Virginia Herpetological Society Newsletter

Volume 19, Number 1

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J.D. Kleopfer of the Virginia Department of Game and Inland Fisheries (www.dgif.virginia.gov) holds all that remains of a Virginia state record Eastern Snapping Turtle (*Chelydra serpentina serpentina*). This specimen was caught at Ft. Pickett in August 2008 by a commercial snapping turtle fisherman. The turtle weighed in at 51 lbs. (23.13 kg) with a straight-line carapace length of 18 1/3 in. (46.5 cm). The previous Virginia record was 35 lbs. (16.0 kg) with a straight-line carapace length of 16.3 in. (41.5 cm).

REPTILE RESCUE NEEDS FOSTER HOMES. SEE PAGE 3

WHAT IS A FECOLITH? HERP TRIVIA PAGE 3

NEW SECTION: "ZOO VIEW" DEBUTS ON PAGE 9

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Scarlet Kingsnake

COMING EVENTS

Event	Location	Dates
Reptile Weekend	Virginia Living Museum	Feb 14-16
VHS Annual Survey	Occoneechee State Park	May 1-3
Naturalist Rally	Mount Rogers	May 8-9
Scarlet Kingsnakes	Smith Mountain Lake State Park	June 13-14
HerpBlitz	Breaks Interstate Park	July 10-12

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VHS BUSINESS

1) Message from the President

Susan Watson – (susan.watson@dgif.virginia.gov)

I hope that everyone is enjoying a great start to 2009! I am working on getting things lined up for this year. Let's hope that VHS's 51st year will be just as great as, or greater than, the 50th!

The first event for the year will be the annual exhibit at the Virginia Living Museum's (VLM) "Reptiles: Bizarre and Beautiful" weekend. This is an event VHS has participated in for several years now, and the exhibit is ready from last year, however, we will need anyone who is willing and able to volunteer to help work this exhibit during the event (see page 4). I will make sure more details appear on the VHS website.

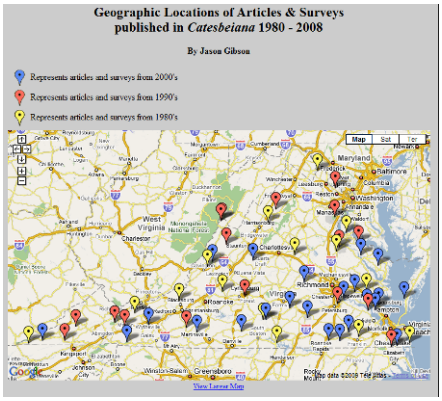
Next, plans are in the works for the VHS Annual Survey to take place on the weekend of May 1-3 at Occoneechee State Park, in Mecklenburg County. Two other survey events VHS will host include: the Scarlet Kingsnake Blitz at Smith Mountain Lake State Park, and the Fourth Annual HerpBlitz at Breaks Interstate Park. One other survey event VHS once again plans to participate in is the Resource Ramble at the Blue Ridge Scout Reservation, in Pulaski County, one weekend in August. Further and finalized details on these events will be posted on our website as soon as possible. Keep checking vaherpsociety.com

Finally, I will soon need to plan our Fall Meeting. This will most likely occur in October, and Virginia Commonwealth University had graciously agreed at the end of the 2008 Symposium to also host the 2009 Symposium. The details and finalized arrangements of this event will also be posted on the VHS website as soon as possible.

I look forward to seeing everyone and seeing new herps this year!

2) Map of All VHS Surveys

All surveys published in the VHS journal *Catesbeiana* since the 1980s have been plotted on an online interactive map. With the tools and features available on Google Maps, former 2 term president Jason Gibson has laboriously created a map of 57 surveys. These are color-coded according to the decade in which they were published. We expect this map to be a valuable tool to plan future surveys by knowing which geographic areas are lacking in published surveys.
http://fwie.fw.vt.edu/VHS/vhs-surveys/all-vhs-surveys.asp

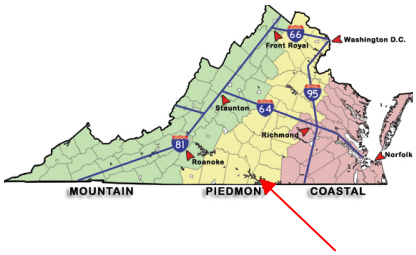


3) VHS Surveys

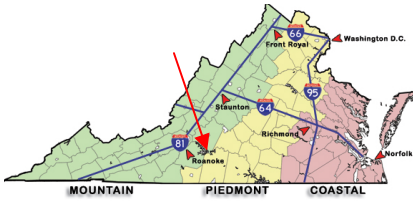
This year's surveys are mostly located in the southern and western parts of the state. We recommend reserving accommodations as early as possible since our surveys tend to bring large crowds. Also, keep a check on our Yahoo group for ride/lodging sharing to these out-of-the-way locations!

A) Annual Survey and Business Meeting – Occoneechee State Park – May 1-3

Located near the John Kerr Reservoir in Clarksville near the southern border of Virginia, the VHS will have access to 1,900 acres of wildlife management areas. Preliminary planning has begun and details will be posted on the VHS website and the Yahoo group. Cabins, lodges, and camping are all available. Lots of historical and recreational activities are available for non-survey participants. The business meeting and orientation will be held Friday night, and the survey will be all day Saturday and until noon on Sunday.

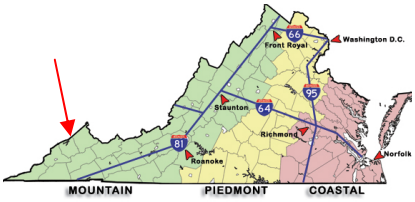


B) Special Event! Scarlet Kingsnake Blitz – Smith Mountain Lake – June 13-14



The Scarlet Kingsnake (*Lampropeltis triangulum elapsoides*) is one of the least studied and least known of all the snakes inhabiting Virginia. The piedmont population discovered by Greg Woodie and Michael Kinsler in 2003 seems to be a large localized population. The Scarlet Kingsnake Blitz of Smith Mountain Lake State Park and other surrounding areas will focus on trying to expand the known range for this species and gather any other natural history observations for this species. Having the opportunity to find one of these rare snakes should be enticing to anyone trying to complete a herp life list for Virginia.

C) Fourth Annual HerpBlitz – Breaks Interstate Park – July 10-12



This survey will take you to the rarely traveled far western part of Virginia. The 4,500 acre park is located near the Kentucky border and is famous for its scenic vistas and is also known as the "Grand Canyon of the South". Many reptiles are under-recorded here and there will be opportunities to see herps that are not found in any other part of the state. A campground and limited cabins are available.

HERP TRIVIA

Thanks to Scott Duncan!

1. In turtles, how can males be distinguished from females?
   a. Dark markings on the plastron
   b. Long thick tails and concave plastron
   c. Sex cannot be determined without probes
   d. Macho posturing when threatened

2. What are the rings on turtle's scutes called?
   a. Carapaces
   b. Plastrons
   c. Annuli
   d. Shuckles

3. How can you distinguish between cooters and sliders turtles?
   a. Eye color
   b. Claw markings
   c. Shape of the jaw
   d. Sliders slide, while cooters coot

4. True or False: Annuli can be used to accurately age many species of turtle throughout the duration of its life.
   a. True
   b. False

5. True or False: One way to identify Painted turtles is by their smooth, unkeeled shells.
   a. True
   b. False

6. In a snake, a fecolith is
   a. hardened stool
   b. something that can happen if the temperature is too low
   c. something that can happen if the humidity is too low
   d. all of the above

Herp Trivia continued…

7. Amphibians around the world are facing an immediate crisis caused by what?
    a. A virus
    b. Habitat loss
    c. Warming
    d. A fungus

8. Cottonmouth (*Agkistrodon p. piscivorus*) venom is
    a. Hemotoxic (destroys red blood cells)
    b. Neurotoxic (acts on nerve cells)
    c. Cytotoxic (toxic to cells)

9. In the terminology of cladistics, reptiles (as classically defined) are considered to be paraphyletic. This means:
    a. The reptile class excludes groups that descend from the original reptile (i.e., mammals and birds).
    b. The reptile class properly includes all descendants of the original reptile.

10. The oldest known reptile is the:
    a. Hylonomus
    b. Archaeothyris
    c. Petrolacosaurus
    d. Koryodon

11. The earliest reptiles appeared in what geological period?
    a. Carboniferous
    b. Devonian
    c. Permian
    d. Attrocious

Answers can be found on page 14

EVENTS

1) Reptile Weekend
2) Educational Programs
3) Awesome Amphibian Camp
4) Mount Rogers Naturalist Rally

1) Reptile Weekend – Feb 14-16 – Virginia Living Museum

Enjoy three days of native and exotic reptiles at the Virginia Living Museum in Newport News. Meet a Burmese python, Galapagos tortoise and a cobra, plus other venomous and nonvenomous reptiles. See live animal programs. Children will enjoy Reptile Story Time, while preschoolers will have a special craft area. The Abbitt Planetarium will feature five different shows: A Sky Full of Scales, Virginia Skies, The Friendly Stars, Follow the Drinking Gourd and Microcosm. Special exhibitors include Iguana Rescue.

- Cost: $15 adults, $12 children
- 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.

The VHS will also participate in Reptile Weekend. 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 every year for the last 4 years. We will again have a display and ask for members to volunteer a few hours to staff the table and answer questions. Contact Kory Steele (colchicine@gmail.com).

"Which is better: to fear all snakes and keep out of danger, or become educated and fear those only that can be harmful to you?"
Bill Haast, Director of the Miami Serpentarium

2) Reptile Expos

	Northern Va Reptile Expo	Richmond Reptile Expo	Mid-Atlantic Reptile Show
Dates	Feb 21, May 29	March 29, July 26	September 19 & 20
Location	Prince William County Fairgrounds Manassas, Virginia 20108	The Holiday Inn Select 1021 Koger Center Blvd. Richmond, VA 23235	Days Hotel 91615 Deereco Rd. Timonium, MD 21093
Admission	$7	$8	$9
Time	9 am to 3 pm	10 am to 3 pm	10 am to 5 pm
Contact	**www.kingsnake.com/nva**	**www.kingsnake.com/richmond**	**www.reptileinfo.com**

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3) Educational Programs

Longbranch Nature Center

SLITHERING SERPENTS **Saturday, February 7, 3-4 PM**

Come hither as we slither and shake with the snakes of Long Branch. Families with children 5 and up. Register children and adults. Children must be accompanied by a registered adult. $2

PEEPER PROWL

Hop on over and join the fun as we learn about and search for these tiny tree frogs and other amphibians. Families with children ages 5 and up. $4 Reference program numbers listed below.
Fri., March 20, 6:30-7:45PM. Program # 632502HH
Sat., March 21, 6:30-7:45PM. Program # 632502II
Sat., March 28, 6:30-7:45PM. Program # 632502JJ
Sun., March 29, 6:30-7:45PM. Program # 632502KK
Fri., April 3, 6:30-7:45PM. Program # 632502LL
Sat., April 4, 6:30-7:45PM. Program # 632502MM

SNAKES ALIVE **Saturday, March 14, 2-3PM.**

Find out all everything you ever wanted to about snakes and meet some up close and personal! Families with children ages 4 and up. $4 Meet at Long Branch Nature Center, 625 S. Carlin Springs Rd., Arlington, VA 22204. Registration required, register on-line https://registration.arlingtonva.us/vsiwebtrac.html or call 703-228-4747. Program # 632502C EVENING

Ellanor C. Lawrence Park

AWESOME AMPHIBIAN CAMP **April 6-7**

This 2 day Amphibian Camp will introduce students to the native amphibians of Fairfax County. They will see live specimens of salamanders and frogs. Go outside at night to check a vernal pool and set some amphibian traps. Then we will check the traps the next day to see what we caught. $50/child.
Call 703-631-0013 Ellanor C. Lawrence Park to register.

4) Mount Rogers Naturalist Rally – May 8-9

Every year the Mount Rogers Naturalist Rally Committee assembles a wide variety of excellent field trips with leaders who are experts in their field. Their goal is to make the Mount Rogers area ecology understandable and interesting for everyone, from inquisitive amateurs to accomplished naturalists.

The 2009 Rally will be May 8 & 9. This year's Friday night speaker will be Theresa Dellinger, PhD, of Virginia Tech. She is a research associate, conducting chemical trials on hemlocks, testing different formulations and application methods for control of the hemlock woolly adelgid.
Registration is $5, more information at www.mountrogersnaturalistrally.org

NOTICE: Submissions for *Catesbeiana* Vol. 28 No. 1 are due March 1, 2009!
Please support the VHS by submitting any papers, field notes, or artwork for *Catesbeiana* to: Dr. Paul Sattler, Editor, *Catesbeiana,* .pwsattle@liberty.edu.

"Odd is it not, that the public seems to regard snake bite as a sort of super-serious bee-sting. You get a shot of AV and go merrily on your way. Telling them that it doesn't work like that seems to do little to dispel that ridiculous myth. Snake bite is like marriage: a really good one lasts a lifetime, whether you survive it or not."
Phil Gillette

CONSERVATION KEY

Tim Christensen - VHS Conservation Committee Chair

Observations from Ecuador

Here in temperate eastern North America, specifically Virginia, many citizens have risen to the challenge of supporting preservation and protection of our natural resources to include our herpetofaunal resources. This is becoming more evident in a number of ways such as the relatively new Virginia Master Naturalist Program, the Virginia WildlifeMapping Program, and various projects and activities performed by VHS members. Interestingly, I've received various requests for presentations on herpetology-related topics from various public forums such as 4-H, Master Gardeners, and public school organizations. Awareness and interest regarding native wild reptiles and amphibians may be on the rise in Virginia.

The timing of such matters might just be right. It's quite obvious to anyone residing in this state that the environment is becoming increasingly urban. Northern Virginia tends to follow this standard, though the Hampton Roads area sometimes appears to be rivaling development. Here in York County there seems no end to the construction of large houses. Despite the proximity to the coveted Chesapeake Bay, natural habitats continue to shrink. This is depressing when you think of the diversity of species native to Virginia. Some 114 mammals (Linzey, 1998) are found here and over 400 bird species have been recorded as either breeding, wintering or migrating through Virginia (www.audubon.org). Herpetofauna species, too comprise important components of the ecology, and Virginia is thought to have one of the highest diversity of salamanders in the Continental United States.

If you would hold those thoughts for a moment, let me deviate to the neotropics. This past summer I had the opportunity to serve as a volunteer with a non-profit organization conducting herpetological research in Ecuador. This research (comprising a long-term project) is being carried out by the conservation and research organization, Reptile and Amphibian Ecology International (RAEI), dedicated to understanding biodiversity of reptiles and amphibians. One major focus of RAEI has been documentation of herpetofauna biodiversity in imperiled rainforest habitats of western Ecuador. This region has experienced over 95% deforestation. Only a fragment of the original rainforest habitat remains intact. Huge tracts of surrounding land have been converted to cattle farming and agricultural uses. This region is considered to be at a greater risk than the Amazon, and much of the herpetofauna remains understudied.

Two (of several) research sites were visited during my participation. Bosque Protector La Perla, a private preserve exists as an ecological oasis surrounded by an altered landscape. It comprises approximately 1,900 acres - essentially all that remains of a humid rainforest of this type for a good many miles. An oil pipeline runs through part of the tract

albeit, its natural scenery. Several anuran species (for which I am clueless as to the common names) included drab and very common *Pristimantis achitinus*, colorful and uniquely shaped *Hypsiboas picturata*, particularly large *Trachycephalus jordanii,* the common but structurally interesting South American toad *Rhinella margarifita* and transparent glass frogs of the family Centrolenidae. Snakes being nonetheless fascinating, included encounters with the highly venomous fer-de-lance (*Bothrops asper*), the extremely thin *Imatodes inornatus*, a snail-sucking *Dipsus gracilis* and even a milk snake (*Lampropeltis triangulum*) Ocelots, mot-mots and kinkajous comprised a small number of the non-herpetofauna species encountered.

Panorama of destruction. View from 900 meters above sea level showing area once comprised of rainforest now converted for farming.

Serra Pata de Pajaro, also privately owned, comprises a unique humid rainforest-cloud forest transition habitat over 900 meters above sea level, containing several vegetative habitat types at various elevations lends itself as a classic example of biological endemism. Unfortunately, higher up in elevation an invasive grass was noted by our Ecuadorian guide, and this habitat alteration may have allowed cane toads (*Rhinella marinus*) to expand into higher elevations possibly impacting the local ecology. Serra Pata De Pajaro too, remains at risk as local naturalists attempt efforts towards its preservation.

So, let's return to Virginia and make a quick comparison of Ecuador and Virginia. Granted the biodiversity is disparate but the issues of research needed to support conservation efforts are similar.

Caecilian found at Serra Pata de Pajaro. A unique, imperiled amphibian species as is our amphiuma.

Consider that new species are discovered in Virginia such as *Plethodon sherando* from Augusta County (Highton, 2004). Consider further the restricted ranges of salamander species endemic to small areas of Virginia. Are the threats to species really that much different depending on the locale? Does it really matter whether land is converted into agricultural fields or a Wal-Mart parking lot?

Seeing the pressures of anthropogenic indifference with my own eyes underscored an understanding of just what is at stake. Needless to say, this southerly excursion instilled upon me an even greater appreciation of our own situation. In 2004, Sergio Lasso, a wildlife coordinator for Ecuador's Ministry of the Environment was quoted regarding his country's wildlife diversity stating that "This is Ecuador's hope for the future. Once our oil is gone, all we'll have is our biodiversity." Mr. Lasso's comment reflects an understanding of the importance of Ecuador's wildlife resources. What should Virginians say before their resources are maximized? Will we have an equivalent statement to make?

Literature Cited:

Highton, R. 2004. A new species of woodland salamander of the *Plethodon cinereus* group for the Blue Ridge Mountains of Virginia. Jeffersoniana 14: 22.

Linzey, D.W. 1998. The mammals of Virginia. McDonald and Woodward Publishing Company.

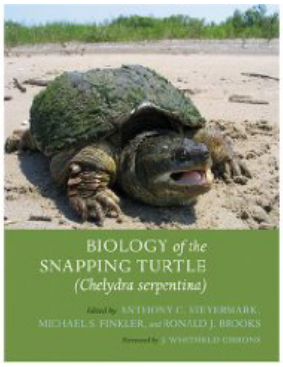
National Audubon Society. www.audubon.org.

If you would like more information about Reptile and Amphibian Ecology International and volunteer opportunities, visit their website at www.reptilesandamphibians.org.

BOOK REVIEWS

Biology of the Snapping Turtle (*Chelydra serpentina*). 2008. Edited by Anthony C. Steyermark, Michael S. Finkler and Ronald J. Brooks. The John Hopkins University Press. 225 pp.

By Tim Christensen



If there's ever a more fascinating turtle species, it's the Common Snapping Turtle. Truly a throwback to the prehistoric age and many will agree this taxon represents the reptilian version of an Army main battle tank. This is the first book I've found devoted solely to snappers. The book is very thorough in its coverage of the material that includes the primary sections of taxonomy and systematics, physiology, and life history and ecology. General anatomy is lacking for the most part with the exception of the skull. In this case, Chapter 3 is devoted exclusively to a study of the turtle's skull. There are only a few photographs, and none are in color. The book does not contain a glossary.

It should be noted that the book is very technical in nature. Subsequently, its use is probably more directed towards the graduate student level to the seasoned herpetologist as opposed to the novice. Remember the title – "Biology of" so don't expect field guide type information; the book presents the research of several scientists covering the full gamut of physiology, growth and energetics. Wildlife management professionals can extract useful information from the sections dealing with various aspects of ecology particularly the chapter on population biology and population genetics.

Some particularly interesting topics include the taxon's "phenomenal geographical distribution" (being found in Ecuador, Colombia, Costa Rica, Honduras, Mexico, 41 of the 48 continental United States and at least 6 of the 10 Canadian provinces), discussion on thermoregulation (such as increasing body temperature by aquatic basking in shallow water) and points regarding age estimation error. Overall, I would rate the book as excellent reference for the advanced professionals.

$54 at Amazon.com

ZOO VIEW

Editor: We are starting a new section in the VHS newsletter focused on the captive husbandry of Virginia native amphibians and reptiles. The inaugural article emphasizes the basics of husbandry. Future articles will written by experts in the field and expand on this topic.

THOUGHTS ON HERP HUSBANDRY

by Stephanie Kokosinksi

As the curator of reptiles and amphibians at the Virginia Living Museum (thevlm.org), I receive countless calls from individuals concerning their captive animals. The majority of the phone calls I receive are people wanting to "donate" their animals to the museum, most of which were wild collected. Occasionally I receive a phone call requesting husbandry advice. I have come to the conclusion that most of the people I speak with have not done enough research prior to taking in a reptile or amphibian for a pet.

Although many people find keeping reptiles and amphibians a rewarding hobby it is also challenging. Reptiles and amphibians can experience chronic stress by being in captivity. Even a small amount of stress may compromise the animal's immune system, making the animal more susceptible to health problems. To get the best start, consider the following when thinking about acquiring a new animal:

Know the species. Is there is a specific animal that catches your eye? The first step is to research the natural history of the animal to learn what is involved with its care. Find out what type of environment the animal is found in, preferred temperatures, and diet. Is the animal a diet specialist? Does the animal have a life expectancy of 100 years? How large is that hatchling going to get? Do you have to maintain a food colony to keep it fed? These are all factors to consider beforehand to determine if a new animal can fit into your lifestyle.

Go captive bred. Between pollution, habitat destruction, development, and habitat fragmentation, there are countless additional obstacles that threaten reptile and amphibian populations. Even taking one animal can have

an impact. Also, wild caught animals tend to have more health problems because of the stress of adapting to captivity. Find a captive bred animal from a reputable breeder or a non-releasable animal through a reptile rescue. This will make it easier on you, the animal, and wild populations.

Provide dietary variety. No food is perfect enough to eat every meal of your life. Many health problems associated with reptiles and amphibians stem from an inadequate diet. With insect eaters, vary the diet between crickets, phoenix worms, silkworms, superworms, or waxworms. Alternate with different brands of vitamin supplements. Read about the nutrition of fruits and vegetables as they pertain to reptiles. Provide omnivores, like box turtles, with a variety of healthy fruits and vegetables. This will also help to avoid your animal getting stuck on a favorite food, and it will avoid common diet deficiencies.

Don't skimp. There are some items that you can't avoid spending money on. Basking animals, like turtles and lizards, require UVB light for some of their metabolic processes. Intentionally oversize filtration systems for aquatic animals. Save money by thinking ahead and buying the larger tank or enclosure you will need eventually. By investing in these areas, you will see less health problems associated with husbandry.

Caring for reptiles and amphibians is a constant learning process. Being knowledgeable about the species is the most important aspect of keeping a long lived animal.

Zoo Updates

Editor: This will be another new section to highlight Virginia's zoos, museums and nature centers. All changes to exhibits, collections, and captive breeding will be listed here. Future Zoo Updates will include more attractions.

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

Even though it is still winter, we are seeing breeding behavior. In the Cypress Swamp exhibit, you can observe courtship behavior between our aquatic turtles (sliders and cooters). Look for the male turtles fluttering their long nails in front of the females. You can also observe breeding behavior between our pair of Eastern Cottonmouths in the Cypress Swamp. In our Black Rat Snake exhibit in the cave, we have seen too much breeding! Both of our females laid two clutches of eggs last year, and we removed our overzealous male. We are currently getting ready for Reptile Weekend, occurring on February 14-16. For the special event, we will be displaying a Galapagos tortoise and other non native reptiles. – *Stephanie Kokosinksi*

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

The Virginia Zoo recently hired a new curator of reptiles and amphibians, Craig Pelke. Coming from a zoo in Milwaukee, Pelke has numerous improvements planned for the zoo.

Increasing the number of amphibians and caecilians on exhibit, including poison dart frogs, lemur leaf frogs, Malayan leaf frogs, Vietnamese mossy frogs, tomato frogs and a Rio Cauca caecilian. The Virginia native red salamander will go on exhibit soon, the zoo's first salamander on display.

Improving the reproductive success of their bog turtles, a state endangered turtle.

Start breeding Chinese Alligators.

Five Aldabra tortoises will arrive soon.

The zoo's pond will be renovated to house their collection of sliders, snappers and other native herps, flora and fauna.

Nothing in all the world is more dangerous than sincere ignorance and conscientious stupidity.
Martin Luther King Jr., Strength to Love, 1963

VIRGINIA REPTILE RESCUE Needs Foster Homes

The VRR is currently operating at a reduced capacity, and this has created the need for qualified foster homes to house unwanted herps until they can be adopted.

According to Bonnie Keller, founder of VRR, the requirements for foster homes are:
1) Have general knowledge of pet reptile care, and be willing to seek info on species you are not experienced with.
2) Be willing and able to take in reptiles that come with appropriate caging. Species limitations are understood and respected. (Not everyone can take a 12' Burmese python!)
3) Be willing and able to seek appropriate vet treatment if needed. Reimbursement will be offered when possible from adoption fees. Please keep receipts and vet reports!
4) Be willing to travel a reasonable distance to help with delivery to the new adoptor or to me (near Lynchburg).

Of course, foster homes will have "first dibs" on adopting animals they take in. If they don't want to keep them permanently, just keep them until I can find a new appropriate home. Realize that for some species, that can take a while.

The VRR always has herps available for adoption. Instead of buying from a pet store, give a home to a herp in need of one. Animals available for adoptions are listed here: www.vareptilerescue.org/available.htm

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A MESSAGE FROM WILD VIRGINIA

Editor: There was recent news about the potential for a “special biological area” being designated in the George Washington National Forest. David Hannah, the conservation director for the 300-member Wild Virginia organization promoting the designation, said development across the northern part of Virginia has destroyed the turtle's habitat.
"This is our last, best chance to manage them at the southern end of their range," he said. "A special biological area would be a big help." "We need to protect the wood turtle and raise their profile." JoBeth Brown, a spokeswoman for the George Washington, said: "That's definitely an issue we're working on."

I contacted David Hannah of Wild Virginia to learn more about their organization and about their activities in Virginia. Below are excerpts from our communications.

The wood turtle has been a focus of Wild Virginia for many years. Our former Conservation Director, Steve Krichbaum, has studied them and worked hard for their protection in the George Washington National Forest (GWNF). We feel the GWNF offers the only good opportunity to effectively manage for them on public lands, keeping the population viable for the long term here at the southern extent of their geographic range.

Wild Virginia is a small, non-profit organization with one staff person and a volunteer Board of Directors. I have been Conservation Director since November of 2006. Our long-stated mission - "Dedicated to preserving wild forest ecosystems in Virginia's national forests." So our focus is narrow. We work only in national forests in Virginia, and almost exclusively in the GWNF. Within the GWNF, we focus on the Shenandoah Mountain area (home to the Cow Knob salamander, as I'm sure you know). As best we can, we strive to see that the GWNF is managed in an ecologically appropriate manner. Among our emphases are maintaining viable populations of native wildlife species and natural communities, especially those that are rare or uncommon.

Two priorities in recent months & years have been working on the revision of the Forest Plan for the GWNF and protection of the Roadless Areas. The current Forest Plan was completed in 1993, and revising the plan has been an ongoing process since early 2007. We try to inform the public and get them involved in the process. Wild Virignia and several other conservation groups jointly developed "Forests for the Future" last year, a document stating what we believe the management priorities should be in the revised plan. Forest Plans dictate management on the forest for 10-15 years, so they are extremely important.

Though no species are mentioned in "Forests for the Future", one of the recommendations we make is to designate as Special Biological Areas all the sites within the GWNF identified by the Virginia Natural Heritage Program. This would include an area that we consider ideal for long-term protection of wood turtles. A population occurs in an area large enough (all within the GWNF) to make protection and management feasible.

Another issue related to the wood turtle is the development of a management plan. For quite some time, the Forest Service (in conjunction with some state agencies) has been developing a management plan for the wood turtle in the GWNF. No one outside the group developing the plan is aware of the content. It is unclear if the Forest Service report will recommend creating a Special Biological Area.

We try to be champions for all native wildlife species, with more emphasis on the rare or uncommon species than others. The presence of the Cow Knob salamander in the Shenandoah Mountain area (which we highlight to everyone we can) is one reason we feel that area is so special & in need of protection. We would like to see the size of the Shenandoah Mountain Special Biological Area in the GWNF increased, per recommendation from the Virginia Division of Natural Heritage. We want to see more SBA's in the GWNF to increase protection for all herps and wildlife. The Big Levels & Maple Flats Ponds areas, both of which are SBAs, are important to us too, as they are home to many amphibians.

Wild Virginia does monthly hikes to encourage folks to get out to know and enjoy the GWNF (though a few of our hikes might go to Shenandoah National Park or other nearby natural areas). VHS members are welcome to attend.

Editor: It's exciting to see NGO's working on herp conservation. This article serves to make VHS members aware of other organizations they can support and get involved in. I highly encourage you to peruse their website, if for the photography alone! http://www.wildvirginia.org.

VIRGINIA FROG & TOAD CALLING SURVEY

Virginia has twenty-six species of frogs and toads throughout diverse habitats from coastal plain to high mountains. It is important that we know where different species occur and how abundant they are so that we can monitor changes in their populations or distribution. In Virginia, the Frog and Toad Calling Survey is conducted by a group of volunteers from across the Commonwealth who spend three nights a year surveying various wetland habitats for frogs and toads. The survey involves listening and then identifying the various species by their call, and recording the approximate number of individuals. Each route has 10 stops. The surveys take place once in late winter, once in the spring, and one more time in early summer.

Want to Volunteer?

If you're interested in becoming a Virginia Frog and Toad Surveyor and can dedicate at least 3 years to the program, please check the 2009 Frog and Toad Route Map for route availability. If you find an available route that interests you, contact J.D. Kleopfer (John.Kleopfer@dgif.virginia.gov). More information is available at http://www.dgif.virginia.gov/wildlife/frogsurvey/

WHAT IS THE WORLD'S RAREST ANIMAL? HERP?

By Whit Gibbons,(Eco-Views) Aiken Standard, SC, 1/09/09

This question needs to be qualified if you expect to get anything like consensus from scientists. For example, you might restrict the question to types of animals (such as bird, fish or frog) or to a location (such as within the United States, within Alabama or in the desert). Even then, you are unlikely to get a single answer on which all scientists would agree.

Part of the difficulty lies in establishing what is meant by "rare." Marbled salamanders, which 99.44 percent of the people in the Southeastern United States have never heard of and even fewer have seen, are not rare in the sense of being scarce. Amphibian biologists know that Marbled salamanders spend most of their lives in the woods under logs, leaves, rocks or even underground. They come onto the surface when they breed in the fall, almost always at night when it is raining. To anyone other than an amphibian biologist, they would be perceived as rare because the average person has never observed them in their natural habitat. By that definition, most animals, as well as plants, are rare.

The more common perception of what makes something rare is that not many of them are known to exist. The Grand Cayman blue iguana indisputably qualifies as one of, if not the, rarest lizard in the world. These turquoise or pale blue lizards, which are restricted to Grand Cayman in the Cayman Islands south of Cuba, can get more than

five feet long and live more than half a century. The record longevity in captivity is 67 years. Blue iguanas qualify for the rarity category because so few are left on the island. And their odds of survival look grim. Some lizard biologists have predicted that the species will be extinct by the year 2020, except for a few animals in captivity.

Like the blue iguana, one of the rarest turtles in the world also reaches an enormous size and probably lives for decades. The Yangtze (also called Shanghai) softshell turtle is considered to be the rarest turtle in the world by most turtle biologists. Two of these turtles, a male and a female, that are in zoos in China are purported to be more than 80 years old each. One giant softshell turtle is known to inhabit a large lake in Hanoi, Vietnam, and one was found in another Vietnamese lake, but sightings in the wild over recent decades have been few. Females, which get larger than the males, can reach lengths of more than four feet and are estimated to weigh more than 400 pounds. Attempts have been made to breed the remaining pair in captivity, but so far no fertile eggs have survived.

Many ornithologists consider the rarest bird in the world to be a small honeycreeper known as the po'ouli, which is native to rainforests on Maui. According to recent reports, only three surviving individuals are known to exist. The U.S. Fish and Wildlife Service considers the species endangered (if it didn't, we should certainly wonder why not) and is attempting to protect the habitat. Efforts are also being made to get a pair to mate (assuming that both sexes are represented among the remaining individuals).

Rarity among animals, as well as plants, is not a new development. Of the millions of species that have gone extinct through the ages, a point was reached when only two or three were left. Then there were none. To that extent, rarity, even extinction, is a natural biological phenomenon. What is not natural is when we human beings are responsible for the rarity of a species, including the three mentioned above, because we have destroyed their habitat.

Perhaps we have reached a turning point in our stewardship of Earth. If, as I believe, most people value Earth's biodiversity, then maybe we are ready to recognize the right of other species to inhabit this planet and to set ourselves a goal for the second decade of this millennium: Let us strive to ensure that being a victim of habitat destruction is itself a rarity.

JOB ANNOUNCEMENT

Two Salamander Field Technicians Needed
Job Type: Seasonal /Location: Shenandoah National Park, Virginia
Closing date: March 1, 2009
Opportunity Description: Student Field Technicians: Salamander surveys in Shenandoah National Park

The U.S. Geological Survey's Amphibian Research and Monitoring Initiative Northeast program will be hiring 2 student field technicians in 2009. One technician is needed beginning in the spring (01 May) through mid-August. Another technician will be hired for the summer from mid-June through mid-August. Both positions could be extended for 4-6 weeks in September and October, pending funding.

Technicians are primarily responsible for conducting salamander surveys in Shenandoah National Park (Virginia). Major duties involve terrestrial salamander surveys that include: active sampling for salamanders during the day by lifting of cover objects; passive sampling at night during and after rain events; capturing, measuring, weighing and possibly marking salamanders with elastomer; collecting tail tips for genetic analyses; and conducting habitat assessments. Technicians may also participate in a stream salamander survey as well. The position requires completion of academic coursework in wildlife biology or related fields. Previous field experience with salamander surveys and the catching, handling, measuring and marking of amphibians is preferable. Students must be willing to work independently but most fieldwork will be conducted as part of teams of 2-3 people, so a demonstrated ability and desire to work effectively with a group is imperative. Work will be conducted on steep, rocky terrain during varying weather conditions. Students need to be in good physical condition and comfort and competence with outdoor work.

Students must possess a valid driver's license and be able to work at least 40 hours per week under a flexible schedule (including early morning, nighttime and weekend work). Students are responsible for all costs of transportation to and from Shenandoah National Park. Housing accommodations are provided while in Shenandoah National Park in a facility shared with other research technicians and staff. Compensation is commensurate with the level of education and experience (approximate wages are: $14-15/hour for two or more years of college, $16-18/hour for completion of BA/BS degree or higher).

To apply, send the following to Jennifer Sevin via email (sevinJ@si.edu) and copy to zootraining@si.edu by March 1, 2009 (for spring-summer technician) or April 1, 2009 (for summer only technician):
1.) Cover Letter
2.) Resume, including previous field experience, list of classes taken, contact information, and three reference contacts
3.) One piece of evidence of current or recent (within past 12 months) enrollment in degree program (e.g., transcript, letter from University admissions, a current registration card)

NEWS

1) Jefferson Salamander Distribution 2) Wood Frog Freezing

1) Additional Distribution Records of the Jefferson Salamander

Abstract: Several species of Mole Salamanders in the genus Ambystoma are targeted by various state, provincial, and federal agencies for conservation. These salamanders have specific wetland and forested upland habitat requirements that render them vulnerable to environmental alteration. The Blue-spotted Salamander, *Ambystoma laterale* (LL) and the Jefferson Salamander, *A. jeffersonianum* (JJ) have both been listed for protection in various parts of their ranges, but the identification of these salamanders is confusing because they often coexist with unisexual individuals that are mostly polyploid and use the sexual species as sperm donors. We used isozyme electrophoresis, blood erythrocytes, and chromosome counts in a continued effort to identify sexual and unisexual individuals in eastern North America. We examined 1377 salamanders from 118 sites in Connecticut, Massachusetts, New Jersey, New York, Pennsylvania, and Virginia. Most Pennsylvania salamanders were *A. jeffersonianum* (JJ) but A. *laterale* (LL), previously unknown from Pennsylvania, were found in that state. The two sexual species were never found together. We found diploid (LJ), triploid (LLJ; LJJ), and tetraploid (LLLJ; LJJJ; LLJJ) unisexuals. At most collecting sites, unisexuals were more numerous than sexual individuals. The association of sexual and unisexual individuals support a kleptogenic reproductive system in which the unisexuals steal genomes from their sympatric sexual sperm donors.
A gratis PDF of this article is available from the CNAH PDF Library at http://www.cnah.org/cnah_pdf.asp

Bogart, James P. & Michael W. Klemens. 2008. Additional Distributional Records of *Ambystoma laterale*, *A. Jeffersonianum* (Amphibia: Caudata) and Their Unisexual Kleptogens in Northeastern North America. American Museum of Natural History Novitates 3627: 1-58

2) Bitter cold winter is no big deal for hardy frogs

By Lisa Wright, Virginia Living Museum.
January 11, 2009 DailyPress.com

Imagine 65 percent of the water in your body is frozen for up to three months during winter.

Your heart stops beating. You stop breathing.

Yet when you thaw out in the spring, you come back to life in a matter of minutes. Sounds like science fiction, right? Well, if you happen to be a wood frog (*Lithobates sylvaticus*), it is how you naturally survive the winter. This survival strategy is called "freeze tolerance," the ability to withstand ice formation within the body when temperatures drop below freezing.

In most animals, freezing turns water in body cells to ice, causing extensive tissue damage. This is what happens during frostbite. Very few vertebrates can withstand freezing, but wood frogs can survive with the highest proportion of their body water frozen. Wood frogs measure about 1.5 inches to 3.25 inches in body length. Their body color is mostly tan or brown allowing them to blend into woodland habitats. They have a white line across the top lip and a distinctive dark brown "bandit mask" extending over the eye and ear drum. Wood frogs range throughout the northeast United States, Alaska, Colorado, Wyoming and much of Canada. They are the only frog species found north of the Arctic Circle. In Virginia, they live mostly in mountainous regions, but can be found in scattered populations in the Piedmont and northern Coastal Plain regions. They eat a variety of insects and other small invertebrates.

During hibernation, wood frogs burrow deep into leaf litter on the forest floor. When the temperature drops, the outside of the frog's body becomes coated with an icy shell. This triggers increased blood glucose levels, essentially an

"anti-freeze" solution that circulates to vital organs, protecting them against ice damage. The freezing process is completed after several hours and wood frogs can withstand temperatures as low as 21 degrees Fahrenheit.

In February or March, before ice is completely melted off of ponds, wood frogs thaw out and begin calling for mates. Their calls sound like a rapid clacking noise. Females lay one clutch of eggs in their lifetime, typically over 1,000 jelly-like eggs in a mass on the water's surface. After two months, tadpoles complete their metamorphosis and become adult frogs. Scientists inspired by this intriguing frog have developed techniques for cryosurgery and bioengineering, as well as preserving organs for transplant. Who knows? Someday knowledge gained by studying this humble frog might save your life.

You can see a wood frog, all year long, in the Virginia Living Museum's Mountain Amphibian exhibit. Wright is an education associate at the Virginia Living Museum. Visit the museum online at www.thevlm.org.

"If you talk with the animals they will talk with you and you will know each other. If you do not talk to them, you will not know them and what you do not know, you will fear. What one fears, one destroys."
Chief Dan George (1899-1981)

Answers from page 3

HERP TRIVIA ANSWERS

1. In turtles, how can males be distinguished from females?
   b. Long thick tails and concave plastron
2. What are the rings on turtle's scutes called?
   c. Annuli
3. How can you distinguish between cooters and sliders?
   c. Shape of the jaw (Sliders have rounded jaws, while cooters have flattened jaws)
4. True or False: Annuli can be used to accurately age many species of turtle throughout the duration of its life.
   b. False
5. True or False: One way to identify Painted turtles is by their smooth, unkeeled shells.
   a. True
6. In a snake, a fecolith is
   d. all of the above (When a snake is cold, it "wraps" around its stool instead of defecating. Low humidity further increases evaporative water loss, and stool hardens into a fecolith)
7. Amphibians around the world are facing an immediate crisis caused by what?
   d. A fungus
8. Cottonmouth (*Agkistrodon piscivorus*) venom is
   a. Hemotoxic
9. In the terminology of cladistics, reptiles (as classically defined) are considered to be *paraphyletic*. This means:
   a. The reptile class excludes groups that descend from the original reptile (i.e., mammals and birds).
10. The oldest known reptile is the:
    a. Hylonomus
11. The earliest reptiles appeared in what geological period?
    a. Carboniferous

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

Come visit our message board!

YAHOO! GROUPS

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

VIRGINIA LITERATURE

These selections represent articles published or in press, January to July 2008. Included are articles 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 interest in terms of research and/or conservation of reptiles and amphibians. Compiled by Dr. Joy Ware. Also included are herp related articles from the Va Natural History Society journal, Banisteria of the last 2 years.

Schooley, J. , M. Schwemm, and J. Barkstedt. 2008. *Rana catesbeiana* tadpole gigantism and deformity. Herpetological Review. 39 (3): 339-340.

Rohr, J.R., T.R. Raffel, J.M. Romansic, et al. 2008. Evaluating the links between climate, disease spread, and amphibian declines. Proceedings of the National Academy of Sciences of the United States of America. Vol 105 (45): 17436-17441.

Rothermel, B.B., S.C. Walls, J.C. Mitchell, et al. 2008. Widespread occurrence of the amphibian chytrid fungus *Batrachochytrium dendrobatidis* in the southeastern USA. Diseases of F Aquatic Organisms Volume: 82 (1) : 3-18.

Grant, E.H.C., L.L. Bailey, J. L. Ware, and K.L. Duncan. 2008. Prevalence of the amphibian pathogen *Batrachochytrium dendrobatidis* in stream and wetland amphibians in Maryland, USA : Applied Herpetology Vol: 5 (3): 233-241.

Gibson, J. D., T. Bulmer, and J. White. 2007. Observations on a malformed American Bullfrog (*Rana catesbeiaina*) from Fairfax County, Virginia. Banisteria 29: 35-36.

Johnson, A.J., A.P Pessier, J.F.X. Wellehan, et al. 2008. Ranavirus infection of free-ranging and captive box turtles and tortoises in the United States. Journal of Wildlife Diseases. Vol.: 44 (4), 851-863.

Sleeman, J.M., J. Brown, D. Steffen, et al. 2008. Relationships among aural abscesses, organochlorine compounds, and Vitamin A in free-ranging eastern box turtles (*Terrapene c. carolina*) Journal of Wildlife Diseases Vol: 44 (4): 922-929.

Bowne, D.R. 2008. Terrestrial activity of *Chyrsemys picta* in northern Virginia. Copeia 2: 306-310.

Mitchell, J.C. 2007. Message from a peat bank: first record for the Eastern Mud Turtle (*Kinosternon subrubrum subrubrum*) from Cobb Island, Virginia. Banisteria 29: 36-37.

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Mitchell, J.C., and G. Fischer. 2008. Predation stalemate: Red-tailed Hawk (*Buteo jamaicensis*) versus Eastern Ratsnake (*Elaphe alleghaniensis*). Banisteria 31: 54-56.

Gibson, J. D., and P. Sattler. 2008. Amphibians and reptiles. In A.V. Evans et al. The 2006 Potomac Gorge Bioblitz: Overview and results of a 30-hour rapid biological survey. Banisteria 32: 16-17, 63-68.

Hibernating Canebrake Photographs

Possibly the first ever photos of a hibernating canebrake rattlesnake (the eastern population of the timber rattlesnake) in a natural hibernaculum. The photos were taken with a SnakeEyeII inspection/camera system. The hibernaculum located in Chesapeake, is in an old tree stump, less than one foot below the surface. Remarkably, despite the sub-freezing temperatures, the snake appeared alert. Thanks to J.D. Kleopfer of the DGIF for the pictures and information.

VIRGINIA NATIVE

The **Virginia Native** section highlights 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.

SCARLET KINGSNAKE *Lampropeltis triangulum elapsoides*

Scarlet Kingsnakes are in a complex of kingsnakes/milksnakes that have the most extreme geographic variation in body size, pattern and color of any Virginia snake. The coloration certainly resembles the coral snake (*Micrurus fulvius*), whether it mimics the coral snake has been thoroughly debated. The reason for the coloration may be due to it's nocturnal activities. It is only found in the open at night, when its bright red colors appear to be gray. It is proposed that the strikingly bold colors of the scarlet kingsnake may actually function as nocturnal camouflage. The contrasting bands may resemble the alternating light and dark shadows on the forest floor.

Scarlet Kingsnakes can be difficult to find despite being locally abundant in many areas. They are fossorial and are almost entirely found underneath cover objects such as logs and stumps. Apparently, the Scarlet Kingsnake is more tolerant of cooler temperatures than other snakes, a possible adaptation to its fossorial and nocturnal habits.

The Scarlet Kingsnake Blitz will be focused on this single species, an unusual event for the VHS. Join us June 13 & 14 at Smith Mountain Lake State Park for a chance to get your hands on a species of snake that has only been found in one county in Virginia!