs. The author is a graduate of Temple University and has spent over 14 years observing and working with Spotted Turtles.

Living Art Publishing 71 pages, 50 color photos, 1 map
Available for $12.95 + $2.00 shipping & handling from
http://www.livingartpublishing.com

3) Buffer Zones for Salamander Conservation

Limitations Of Regulated "Buffer Zones" For The Conservation Of Marbled Salamanders. Lloyd R. Gamble, Kevin McGarigal, Christopher L. Jenkins, Brad C. Timm. Wetlands, Vol 26, Issue 2, pp.298-306

Abstract: Most amphibians that breed in seasonal wetlands are predominantly terrestrial animals that require "upland" habitats for the majority of their life cycles. However, wetland regulations aimed partially at protecting wildlife values are often limited to the wetland basins and small terrestrial "buffer zones" that typically extend 30 m or less from the wetland edge. In this study, we assessed whether a common buffer zone (i.e.,30 m) is sufficient for the conservation of marbled salamanders (*Ambystoma opacum)*. We installed and monitored two concentric and continuous drift fence arrays (3 m and 30 m from the pond margin) around each of three seasonal ponds in western Massachusetts, USA. We quantified the numbers and percentages of breeding adults and emerging juvenile salamanders that immigrated from and/or emigrated beyond the 30-m fences. In addition, we recorded incidental year-of-emergence captures of juveniles at more distant drift fences that were in place for a broader study. Of the breeding

adults captured immigrating to the basins at 3-m fences, 84-96% were first captured at 30-m fences, and corrections for capture probabilities suggested that nearly 100% of these individuals originated beyond 30 m from their breeding sites. Of the newly emerging juveniles captured emigrating from the basins at 3-m fences, 58-85% were subsequently captured at 30-m fences and 284 juvenile captures were recorded at distances between 111 and 1,230 m (median = 269.2 m) from natal ponds. Our findings highlight the dramatic limitations of existing wetland regulations with regard to upland habitat use by mole salamanders (family Ambystomatidae) and the need to approach conservation of these animals both at broader scales and with more comprehensive and innovative strategies.

4) Effects of Global Warming on Red Backed Salamanders.

Effects of Warming Conditions in Eastern North American Forests on Red-Backed Salamander Morphology James P. Gibbs And Nancy E. Karraker. Conservation Biology Volume 20 Issue 3, Page 913 - June 2006

Abstract: Several studies have reported climate-associated changes in phenotypically plastic traits of amphibians, yet it remains unknown whether amphibians can manifest an evolutionary response to global climate change at the rate and magnitude that it is occurring. To assess this issue, we examined temporal change in the morphology of the red-backed salamander (Plethodon cinereus), a small, abundant woodland salamander distributed widely in eastern North America with two distinct morphotypes: striped individuals associated with cooler microclimates and unstriped individuals associated with warmer microclimates. We compiled morph frequencies for 50,960 individual salamanders from 558 sites as recorded in the published literature and in unpublished field notes of herpetologists between 1908 and 2004. We observed that striping probability increased with increasing latitude, longitude, and elevation and decreased (from 80% to 74% range wide) with time. The combined forces of regional climate warming and, particularly, forest disturbance have evidently been sufficient to cause morphological evolution in this amphibian over the last century.

5) Northern Watersnake not Endangered in Potomac River

The U.S. Fish and Wildlife Service today announced a petition seeking Endangered Species Act protection for the northern water snake failed to provide substantial scientific information indicating protection is warranted.

The petition sought protection of the northern water snake in the upper tidal Potomac River as a distinct population segment based on its possible genetic isolation. A DPS is eligible for protection under the Act if it meets certain criteria, even if the overall population of the species does not warrant protection. However, the petition provided no substantial scientific evidence that these northern water snakes are isolated from other populations of the species or are significant in relation to the entire species, according to Martin Miller, chief of endangered species for Service's Northeast Region.

The petition asked the Service to place the upper tidal Potomac River northern water snake on the List of Endangered and Threatened Wildlife on an emergency basis and to classify it as endangered. The Service also found that temporary emergency protection is not warranted, Miller said. The Service received the petition in 2000 from Dr. Richard M. Mitchell of Alexandria, Va.

Northern water snakes are abundant in the United States and are found from Quebec to North Carolina and from the Atlantic coast west to Colorado. Often mistaken for water moccasins, the northern water snake is not venomous.

The petition finding was published in the "Federal Register" on Dec. 6 and may be seen at http://a257.g.akamaitech.net/7/257/2422/01jan20061800/edocket.access.gpo.gov/2006/E6-20542.htm

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"Sometimes I think the surest sign that intelligent life exists elsewhere in the universe is that none of it has tried to contact us."
Calvin and Hobbes (Scientific Progress Goes 'Boink', 1991)

Answers from page 5

Herp Trivia Answers

1. Which snakes are found in Charles City County?
E. All the above: Ribbon and Garter Snakes, Mole and Eastern King Snakes, Northern and Brown Water Snakes, Corn and Rainbow Snakes

2. Which snake has not been found in Charles City County?
E. Eastern Mud Snake

3. Which glass lizard is found in Charles City County?
Eastern Slender Glass lizard (*Ophisaurus attenuatus longicaudus*)

4. There are how many species of frogs in Virginia?
C. 27

5. Which frog is not found in Charles City County?
A. Little Grass Frog

6. Have timber (canebrake) rattlesnakes been documented in Charles City County?
No

7. What is the longest (total length) species of salamander found in Charles City County?
Amphiuma

8. What is the longest (total length) legged species of salamander found in Charles City County?
Amphiuma (It only has two, but they are legs nonetheless)

9. True/False
The Mabee's salamander is the only salamander native to Virginia on the endangered list.
False. The Eastern Tiger and Shenandoah salamanders are also listed
http://fwie.fw.vt.edu/VHS/salamanders_of_virginia.htm

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

Virginia Literature

These selections represent articles published or In Press, July to January 2006. 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 Joy Ware.

Reptiles

Losos JB, Schoener TW, Langerhans RB, Spiller DA. : Rapid temporal reversal in predator-driven natural selection. Science. 2006 Nov 17;314(5802):1111.

Steen, David A. and Lora L. Smith. 2006. Road surveys for the turtles: Consideration of possible sampling biases. Herpetological Conservation and Biology. 1 (1): 9-15.

Glorioso, Brad M. and Matthew L. Niemiller. 2006. Using deep-water crawfish nets to capture aquatic turtles. Herpetological Review. 37 (2): 185-187.

Kornilev, Yurii V., Steven J. Price and Michael E. Dorcas. 2006. Between a rock and a hard place: Responses of Eastern Box Turtles (*Terrapene carolina*) when trapped between railroad tracks. Herpetological Review. 37 (2): 145-148.

Janzen FJ, Phillips PC. Exploring the evolution of environmental sex determination, especially in reptiles. J Evol Biol. 2006

Bell B, Spotila JR, Congdon J. : High incidence of deformity in aquatic turtles in the John Heinz National Wildlife Refuge. Environ Pollut. 2006 Aug;142(3):457-65. Epub 2005 Dec 15.

Amphibians

Liebgold, EB, , Cabe, PR, and Jaeger, RG, and Leberg, PL. : Multiple Paternity In A Salamander With Socially Monogamous Behavior. Mol. Ecol. Nov 15(13): 4153-60, 2006.

Soderman F, van Dongen S, Pakkasmaa S, Merila J. Environmental Stress Increases Skeletal Fluctuating Asymmetry In The Moor Frog *Rana arvalis*. Oecologia. 2006 Nov 29.

Gibbons JW, Winne CT, Scott DE, Willson JD, Glaudas X, Andrews KM, Todd BD, Fedewa LA, Wilkinson L, Tsaliagos RN, Harper SJ, Greene JL, Tuberville TD, Metts BS, Dorcas ME, Nestor JP, Young CA, Akre T, Reed RN, Buhlmann KA, Norman J, Croshaw DA, Hagen C, Rothermel BB. Remarkable amphibian biomass and abundance in an isolated wetland: implications for wetland conservation. Conserv Biol. 2006 Oct;20(5):1457-65.

Gomez-Mestre I, Touchon JC, Warkentin KM. Amphibian embryo and parental defenses and a larval predator reduce egg mortality from water mold. Ecology. 2006 Oct;87(10):2570-81.

Liebgold, EB, Cabe, PR, jaeger, RG, and Leberg, PL. Multiple paternity in a salamander with socially monogamous behaviour. Mol. Ecol. 2006 Nov;15(13):4153-60

Bury, R. Bruce. 2006. Natural history, field ecology, conservation biology and wildlife management: Time to connect the dots. Herpetological Conservation and Biology. 1 (1): 56-61

Knapp, Roland A. and Jess A. T. Morgan. 2006. Tadpole mouthpart de-pigmentation as an accurate indicator of Chytridiomycosis, an emerging disease of amphibians. Copeia. 2006 (2): 188-197.

Leclair, Maria Helena, Marc Levasseur and Raymond Leclair, Jr. 2006. Life-history traits of *Plethodon cinereus* in the northern parts of its range: Variations in population structure, age and growth. Herpetologica. 62 (3): 265-282.

Kinkead, Karen E., J. Drew Lanham and Richard R. Montanucci. 2006. Comparison of anesthesia and marking techniques on stress and behavioral responses in two Desmognathus salamanders. Journal of Herpetology. 40 (3): 323-328.

Johnson, MS, Suski, J, and Bazar, MA.: Toxicological responses of red-backed salamanders (*Plethodon cinereus*) to subchronic soil exposures of 2,4-dinitrotoluene. Environ Pollut. 2006 Nov 27

Gomez-Mestre I, Touchon JC, Warkentin KM. Amphibian embryo and parental defenses and a larval predator reduce egg mortality from water mold. Ecology. 2006 Oct;87(10):2570-81.

Johnnson PT, Preu ER, Sutherland DR, Romansic JM, Han B, Blaustein AR.: Adding infection to injury: synergistic effects of predation and parasitism on amphibian malformations. Ecology. 2006 Sep;87(9):2227-35.

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http://www.cafepress.com/vaherpsociety

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.

Common Mudpuppy
(*Necturus maculosus maculosus*)

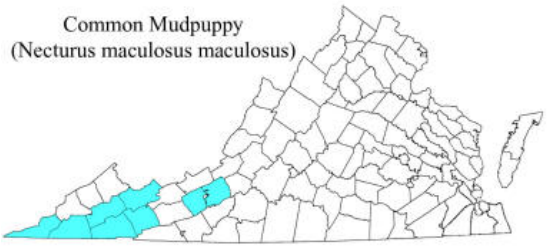
Genus: *nektos* is Greek for "swimming", *oura* is Greek for "tail".
Species: *maculosus* is Latin meaning "full of spots". Referring to the spotted dorsum.

Habitat:
Mudpuppies live in rivers, weedy ponds, some large lakes, and in lower regions of streams that do not dry up in the summer. They are rarely seen, but may be found under rocks in shallow water.

Physical description:
Mudpuppies are between 8 and 13 inches (20-33 cm) in length. They are neotenic (permanent larvae), and retain large, maroon colored external gills throughout their life. They have a general coloration of gray or rusty brown, to nearly black. They are marked with black or blue-black spotting or blotching. The spotting pattern ranges from a few spots, to many spots, or spots merging to form stripes. The head of all mudpuppies is flat, and the tail is short and laterally flattened for swimming. All four limbs are fully functional and are not reduced like those of sirens or amphiumas. Males and females look very similar.

Reproduction
Courtship and mating take place in the fall, but some southern populations breed primarily in winter. Fertilization is internal. The following spring, the female lays the eggs. She digs a nest cavity under stones or logs, at water depths of 10 to 150cm. Abundant bottom debris and moving water are required during spawning. Females lay between 18 and 180 eggs per clutch. Females attach eggs to the underside of debris for protection. Eggs are between 5 and 11 mm in diameter, and hatch in 4 to 8 weeks. The female stays with the eggs throughout the incubation period. Larvae are 20 to 25 mm in length. It takes 4 to 6 years for a mudpuppy to reach sexual maturity.

Lifespan/Longevity
Mudpuppies have been known to live upwards of 20 years.



Behavior
The Mudpuppy is totally aquatic. It is usually nocturnal, although in murky or weedy water, it may be active during the day. Mudpuppies are solitary animals, coming together only to reproduce in the fall. Females will also guard their egg clutches in the spring, until they hatch. They are active throughout the year, and do not hibernate. Individuals do not appear to migrate , although some seasonal movement may occur. Large fish and wading birds prey upon mudpuppies. Mudpuppies avoid predators by hiding under logs, rocks, or thick vegetation.

Food Habits
The mudpuppy eats a variety of aquatic organisms. It is an opportunistic feeder and will eat whatever it can catch. Crayfish are a major part of its diet. Insects, fish, worms, and snails are also foods of the mudpuppy.

Mudpuppies can be seen on display at the Virginia Living Museum in Newport News, Va.

Source: Siebert, E. 2000. "Necturus maculosus" (On-line), Animal Diversity Web. Accessed January 21, 2007 at http://animaldiversity.ummz.umich.edu/site/accounts/information/Necturus_maculosus.html .
Also see Caudata Culture: http://www.caudata.org/cc/species/Necturus/N_maculosus.shtml

NOTICE to Members: If you have an email address, please send it to Paul Sattler (pwsattle@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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City: _____ State: _____ Zip: _____

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