Virginia Herpetological Society Newsletter

Volume 20, Number 1

February 2010

Contents

Our own Conservation Committee Chair, Tim Christensen, was able to do some field herping abroad recently, in Ecuador. Exciting place for herping, as well as 'bugging'. See the details on the VHS website.

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

What is Batrachophobia? Herp Trivia page 6

Alert!

Virginia Reptile Rescue needs adopters! See story on page 13!

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Wood Frog

COMING EVENTS

EVENT	LOCATION	DATES
Reptiles Bizarre & Beautiful Wknd	VA Living Museum, Newport News	February 13-15
Survey of New Powhatan State Park	Powhatan State Park, Powhatan County	May 8
VHS Annual Survey & Meeting	Mason Neck State Park, Fairfax County	May 21-23
VHS HerpBlitz	Eastern Shore of Virginia, exact location TBD	June 11-13

Home Page: http://www.vaherpsociety.com
Message Board: http://groups.yahoo.com/group/VaHS
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VHS Business

1) Message from the President

Kory Steele – (colchicine@gmail.com**)**

I would like to thank the VHS membership for their vote of confidence by electing me as president in the last meeting at Three Lakes Nature Center. Although I am certainly not new to the VHS, becoming president seems to have opened my eyes to new possibilities that I had not considered before. With the help of our new vice president, Larry Mendoza, we have been able to come up with a very long list of goals that we want to accomplish during our term. Our primary goal will be to attain 5013C nonprofit status. The outgoing president and current newsletter editor, Susan Watson, has laboriously filled out the necessary paperwork and has submitted it to the IRS. This will be a significant event for the VHS, as it will enable us to take donations. By being able to take donations instead of relying solely on memberships, we will be able to fund more research projects, and hopefully increase the reach of the VHS in Virginia's herpetology.

You'll also see some other new faces as VHS officers. Emily Steele, my wife, has moved into the co-treasurer position. In the short amount of time in this position she has gone through the books and reorganized our files. She also plans on using accounting software, for the first time in the VHS, to help keep track of our funds. This will also help us to become more transparent in accordance with our future nonprofit status.

Scott Duncan is now co-secretary. Scott has been active in the VHS for a number of years and you have seen his name in previous newsletters as he has helped out with the Herp Trivia. Scott has been the source of entertainment on a number of VHS surveys, and I am glad to have him on board.

Thanks to Paul Sattler for his continued contributions to the VHS and performing another term as Editor of Catesbeiana.

I'm going to give you a sample of some of the things that we are currently working on, just keep in mind that we have not finalized these proposed membership benefits.

1) Provide membership cards to all of our members
2) Collaborate with Virginia's zoos and aquariums by having them offer discounts to VHS members. The VHS would also offer discounts on memberships to zoo and museum members.
3) Providing discounted VHS memberships for those that sign up for multiyear memberships.
4) Reinitiate online membership payments.
5) Instead of focusing solely on field surveys, we are working on getting behind-the-scenes tours at various zoos and aquariums for VHS members.

We have a lot of ideas for improving the VHS, and the above items are just a sample. Although a lot of the ideas are more involved with how the VHS runs internally, I am hoping to make a VHS membership a better experience. I highly encourage you to contact me with any ideas or thoughts on how to improve the VHS, almost any idea will be considered!
colchicine@gmail.com

2) VHS New Officers:

President: Kory Steele

- Kory has been a member of the VHS for eight years, and has been in the executive committee for seven of those years. Kory has been the vice president, and for the last four years has been the newsletter editor. Kory got interested in herrpetology rather late in life compared to most other herpers. After getting a green iguana, he decided to take a herpetology class under the late Dr. Barbara

Kory with a black racer

Savitzky. That led to a parttime job at the Virginia Living Museum, and eventually the position of Herpetology Curator. Kory has been working in the Environmental Consulting field for the past 5 years, and lately has been specializing in Geographic Information Systems (GIS).

Vice President: Larry Mendoza

- Larry has been with VHS for about 5-6 years, and has participated in numerous field surveys throughout that time. His background includes both a BS and MS in Biology from Virginia Commonwealth University (VCU). He has been involved in Snake Force 1 with Dr. Joy Ware, including pit tagging snakes, blood collection from eastern fence lizards and five-lined skinks, and various other data collection of various herpetofauna at 3 National Wildlife Refuges (James River, Rappahannock River Valley, and Presquile) in order to gather data on overall health of herpetofauna in these locations in regards to pollution, non-native and native disease, stress, and other factors. This project will begin its 5th year in 2010. Larry has also conducted lab work, as well as field work, with Dr. Charles Blem on oxygen consumption of northern and brown watersnakes. This work entailed capturing snakes and developing a technique to measure oxygen consumption and breathing rates of snakes using masks as opposed to chambers. Larry and Dr. Blem published a paper on this work, in Herpetological Review, Vol. 33, No. 2. Larry also worked for about a year as a field herpetologist for a snake removal company.

Larry with an eastern cottonmouth

Co-Secretary/Treasurer: (Secretary): Scott Duncan

- Scott became interested in herps three years ago for reasons still unclear to him, joining the VHS on a whim after a trip to the 2006 Fall Meeting. He also enjoys the captive husbandry of exotic snakes, particularly green tree pythons. Scott holds a bachelors degree in Philosophy and has been working in systems integration consulting for the past 12 years. He lives in Midlothian with his wife and three daughters, and plays electric bass guitar for various bands when he's not traveling on business or in the field herping.

Scott with "Ted"

Co-Secretary/Treasurer: (Treasurer): Emily Steele

- Emily has been a member of the Virginia Herpetological Society for 4.5 years. During this time she served as secretary for one term and is currently the treasurer. She has participated in 14 herpetological surveys for the VHS, and has helped with Snake Force One. She has been in the medical field for over 12 years and lives with her husband, Kory (President), and son, Elijah, in Newport News. She has a strong interest, and talent, in nature photography. In addition to nature photography and field herping, Emily also enjoys gardening.

Emily on the AT

Immediate Past-President AND Newsletter Editor: Susan Watson

- Susan has been with the Virginia Herpetological Society for almost 9 years, participating in surveys during most of those years. She served as a substitute VHS Newsletter Editor for one issue, and one term each as Vice President and President. She has assisted with many educational programs. Working at the Virginia Department of Game and Inland Fisheries, since 2001, she is able to work with VHS as a part of her work, as well as being a part of it for pleasure and enlightenment. Before working for VDGIF, she worked for a short time at DEQ's Coastal Program, and before that at nature centers, including Three Lakes Nature Center and Aquarium and Rockwood Nature Center. These jobs came after earning a BS in Forestry and

Susan with a ratsnake

Wildlife Resources, option in Wildlife Science, at Virginia Tech. In addition to field herping, she also enjoys hiking, artwork (including drawing, painting, and woodcarving), and gardening, when time seldom allows. She lives in rural Prince George County with her husband, Noel.

HerpBlitz Committee Chair: Jason Gibson

- Jason has been a member of the Virginia Herpetological Society for 15 years. During this time he has served as Vice President once and President twice. He has participated in and/or planned 20 herpetological surveys for the VHS. To date he has published 46 papers on herp research conducted in Virginia. He is a biology instructor at Galileo Magnet High School in Danville. He received his BS in Biology from Old Dominion University and his MS in Environmental Studies from Longwood College.

Jason conquering a mighty 'snapper'.

3) Special Survey at New State Park Site: Powhatan State Park

A special VHS survey will take place at the site of Virginia State Parks' newest park, Powhatan State Park. This property is in Powhatan County along the James River. As a new property, Virginia State Parks needs surveys performed to determine what species are currently residing there. This survey will take place on Saturday, May 8, 2010. Keep checking the VHS Website, under "2010 Calendar of Events", for further details, as the date of this event gets closer.

4) VHS 2010 Annual Survey & Meeting

The Annual Survey and Meeting will be at Mason Neck State Park in Northern Virginia the weekend of May 21-23. The park is in southern Fairfax County, about 20 miles from Washington, D.C. Access to the park is via U.S. 1, then five miles east on Route 242 (Gunston Road) to the park entrance. (See 1 - Mason Neck State Park map & 2 - Google map to park address)

Camping Facilities at Pohick Bay Regional park (Contact: Todd Benson 703-339-6104)

Prices are as follows:

- Campsites (electric): $27 plus tax, up to four people, $3 extra per person over four persons and up to seven persons per camp site. These sites can hold up to 3 tents
- Campsites (non-electric) $23 plus tax, up to four people, $3 extra per person over four persons and up to seven persons per campsite. These sites also hold up to 3 tents
- Cabins $60 dollars plus tax, up to four persons, $3 dollars extra per person over four and up to six persons per cabin.
- There is a one night non-refundable deposit for the campsites and a 2 night non-refundable deposit for the cabins.

There are also some nearby hotels.

Everyone is encouraged to reserve early for cabins and campsites. Please keep checking the VHS Website, under "2010 Calendar of Events", for further details as the date for this event gets closer.

5) VHS Fifth Annual HerpBlitz:

This year will mark our fifth annual HerpBlitz. HerpBlitz is a weekend survey of reptiles and amphibians without a formal business meeting or other distractions. This year we plan to survey the Eastern Shore. We chose this location for two reasons. There has been only

minimal surveying effort for this site and it is a location which the VHS has not formally visited. Kiptopeke State Park is our tentative location for this event. Planning is in progress so please make sure to check the website and the spring issue of *Catesbeiana* for any changes or new information. The survey will be held on the weekend of June 12th and 13th. If you have any questions or would like to pre-register please contact Jason Gibson at frogman31@gmail.com. I hope to see many new and old faces at this event.

6) VHS Website Update:

Check out "Marty's 2009 Year in Review Timber Rattlesnake Report", the latest report from Marty Martin, including his prediction for 2010.

Also, go to "Photograph of the Month", which has been changed to "Digital Imagery of the Month" to accommodate video submissions, as well as photographs. There is also a link to the new VHS YouTube Channel, where all the videos will be housed.

NOTICE: Submissions for *Catesbeiana* Vol. 30 No. 1 are due March 1, 2010!
Please support the VHS by submitting any papers, field notes, or artwork for *Catesbeiana* to: Dr. Paul Sattler, Editor, *Catesbeiana,* .pwsattle@liberty.edu.

Events

Reptile Expos (1 | **2) Reptiles Bizarre & Beautiful at Va. Living Museum**

1) Reptile Expos

	Northern Va Reptile Expo	Richmond Reptile Expo	Southern Va Reptile Expo
Dates	2/20, 5/1, 8/28/10	3/28, 7/25/10	4/18/10
Location	Prince William County Fairgrounds Manassas, Virginia 20108	The Holiday Inn Select 1021 Koger Center Blvd. Richmond, VA 23235	Khedive Shrine Center 645 Woodlake Dr. Chesapeake, VA 23320-8930
Admission	$7 / $3 child	$8 / $3 child	$8 / $3 child
Time	9 am to 3 pm	10 am to 3 pm	10 am to 3 pm
Contact	**www.kingsnake.com/nva**	**www.kingsnake.com/richmond**	**www.kingsnake.com/sva**

To keep every cog and wheel is the first precaution of intelligent tinkering
-Aldo Leopold

2) ***Reptiles! Bizarre and Beautiful*** at the Virginia Living Museum, Feb. 13-15

Enjoy three days of native and exotic reptiles at the Virginia Living Museum, Newport News, Feb. 13-15.

The museum will exhibit some of the seldom seen reptiles in its collection including a Gila Monster, Blue-tongued Skink and a baby alligator. Among the exotic reptiles being exhibited are: Waxing Monkey Treefrog, Leaf Tailed Gecko, Water Monitor Lizard and several rattlesnakes. Reptiles are perhaps the most misunderstood and most feared creatures on earth, but the staff at the Virginia Living Museum wants the public to see their fascinating and attractive aspects as well. There will be live animal programs, reptile feedings and children's crafts and activities throughout the weekend.

"A Sky Full of Scales" will be shown in the Abbitt Planetarium. This live program explores how various reptiles use celestial objects for survival and discusses how to scan the skies for starry reptiles hiding above us. Also showing in the planetarium will be "Virginia Skies," a look at the current night sky, and "The Friendly Stars," an introduction to the planetarium for preschoolers.

Hours are: Saturday and Monday 9 a.m. to 5 p.m., Sunday noon to 5 p.m.

Cost: $15 adults, $12 children (ages 3-12); ages 2 and under and VLM members free. Planetarium shows are an additional $4 for non-members, $2 or vouchers for members.

The museum is located at 524 J. Clyde Morris Blvd., Newport News, I-64, exit 258A.
For more information visit the museum web site at www.thevlm.org or call 757-595-1900.

Herp Trivia

1. A person who has Batrachophobia, has a fear of what group of animals?
   a. Reptiles
   b. Snakes only
   c. Toads only
   d. Amphibians

2. Which Virginia native anuran has a breeding call that sounds like a person snoring?
   a. *Anaxyrus americanus americanus* (Eastern American Toad)
   b. *Gastrophryne carolinensis* (Eastern Narrow-mouthed Toad)
   c. *Lithobates palustris* (Pickerel Frog)
   d. *Hyla chrysoscelis* (Cope's Gray Treefrog)

3. Plethodontid salamanders are unique because they lack which of the following?
   a. Scales
   b. Lungs
   c. Teeth
   d. Legs

4. If you find a nest of spherical turtle eggs in an inland area of Virginia, which turtle species most likely laid these eggs?
   a. *Chelydra serpentina serpentina* (Eastern Snapping Turtle)

b. *Chrysemys picta picta* (Eastern Painted Turtle)
c. *Pseudemys rubriventris* (Northern Red-bellied Cooter)
d. *Glyptemys insculpta* (Wood Turtle)

5. The first major groups of amphibians developed during the Devonian period.
True
False

6. *Pantherophis alleghaniensis* (Eastern Ratsnake) is primarily a fossorial snake.
True
False

7. If a turtle falls into your canoe, as you paddle under tree branches, in which family does this turtle belong?
a. Emydidae (Pond and River Turtles)
b. Kinosternidae (Mud or Musk Turtles)
c. Chelydridae (Snapping Turtles
d. Cheloniidae (Sea Turtles)

8. What is the most obvious sexually dimorphic characteristic in *Chrysemys picta picta* (Eastern Painted Turtle)?
a. Coloration difference between males and females
b. Plastron length difference between males and females
c. Front claw length difference between males and females
d. Leg length difference between males and females

9. Identify this lizard by using the Va Herp Society Lizard Guide:
a. Has legs
b. Has longitudinal stripes
c. All scales smooth, flat, slightly overlapping
d. Has 5 or less dorsal stripes
e. Adult snout to vent length (SVL) is less than 50 mm (2 in)
f. Has 2 thin dark dorsolateral stripes
g. Frontonasal and rostral scales touch, and lacks supranasal scale

10. Which of the following species are listed as state threatened in Virginia (choose all that apply)?
a. *Pituophis melanoleucus melanoleucus* (Northern Pinesnake)
b. *Hyla gratiosa* (Barking Treefrog)
c. *Plethodon hubrichti* (Peaks of Otter salamander)
d. *Ophisaurus ventralis* (Eastern Glass Lizard)

Answers can be found on page 16

"Something like 70% of all rattlesnake bites involve alcohol, and I don't think it was the snake that was drinking."

- Jeff Corwin

Conservation Key

Tim Christensen (VHS Conservation Committee Chair), Todd S. Fredericksen, and David McCarthy

Snake Conservation: A Component of Pest Management

In the previous Conservation Key article, we discussed the value of herpetofauna from zoologist Marston Bates' perspective concerning the challenge of answering the question "What good is it?" Indeed, this question was answered from a broad standpoint. Essentially, the value relates to the considerable diversity of herpetofauna species and the relative large numbers of eggs and offspring they produce; this underscores the significance as food sources for predators, in addition to a large number of other interactions among these and other species (hence, Bates' "economy of nature"). We, as the Conservation Committee, felt that one aspect of value in particular requires special attention, and as the title implies, the focus specifically relates to snakes.

Despite that only 3 species of snakes in Virginia are venomous, many people still fear all snakes as a collective group. There are many explanations for this fear and the inability of some individuals to properly identify a species has led to many deaths of non-venomous snakes. Yet, whether snakes are viewed with fear or indifference, their role in pest control should be of interest to everyone.

The contribution to pest control by snakes has been noted informally, particularly with regards to consuming rodent and arthropod vermin that impact farming and agricultural productivity. Although such a role is of great benefit, the significance may be more vital concerning emerging infectious diseases. Particularly, this concerns zoonotic disease pathogens transmitted by ticks that are maintained in the environment by vertebrate organisms serving as competent reservoirs. Many of these reservoir species are also prey for snakes. Several rodent species have been shown to be parasitized by ticks and become infected with pathogens. Interestingly, Linzey (1998) described 27 species of rodents occurring in Virginia with likely 25 of these species serving as prey for snakes native to Virginia. Of the 30 species of snakes in Virginia, (Linzey and Clifford, 1981) record 13 species that preyed upon rodents, including squirrels and rabbits that are consumed by northern black racers (*Coluber constrictor*) and eastern ratsnakes (*Pantherophis alleghaniensis*). The three venomous species also contribute to rodent control; copperheads (*Agkistrodon contortrix mokasen*) and timber rattlesnakes (*Crotalus horridus horridus*) consume primarily rodents (Mitchell, 1994).

It cannot be stated that all rodents or small mammals are susceptible to infection by ticks; however, evidence exists to implicate several species. Possibly, the white-footed mouse (*Peromyscus leucopus*) is more familiar to the general public in that it is parasitized by nymphal and larval stages of the deer tick (*Ixodes scapularis*) that transmits the bacterial pathogen *Borrelia burgdorferi* which causes Lyme disease in humans (Brown and Burgess, 2001). *P. leucopus* however, is not the only competent reservoir; the eastern chipmunk (*Tamias striatus*) and meadow vole (*Microtus pennsylvanicus*) serve in this role as well in the eastern United States (Mather et al, 1989). True rodent pests such as Norway rats (*Rattus norvegicus*) have been found to be infected with *B. burgdorferi* (Hill and MacDonald, 2006).

Our concerns should not be limited to Lyme disease. *P. leucopus* and *M. pennsylvanicus* can also be infected via ticks with the protozoan *Babesia microti* that causes the disease babesiosis in humans and canids – simultaneously with *B. burgdorferi* (Anderson et al, 1986). *P. leucopus* is also known to harbor the pathogen *Anaplasma phagocytophilum* that causes Human Granulocytic Anaplasmosis (Telford et al, 1996). Other tick-borne pathogens occur in infected rodents such as the bacterium *Francisella tularensis* that causes tularemia (Jones et al, 1978a). This pathogen is also known to infect lagomorphs such as the Eastern cottontail rabbits (*Sylvilagus floridanus*).

Infection by hantaviruses should also be included in this context. While not transmitted via ticks, the virus does occur in rodent excreta and can become aerosolized leading to human

infection by inhalation. Though rare in Virginia, two cases have been reported in recent years.

There are several other reservoir species that snakes use as prey. Birds represent an equally important group of organisms that serve in both of these roles as well as contributing to the distribution of ticks and pathogens geographically (Olsen, 2007). While not necessarily considered "pests" in the traditional sense, they too serve as prey for several snake species. Several of the snake species noted above as preying on rodents are also cited by Linzey and Clifford (1981) as consuming birds and bird eggs.

We have only scratched the surface, but perhaps this short narrative provides more consideration of herpetofauna value. Other control methods of tick control exist such as pesticides; however, their use against ticks has its limitations and may have detrimental environmental effects. It would not be logistically or economically feasible (nor environmentally sound) to treat the habitats used by the various tick species, whereas natural biological resources, such as snakes, have a more direct involvement, perhaps benefitting the human species more than we know.

Literature Cited

Anderson, J.F., R.C Johnson, L.A. Magnarelli, F.W. Hyde and J.E. Myers. 1986. *Peromyscus leucopus* and *Microtus pennsylvanicus* simultaneously infected with *Borrelia burgdorferi* and *Babesia microti*. Journal of Clinical Microbiology. 23: 135-137.

Brown, R.N. and E. C. Burgess. 2001. Lyme borreliosis. Pp. 435-454 *In* E.S. Williams and I.K. Barker (Editors), Infectious diseases of wild mammals. Iowa State University Press.

Hill, C.A. and J.F. MacDonald. 2006. Lyme disease. Purdue Extension E-244-W, Purdue University Department of Entomology.

Jones, E.J., B.S. McGinnes and R.L. Kirkpatrick. 1978a. A survey of tularemia in piedmont Virginia. Virginia Journal of Science 29(2):62.

Linzey, D.W. 1998. The mammals of Virginia. MacDonald and Woodward Publishing Company, Blacksburg, Virginia, 459 pp.

Linzey, D.W. and M.J. Clifford. 1981. Snakes of Virginia. University of Virginia Press, Charlottesville and London, 173 pp.

Mather, T.N., M.L. Wilson, S.I. Moore, J.M. Cribeiro and A. Spielman. 1989. Comparing the relative potential of rodents as reservoirs of the lyme disease spirochete (*Borrelia burgdorferi*). American Journal of Epidemiology Vol. 130, No. 1: 143-150.

Mitchell, J. C. 1994. The reptiles of Virginia. Smithsonian Institution Press, Washington D.C. 352 pp.

Olsen, B. 2007. Borrelia. Pp. 341-351 In N.J. Thomas, D.B. Hunter and C.T. Atkinson (Editors) Infectious diseases of wild birds. Blackwell Publishing, Oxford, UK, 484 pp.

Telforde, S.R., J.E. Dawson, P. Katavalos, C.K. Warner, C.P. Kolbert and D.H. Persing. 1996. Perpetuation of the agent of human granulocytic ehrlichiosis in a deer tick-rodent cycle. Proceedings of the National Academy Sciences U.S.A. 93:6209-6214.

Those who dwell among the beauties and mysteries of the Earth are never alone or weary of life.

-Rachel Carson

Zoo Update

Virginia Living Museum **Newport News** **thevlm.org**

See the ad (page 6) about the Virginia Living Museum' s upcoming special weekend event, "Reptiles Bizarre and Beautiful"! More updates will be in the next issue of the VHS newsletter. With getting ready for this special event, and with the Herpetology Curator's upcoming special addition to her family, there are no other updates for this issue.

Virginia Zoological Park **Norfolk** **virginiazoo.org**

Recent Additions:
Tomato frogs (*Dyscophus antongilii*)
Ornate horned frogs (*Ceratophrys ornata*)
Danube Crested Newts (*Triturus dobrogicus*)
Argentine tegu (*Tupinambis merianae*)
Dying Poison Dart Frogs (*Dendrobates tinctorius*)
Births/Hatchings:
0.0.4 Bog turtles (*Glyptemys muhlenbergii*)
0.0.4 Copperheads (*Agkistrodon contortrix*)
0.0.3 Eastern box turtles (*Terrapene carolina carolina*)
0.0.6 Angolan pythons (*Python anchietae*)
*A bit premature, but our Danube Crested Newts have laid 50+ eggs, and the larva are developing within the eggs nicely
Future:
Aldabra tortoise (*Geochelone gigantea*) exhibit and holding building – should be completed by summer, depending on the economy, etc.
New venomous snake species (native and exotic…stay tuned!)
– Craig Pelke

Herpcetera

Join Save the Frogs! in Celebrating Save the Frogs Day!
In an effort to raise awareness of the plight of amphibians, the scientific community has declared April 30th, 2010 the 2nd Annual Save The Frogs Day. On this day we encourage the appreciation and celebration of amphibians by people from all walks of life.
http://savethefrogs.com/day

Three Interns Needed For Freshwater Turtle Studies

The Jug Bay Wetlands Sanctuary has openings for two undergraduate university interns to help with on-going studies of Eastern Mud Turtle (Kinosternum subrubrum subrubrum) and Eastern Box Turtle (Terrapene carolina carolina) population ecology and habitat use. Seven turtle species inhabit the marshes and beaver ponds in our study area along the Patuxent River estuary in central Maryland. Mud and box turtles occupy both deciduous forests and freshwater tidal wetlands. Our studies investigate habitat use, daily movements, population density, sex ratio, and natural history. Our goal is to understand the functional role of turtles within their wetland and upland ecosystems. We use radio telemetry, hoop traps, kayaks, canoes, and small boats to track and locate turtles. Interns work under the supervision of Sanctuary Director Chris Swarth.

The Sanctuary is a 1,700 acre ecological field station and environmental education center in southern Anne Arundel County, Maryland. The Sanctuary is operated by the county parks department and is part of the Chesapeake Bay National Estuarine Research Reserve. To learn more about the Sanctuary, visit www.jugbay.org.

Qualifications: Applicant must be a life science major at the junior or senior level (recent graduates are okay). Intern applicants should enjoy fieldwork and should be able to tolerate long hours in the field under hot, wet, and muddy conditions. Previous ecological field research is a plus. It helps to have a high degree of self-motivation.

In addition to helping with turtle studies, interns help with bird banding, reptile surveys, fish seining, and water quality studies. Each intern will also carry out an independent research project on some aspect of turtle ecology. At the end of the field season in August, interns give an oral presentation and prepare a written report on their independent project.

Work schedule: May 10 to August 15. An earlier state date may be okay. Interns work 5 days/week. Occasional weekend and evening work is required.

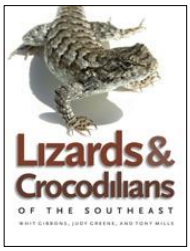
Housing: We do not have on-site housing. Interns will need to find their own housing. The Sanctuary is 18 miles south of Annapolis and 15 miles east of Washington, DC.

Stipend Award: $3,600. The Friends of Jug Bay, a non-profit citizen's organization, provides the Jug Bay Fellowship monetary award (stipend) which supports each intern. Additional funding comes from the Anne Arundel County government and the Chesapeake Bay National Estuarine Research Reserve.

Application Procedure: Please send a cover letter with statement of goals and explain why you want the position; a resume summarizing your education and work experience; transcripts (need not be "official"); and the names and email addresses of 3 references. Applications must be received by March 30.

Send application materials to Chris Swarth/Jug Bay Wetlands Sanctuary/1361 Wrighton. Rd./Lothian, MD 20711.

Book Review



Lizards & Crocodilians of the Southeast, by Whit Gibbons, Judy Greene, and Tony Mills. 2009. University of Georgia Press, 235pp.

Lizards & Crocodilians of the Southeast is another great addition to the series of guide books featuring herpetofauna of the southeastern United States. This book does a great job of describing not only native lizards and crocodilians of this part of the country, but also has great descriptions of non-natives that now reside in this part of the country. Of course, large numbers of the non-natives are in the area of southern Florida, but as many of us are aware, there are other species, such as the Mediterranean gecko that have made their way into Virginia and other states in the northern section of the southeast region of the U.S. This book is well organized, starting with general introductory information on lizards and crocodilians and information defining the southeastern U.S. region. The next portion of the book goes into more details about biodiversity, families of both native and exotic species, biology, and ecology. The species accounts section starts with a great introduction to the organization and order of these accounts, including an example to point out the organization of each account. Accounts include shortened quick guides to identification, and each quick guide features a graphic of the general size of adults and hatchlings. Two different range maps are included in all native species accounts: a large map showing only the southeast region and the species range in just this region, and a smaller map showing the species' entire range in the United States. Native species accounts also include the following sections of information: family name, physical description, variation and taxonomic issues, hatchling physical description, confusing species, distribution and habitat, behavior and activity, food and feeding, reproduction, predators and defense, and conservation issues. Introduced species accounts are a bit 'scaled' down and include a section on origin and distribution. There are 61 species described in this text. Throughout the book, beautiful photos of high quality can be found depicting species, habitat, and behaviors. Trivia buffs will delight at the many trivial facts highlighted, and titled "Did you know?", to the side of many accounts and other sections of the book. Last, but definitely not least, this book ends with a great section all about people who live with, work with, and study lizards and crocodilians. This includes general information on studying lizards and crocodilians, as well as how and why herpetologists study these groups. This section goes on to talk about keeping lizards as pets, including what are good or bad choices (species, enclosures, where to get them, etc.). This leads to the final part of this section of the book, conservation of these groups of species. Before the glossary, there are two nice charts, one showing which native species are found in which southeastern state, and the second shows the same information for introduced species.

This book is available for $17, plus some change, through University of Georgia Press, or it can be found for a couple dollars cheaper on Amazon.com. This would be a great book to add to any collection!

New Books

1) Title: **Amphibian Ecology and Conservation: Handbook of Techniques (Techniques in Ecology & Conservation)** (Paperback)
Author: C. Kenneth Dodd Jr. (Editor) 556 pages, USA, Oxford Univ. Press Price: $75
Description: This practical manual of amphibian ecology and conservation brings together a distinguished, international group of amphibian researchers to provide a state-of-the-art review of the many new and exciting techniques used to study amphibians and to track their conservation status and population trends. The integration of ecology and conservation is a natural outcome of the types of questions posed by these disciplines: how amphibians can and should be sampled, marked, and followed through time; how abundance and population trends are measured; what are the robust statistical methods that can be used in ecology and conservation; what roles do amphibians play in community structure and function; how do animals function in their environment; and what affects the long-term persistence of species assemblages?

Although emphasizing field ecology, sections on physiological ecology, genetics, landscape ecology, and disease analysis are also included. The book describes the latest statistical approaches in amphibian field ecology and conservation, as well as the use of models in interpreting field research. Much of this information is scattered in the scientific literature or not readily available, and the intention is to provide an affordable, comprehensive synthesis for use by graduate students, researchers, and practising conservationists worldwide.

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2) Title: **The Complete North American Box Turtle**
Authors: Carl J. Franklin, and David C. Killpack with foreword by C. Kenneth Dodd (who wrote the now classic “Natural History of North American Box Turtles”
Price: $49.95 plus $7.50 S&H
Description: Just published in 2009, this is a compilation of work of Carl Franklin and David Killpack. With over 30 years of field experience this book is an amazing resource for anyone interested in the natural history and husbandry of North American Box turtles. Much of Carl’s field work has been focused on Mexican box turtle species. This book has over 300 full color photos and illustrations and is 260 pages. It’s a hardcover from Eco/Serpent’s Tales.

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3) Title: **Turtles of the United States and Canada** (Hardcover) (Second Edition)
Authors: Carl H. Ernst and Jeffrey E. Lovich
Price: List price $95.00, Only 2 Autographed copies left for sale at $85.00
Description: Revised second edition, just published in 2009, has 840 pages, 240 color photos, 11 line drawings, 52 maps.

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4) Title: **Turtles: The Animal Answer Guide**
Authors: Whit Gibbons and Judy Greene (photographs by Cris Hagen)
Price: $28.35 to $39.80 (Amazon.com price)
Description: Whit Gibbons and Judy Greene, two internationally known turtle biologists with the Savannah River Ecology Lab, provide complete answers to the most frequently asked questions about the more than 300 turtle, tortoise, and terrapin species of the world.

From the palm-sized bog turtles of the United States to the great oceanic leatherbacks, turtles across the globe are admired for their persistence, patience, and resilience. They are favorites of scientific study and beloved pets throughout the world. With a friendly mix of scientific analysis and basic encyclopedic coverage, Gibbons and Greene discuss a broad range of turtle topics, including behavior, ecology, reproduction and development, turtle-human relationships, and the appearance of turtles in popular literature.

With attractive photographs and an intuitive question-and-answer format, Gibbons and Greene answer more than 100 common questions about these remarkable creatures. Readers who want answers to specific questions or just want to expand their knowledge about these unique and interesting animals will find the information they seek in this essential reference.

Published in 2009, this paperback is 176 pages, has 35 color photos, and has 64 halftones.

5) Title: **The Ecology, Exploitation, and Conservation of River Turtles**
Authors: Don Moll and Edward O. Moll
Price: List price $80, now $30.00 plus $7.50 S&H
Description: Considered by turtle scientists, and conservationists as one of the best books on turtle conservation. 420 pages; 90 halftones & 3 line illus.

Online Resources

1) EDUPIC GRAPHICAL RESOURCE

One of VHS's own members, William Vann, created and maintains the website, EduPic.net. This is a wonderful resource designed for teachers, educators, and students, with images they can use for free and without permission. There are many images, both photographs and illustrations, each categorized for various subjects. Most images are categorized into multiple subjects (subjects in language arts, math, science, and social studies), so different searches will capture all images possible for the given subject. The photographs are wonderful quality, as well as the many great illustrations. There are also great images for desktops. Information on the creator, and other contributing photographers are found on the site, as well as a great list of links to other image resources and an EduPic Blog.

http://www.edupic.net/index.html

2) ReptileChannel.com – Mystery Skull Challenge
Each month ReptileChannel will display a herp skull along with a clue. It is up to you to guess what species it represents and email us your answer. All correct answers will receive 1,000 points for their "Club Reptile" account. Only the most accurate, correct entries will be accepted. Please use full common and Latin name -- spelling counts!
http://www.reptilechannel.com/reptile-contests/mystery-skull-challenge.aspx

3) Smithsonian Slider Book Free at SREL
After the Smithsonian Press dissolved, Dr. Whit Gibbons bought the rights to the book LIFE HISTORY AND ECOLOGY OF THE SLIDER TURTLE and set it up so that it can be accessed free through the SREL Herpetology web site. His objective is to make it readily available to anyone who wants to access particular chapters or the whole book itself. The book can be accessed at
http://www.uga.edu/srelherp/SliderBook/sliderbook.HTM

News

ALERT! Virginia Reptile Rescue (VARR) is in need of folks to adopt and/or foster, up to 150 confiscated reptiles and amphibians they just received, as well as help with donating items and/or funds:

First, here's an article, from Star-Telegram (newspaper in Texas), about the case involving this large number of confiscated animals:

VA REPTILE RESCUE, INC.
EDUCATION FOR PRESERVATION
WWW.VAREPTILERESCUE.ORG

Judge: Exotic pet wholesaler loses custody of 27,000 animals seized in raid

Posted Saturday, Jan. 30, 2010
BY SUSAN SCHROCK
sschrock@star-telegram.com

ARLINGTON, TX — U.S. Global Exotics will not regain custody of the more than 27,000 animals seized from it by the city of Arlington, a county civil court judge decided Saturday. Judge Jennifer Rymell of Tarrant County Court at Law No. 2 affirmed Arlington Municipal Judge Michael Smith's decision that the international pet wholesaler had cruelly treated the animals, which were removed from U.S. Global Exotics on Dec. 15 in the largest animal cruelty seizure in U.S. history.

The animals, mostly reptiles and amphibians, were inhumanely confined in cramped and dirty cages and denied necessary food, water and veterinary care, Smith wrote in his order. U.S. Global Exotics appealed the municipal court decision, arguing that the city violated the Constitution in seizing the company's entire animal inventory without providing enough evidence that all were cruelly treated.

The company has been closed since the raid, and the owners, Jasen and Vanessa Shaw, have not decided whether they will reopen, said Lance Evans, an attorney for the Shaws. Rymell's decision cannot be appealed. The city will turn over ownership of the animals to the SPCA of Texas, which has cared for them since the raid.

The nonprofit agency, which has spent about $10,000 a day on the animals' care, has already made arrangements with zoos, sanctuaries and rescue groups to give the animals permanent homes. *Susan Schrock, 817-390-7369.*

From VARR:

On Sunday, February 7th, VARR and other animal rescue groups met the Texas SPCA in Nashville, Tennessee, to transfer animals to each group. VARR received approximately 1,100 animals. A story aired about this event on Nashville's WSMV Channel 4.

Next, WSLS Channel 10 in Roanoke aired the story at VARR's location, where Bonnie Keller, her family, friends, and many volunteers were sorting all the animals. This story aired on Channel 10 on February 8th. As Bonnie Keller, of VARR, states in the interview, this is the largest raid of animals in U.S. history, so there is no comparison to any other situation.

At least just prior to the transfer of animals, about 30 people offered to help with the large confiscation group that VARR posted and emailed about previously. The animals have arrived and were to have been sorted out for around 12 different entities that will be receiving them. Once the sorting is complete, the table below shows what is anticipated to stay at VARR, and will need adoptive homes.

For this case, VARR will need adoptive homes first. If enough are adopted, they won't need foster homes. Adoptions will be a flat $10 per animal. Anything above and beyond that is very much appreciated and needed. That money will go towards the vet care for any that need it (and there are many that do), as well as the enormous bill for food and obtaining housing. Except for the Christiansburg Wal-Mart that donated a $50 gift card towards a purchase of plastic shoeboxes and water dishes on Feb. 8th, VARR did not get any donations of housing from the local stores, as hoped. Further, VARR's local supplier of frozen rodents just had a complete failure of freezers, meaning nothing is available for some time. So, another source is needed, which will likely be the regular rate plus shipping, which is very expensive. If anyone knows of a source in VA for mice, rats, pinkies, etc., please let VARR know. Crickets are needed, too.

One huge obstacle to obtaining donations has been VARR's lack of 501c3 status. We intended to apply for that Jan 1, but the fee is $375. Knowing in December that these animals were coming to VARR, they have reserved every penny of their small bank account to pay for the animals' needs first. If VARR manages to have enough money left after expenses, they will obtain the 501c3 status that is needed for future situations like this.

The adoption agreement for each animal does stipulate that no breeding will occur, and that the animals will be returned to VARR if you cannot keep them. The sample agreement is on VARR's website. Please read it before applying to adopt.

If you wish to adopt, please go to VARR's website and complete an application FOR EACH SPECIES. Documentation is required from VARR for EACH SPECIES. You cannot put multiple species on the same form, unfortunately. That is part of what is required.

Keep in mind that many animals are in poor condition. VARR will not adopt out animals that are obviously ill or contagious. Those needing basic TLC may be adopted out to experienced persons.

African Fat Tailed Gecko	14
Albino Motley Corn Snake (smaller than 3ft)	3
Albino Pacman Frog	10
American Toad	2
California Coastal Abberant King Snake (smaller than 3ft)	3
California Coastal Banded King Snake (smaller than 3ft)	4
Desert King Hybrid X Black King Snake (smaller than 3ft)	4
Gecko (Golden/Bibron/Two Lined)	10
Hermit Crab	5
Leopard Gecko	9
Nicaraguan Red Tail Boa (smaller than 3ft)	5
Okeetee Corn Snake (smaller than 3ft)	13
Ornate Pacman Frog	5
Pine Snake (3ft and up) * only to those with permit	1
Red Corn Snake (smaller than 3ft)	7
Reverse Okeetee Corn Snake (smaller than 3ft)	8
Small Madagascar Day Gecko	6
Ultramel Motley Corn Snake (smaller than 3ft)	8
Whites Tree Frog	30

Please apply ASAP for adoptions so VARR can gauge whether or not foster homes are needed. If you are interested only in fostering, please reply with that information so VARR can keep track.

Thank you in advance for any offers of help. This has been a huge coordination effort between dozens of people nationwide – now it's time to actually start making it happen.

Go to www.vareptilerescue.org today!

Virginia Literature

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

Vonesh, JR; Kraus, JM; Rosenberg, JS; Chase, JM. 2009. Predator effects on aquatic community assembly: disentangling the roles of habitat selection and post-colonization processes. Oikos, Vol. 118, Issue 8, p1219-1229.

Orlofske, SA; Belden, LK; Hopkins, WA. 2009. Moderate Echinostoma trivolvis infection has no effects on physiology and fitness-related traits of larval pickerel frogs (Rana palustris). Journal of Parasitology; Aug2009, Vol. 95 Issue 4, p787-792.

Grayson, KL; McLeod HD. 2009. Evaluating the reproductive cost of migration for females in a partially migrating pond-breeding amphibian. Journal of Zoology [J. Zool.]. Vol. 279, no. 1, pp. 71-77.

Orlofske, SA; Hopkins, WA. 2009. Energetics of metamorphic climax in the pickerel frog (Lithobates palustris). Comparative Biochemistry and Physiology, Part A: Molecular & Integrative Physiology [Comp. Biochem. Physiol., A: Mol. Integr. Physiol.]. Vol. 154, no. 2, pp. 191-196.

Orlofske, SA; Grayson, KL; Hopkins, WA. 2009. The effects of fluorescent tracking powder on oxygen consumption in salamanders using either cutaneous or bimodal respiration. Copeia, Vol. 2009, Issue 3, pp. 623-627.

Takahashi, MK; Pauley, TK. 2010. Resource allocation and life history traits of Plethodon cinereus at different elevations. American Midland Naturalist, Vol. 163, Issue 1, pp. 87-94.

Searle, CL; Belden, LK; Bancroft, BA; Han, BA; Biga, LM; Blaustein, AR. 2010. Experimental examination of the effects of ultraviolet-B radiation in combination with other stressors on frog larvae. Oecologia, Vol. 162, Issue 1, pp.237-245.

Answers from page 16

Herp Trivia Answers

1. A person who has Batrachophobia, has a fear of what group of animals?
   d. Amphibians

2. Which Virginia native anuran has a breeding call that sounds like a person snoring?
   c. *Lithobates palustris* (Pickerel Frog)

3. Plethodontid salamanders are unique because they lack which of the following?
   b. Lungs

4. If you find a nest of spherical turtle eggs in an inland area of Virginia, which turtle species most likely laid these eggs?
   a. *Chelydra serpentina serpentina* (Eastern Snapping Turtle)

5. The first major groups of amphibians developed during the Devonian period.
   True

6. *Pantherophis alleghaniensis (Eastern Ratsnake)* is primarily a fossorial snake.
   False

7. If a turtle falls into your canoe, as you paddle under tree branches, in which family does this turtle likely belong?
   b. Kinosternidae (Mud or Musk Turtles)

8. What is the most obvious sexually dimorphic characteristic in *Chrysemys picta picta* (Eastern Painted Turtle)?
   c. Front claw length difference between males and females

9. Identify this lizard by using the Va Herp Society Lizard Guide:
   Scincella lateralis (Little Brown Skink)

10. Which of the following species are listed as state threatened in Virginia (choose all that apply)?
    b. *Hyla gratiosa* (Barking Treefrog)
    and
    d. *Ophisaurus ventralis* (Eastern Glass Lizard)

Send suggestions for Herp Trivia to newsletter editor, Susan Watson, susan.watson@dgif.virginia.gov.

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.

Wood Frog (*Lithobates sylvaticus*)

For someone who lives southeast of Richmond, it would be a treat to find a more northerly species, such as the wood frog, at the VHS Annual Annual Survey at Mason Neck State Park. This species is also a hardy one for an anuran. In fact, wood frogs are able to live north of the Arctic Circle, and can survive for weeks with 65% of its body frozen. They use glucose in their blood as an 'antifreeze', concentrating in its vital organs and protecting them from damage as the rest of the body freezes. In Virginia, calling males may be heard as early as February. With the weather so far in 2010, this may happen later this year.

Characteristics

This is a medium-sized, usually unspotted (or mostly unspotted) frog with a black mask on the cheek and extending through the eye. The dorsal color varies from tan to reddish to brown to almost black. The cheek patch is black or dark brown, and nearly always discernible. The belly is usually and unmarked, except for a dark spot on each side of the chest. The voice is a hoarse clacking sound suggestive of a duck, and they are often heard calling before the ice is completely gone but are usually silent after breeding season.

Habitat

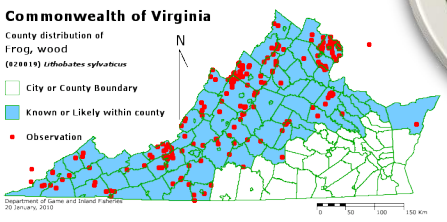
This species is often found in or near moist woods. They hibernate under leaves or logs. This species is rarely found far from forest cover and is often found in caves. They prefer shade and will breed at 50 degrees Fahrenheit.

Reproduction

Wood frogs usually breed in temporary woodland pools. The eggs are usually deposited near the shore of a shallow pond. This species may breed from February to April. They are explosive breeders, gathering in large numbers for breeding frenzies that may last only a few days. The large, globular egg masses are usually attached to sticks or aquatic vegetation. Often, many egg masses are deposited together in a small area, which may help protect them from freezing. The eggs are deep chocolate brown in color above and whitish beneath. Tadpoles transform in about eight weeks.

Food

Adults eat beetles and flies, as well as other invertebrates, like spiders, earthworms, moth larvae, snails, and slugs. Newly hatched larva feed on their egg masses and associated algae. Larger tadpoles use specialized mouth parts to eat algae and various microorganisms scraped from aquatic vegetation, decaying plants, and animal matter.



Common Name:	Wood Frog
Scientific Name:	*Lithobates sylvaticus*
Genus:	***Lithobates*** is Greek, ***Litho*** means "A stone", ***bates*** means "One that walks or haunts."
Species:	***sylvaticus*** is Latin and means "amidst the trees "..
Average Length:	1.4 - 2.8 in. (3.5 - 7 cm)
Record length:	3.3 in. (8.3 cm)