

## Pitvipers – In Focus at Last?

By Craig Ivanyi, Executive Director,  
Arizona-Sonora Desert Museum



Crotalus scutulatus, the Mohave Rattlesnake. A SW US native. Photo: Craig Ivanyi & Stephane Poulin, ASDM.

### A Simple Organism?

Biologists often chart life on earth in hierarchical terms using evolutionary trees, which suggest how one organism might be related to another, and give us a sense of where different forms of life may have appeared over geologic time. Since the organisms adorning the limbs of an evolutionary tree are laid out temporally, those that appear higher up (like mammals) are considered more “advanced” than

those appearing lower down (like reptiles). Unfortunately, we often misinterpret the meaning of – or the context in which – the word ‘advanced’ is used. This can do life on earth a disservice when it leads us (humans) to view lower vertebrates and invertebrates as less significant forms of life. The tree is used to understand relationships and place more recent or derived organisms higher up than ancestral ones, not to define an organism’s importance or assess how well it fits into the environment. Pitvipers, as is true for all snakes, are great examples of an

older lineage, and they appear on the lower branches of the tree.

### Pitvipers Are Widely Distributed in Both the Old and New Worlds

Pitvipers occur from sea level to over 4000 meters in elevation. According to the IUCN Viper Specialist Group, roughly twenty-six genera and over 160 species are recognized worldwide, with the majority of species occurring in the New World. Pitvipers are the only vipers found in the Americas, ranging from Canada southward through Mexico, and Central America to southern South America. In the Sonoran Desert, there are only three genera, but perhaps the richest regional diversity of rattlesnakes (roughly 26 varieties) is found here.

It is generally believed that pitvipers evolved from Old World

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Banded Rock Rattlesnakes, *Crotalus lepidus klauberi*, also native to the Sonoran Desert region. Photo: Craig Ivanyi & Stephane Poulin.



# Get Your April Photo Contest Calendar



Did you know Rainbows crawl around in the swamps? They do when they're **Rainbow Snakes** (*Farancia erythrogramma*), like the one this month's photo contest winner Mike Martin found. Download your free April calendar for a closer look, and to catch a glimpse of one of the fascinating snakes of South America, at <http://parcplace.org/images/stories/YOS/YearoftheSnakeCalendarApril.pdf>.

## Call for Photos for the 2013 Year of the Snake Calendar Photo Contest

We are seeking close-up, digital photos of snakes, preferably in their natural habitats or within an educational or conservation context. One winner will be selected each month to be the featured photo as part of the Year of the Snake online calendar. Runner-up photos will also be included in the calendar. Additionally, all submitted images will be considered for use in the Year of the Snake monthly newsletter and website as well as other Year of the Snake-related conservation, outreach, and educational efforts. Give us your best shot! For more information and for entry details, please visit [http://parcplace.org/images/stories/YOS/YOS\\_Photo\\_Contest.pdf](http://parcplace.org/images/stories/YOS/YOS_Photo_Contest.pdf).

2013 YEAR of the Snake

Visit [www.yearofthesnake.org](http://www.yearofthesnake.org)

PARC PARTNERS IN AMPHIBIAN AND REPTILE CONSERVATION

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- Your involvement!
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- Events to sponsor
- Ideas to make the year a success

Contact: [parcyearofthesnake@gmail.com](mailto:parcyearofthesnake@gmail.com)

A Year to Highlight

- Education
- Conservation
- Research

Monthly Newsletter

Year of the Snake products at the PARCstore [www.colepress.com/parcstore](http://www.colepress.com/parcstore)

Monthly Photo Contest & Calendar

Year of the Snake outreach posters:  
Available at [www.yearofthesnake.org!](http://www.yearofthesnake.org!)



## And another in the series...

The tiny island nation of Antigua and Barbuda commemorates the Year of the Snake with a stamp, too!

## Submit Your Citizen Science Projects

A compilation of snake citizen science (volunteer) inventory and monitoring projects has begun. These will be featured in our monthly newsletters. Send any information on these types of projects to [parcyearofthesnake@gmail.com](mailto:parcyearofthesnake@gmail.com).

# Year of the Snake Collaborating Partners



**The Edmonton Reptile and Amphibian Society** has ongoing efforts to protect and secure a local red-sided gartersnake hibernaculum that is being “loved to death” by its popularity and high traffic of visitors. Efforts have previously been limited to an educational sign and personal discussions with people met at the den. We have begun using trail cameras to document the traffic and threats to the den. Vehicles and people are trampling the densite, which consists of small inapparent openings amongst a gravel heavy substrate. In response to what we have found, multiple “No ATV” signs, and “No Hunting” signs have been hung along the highway frontage. Future work will include building gates across access points, building better fencing if it becomes

necessary, and doing a proper snake count to monitor population decline. Future goals depend on the landowner but include developing the area as a wildlife preserve with limited access that allows people the educational opportunity of observing the hibernaculum, but in a safe manner for the snakes. [www.edmontonreptiles.com](http://www.edmontonreptiles.com)



## The Vermont Reptile & Amphibian Atlas

**The Vermont Reptile and Amphibian Atlas Project** collects and disseminates data needed to make informed recommendations regarding the state status, state rank, and conservation of Vermont’s reptiles and amphibians. With the help of volunteers, collaborations with conservation organizations, and staff members, we are continuing to collect information and broaden our knowledge base regarding the natural history, distribution, and effective conservation of Vermont’s Reptiles and Amphibians. The ultimate goal of the

Atlas is to gather and disseminate the data that are needed on the reptiles and amphibians of Vermont in a way that involves and informs Vermont individuals and organizations so that they can become more informed and effective stewards of wildlife habitat. Visit us online at <http://community.middlebury.edu/~herpatlas/>



**Juniata Valley Audubon**, a regional conservation organization in southcentral Pennsylvania, and a chapter of the National Audubon Society, would like to be a partner in the Year of the Snake 2013 campaign to advance snake conservation, education, or research. Audubon continues to be dedicated to the conservation and restoration of natural ecosystems, focusing on birds, other wildlife, and their habitats for the benefit of humanity and the Earth’s biological diversity. Juniata Valley Audubon accomplishes its mission through advocacy, science, land stewardship, and education — working directly with Audubon Pennsylvania, the Pennsylvania state office of the National Audubon Society. The territory of the JVAS comprises all of Blair and Bedford Counties in south-central Pennsylvania and portions of adjacent counties. With more than 600 members, the JVAS is one of the state’s 21 Audubon chapters. All are welcome to join us at our program meetings or field trips.

## New York State Department of Environmental Conservation (NYDEC)

It is the Mission of NYDEC to conserve, improve and protect New York’s natural resources and environment and to prevent, abate and control water, land and air pollution, in order to enhance the health, safety and welfare of the people of the state and their overall economic and social well-being. [www.dec.ny.gov/animals/277.html](http://www.dec.ny.gov/animals/277.html)



Our growing list of Collaborating Partners will be featured in future newsletter issues.

If you are interested in contributing to the Year of the Snake efforts, please send an email to [parcyearofthesnake@gmail.com](mailto:parcyearofthesnake@gmail.com) with a brief description of your organization and its efforts. Our full list of partners can be found at: <http://www.parcplace.org/news-a-events/2013-year-of-the-snake/271.html>.

**Pitvipers - In Focus At Last?**, *continued from p. 1*

“true” vipers somewhere around the early Tertiary period. All vipers have “hinged” fangs. As members of the viper clan, pitvipers have this type of fang arrangement, but they have even more unique attributes, which put them in a more advanced subgroup of viper.

In spite of being advanced snakes, they appear to be simple – after all, they can’t close their eyes, lack fur and feathers, and cannot create body heat without assistance from the sun. In addition, they don’t have arms or legs, leaving them to slither from here to there on their bellies, so using the word ‘advanced’ may not appear to make sense in describing them. However, if we stop looking down on them from our human outpost and join them at eye level, then we might see how this is an apt description.



*Crotalus mitchelli*, the Speckled Rattlesnake. You can see the pit below the line between eye and nostril (arrow). Photo: Craig Ivanyi & Stephane Poulin.

## The World from a Pitviper’s Perspective is Quite Different Than Ours

Not only is a pitviper much closer *to* the ground (regardless of how long the snake is), it’s much more in tune *with* that ground. Having a long body in contact with the ground may tell it quite a bit about what’s moving nearby, before it actually sees the object. And, like other snakes, it sees well. But in seeing and sensing the world around, it “sees” things we do not, and these images might be of more importance than those relayed by the eyes – at least what we would call eyes.

Its other eyes come in the form of pits. On each cheek, midway between and slightly below an imaginary line connecting the eye and nostril, is a facial pit that is a doorway to a world we can barely imagine – infrared (heat) vision. Each pit is actually a deep pocket with a membrane stretched taut inside it. Behind the membrane, an air-filled chamber provides air contact on either side of the membrane. The pit membrane is

richly vascular and heavily innervated with many heat-sensitive receptors formed from terminal masses of the trigeminal nerve (in humans this nerve is responsible for sensations in the face). It is likely that the vasculature provides oxygen to the receptor terminals, which rapidly cool the receptors to a thermally neutral state after being heated by thermal radiation from a stimulus. Without this cooling system, receptors would remain in a warm state after being exposed to a warm stimulus, which would present the animal with afterimages even after the stimulus was removed.

*“The tree [of life] is used to understand relationships and place more recent or derived organisms higher up than ancestral ones, not to define an organism’s importance or assess how well it fits into the environment.”*

## Here’s How Thermoreception Works

Scientists have studied thermoreception in pitvipers for years and have gained a fairly good idea of how it works, and how effective it is. It functions similar to a pinhole camera by locating the source of thermal radiation on the heat pit membrane. Computer analysis of images seen by a facial pit indicates that resolution may be fairly poor. However, some focusing and sharpening of an image occurs in part of the trigeminal tract, so it is possible that integration of the visual and infrared information may sharpen the image. Also, the pitviper can choose sites in colder areas to maximize the contrast of warm prey, in order to achieve a high degree of accuracy. As opposed to overall resolution, recent research has shown that a pitviper’s infrared thermoreception is able to detect differences of mere



Close-up of the head of *Crotalus atrox*, the Western Diamond-backed Rattlesnake. The facial pits enable infrared thermoreception. Photo: Craig Ivanyi & Stephane Poulin.



*Crotalus basiliscus*, native to Mexico.  
Photo: Craig Ivanyi & Stephane Poulin.

fractions of a degree, making it possible to form amazing heat images.

Less obvious is why this sense evolved and what its primary use is. For decades its primary function was presumed to relate to prey gathering. Many experiments have demonstrated that pitvipers can use infrared to guide them in accurate strikes at prey even when their eyes have been covered. Another concept is that it allows these snakes to avoid predation, by giving them the ability to discern between small (less harmful) animals and large (more risky) ones. The two concepts combined were believed to cover all the hypothetical bases, until some biologists proposed a third concept.

Perhaps infrared vision could be used to analyze the snake's environment by forming a thermal map of an area, allowing it to find suitable thermal environments. How important is this? For a snake it can be the difference between life and death of an individual or the development of life of others.

At this point, biologists are coming to realize that heat vision in snakes is a specialized sense applied in a generalized way for a variety of purposes, rather than just one. It appears to help them analyze their environment to find appropriate thermal zones, avoid predation, and target the warmest part of potential prey, all of which increase the likelihood that the snake survives and reproduces. So, these ancient animals don't sound so primitive, do they?



*Crotalus molossus molossus*, the Northern Black-tailed Rattlesnake. Photo: Craig Ivanyi & Stephane Poulin.

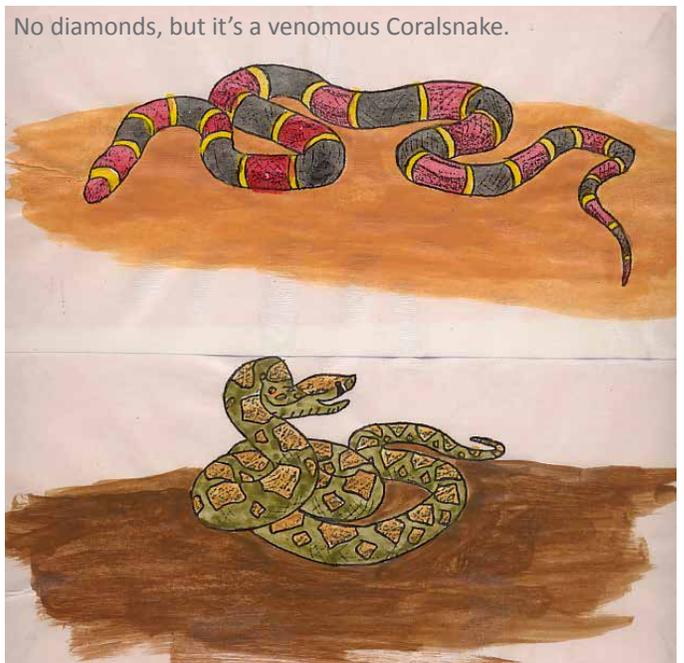
## Snake Myths

by Carrie Elvey,  
The Wilderness  
Center

Because of their unique lifestyle, snakes are prone to being the subject of myth and legend. Some of these myths have a kernel of truth, others have no discernible origin. Read on to learn the truth about these myths.

**Myth:** You Can Tell a Venomous Snake by the Diamond Pattern on Its Back

**Facts:** Although some venomous snakes (rattlesnakes) do have diamond patterns, others (coral snakes) do not. Also, some non-venomous snakes (water snakes) have a distinct diamond pattern. It is important to learn the other characteristics of venomous snakes (elliptical pupils, pits in addition to nostrils, single scales in the underside of the tail, etc.). The most efficient way to distinguish venomous from non-venomous snakes is to learn the species in your area and become familiar with those snakes' distinguishing characteristics.



No diamonds, but it's a venomous Coral Snake.

Has diamonds, but it's a *non*-venomous Hog-nosed Snake!  
Hint: look for its tipped-up nose.

Artwork courtesy of The Wilderness Center

# Our Giant Serpent of the Southeast

Christopher L. Jenkins, PhD, *The Oriante Society*

This article is taken in part from The Oriante Society Indigo Magazine. The original article, written by Christopher L. Jenkins, PhD, Mr. Fred Antonio, and Mr. Kevin Stohlgren, was titled "Our Giant Serpent of the Southeast: The Oriante Society's Efforts to Conserve Eastern Diamondback Rattlesnake Populations".



Eastern Diamondback Rattlesnake. Photo by Dirk Stevenson.

The Eastern Diamondback Rattlesnake, *Crotalus adamanteus*, is an archetypical species known from the Pleistocene of Florida and has had a long affiliation with human cultures in the southeast. In Florida, prehistoric kitchen middens (mounds of domestic waste from past societies) have contained their remains and they have long been the subject of cultural art and lore. Of the approximately 50 species of rattlesnakes, the Eastern Diamondback is the largest and most massive of the rattlesnakes, attaining a maximum length of 8 feet (2.4 m) and weighing close to 20 pounds (9.0 kg). A surprise encounter with an Eastern Diamondback is always an exciting and impressive event leading to exaggerations of size, like those 10-foot rattlers stretching from one side of the road to the other. During his 46-year tenure (1929-1975) at the Reptile Institute in Silver Springs, Florida, Ross Allen offered a reward of \$500 to anyone who could bring in a live 8 foot Eastern Diamondback. He retired without having to pay out.

The rattle apparatus of the Eastern Diamondback is well developed and may be the most massive of modern day *Crotalus*. Born with one button at the tip of the tail, a new segment is added each time the snake sheds. A young snake during its first year may shed 3 to 5 times, then typically twice a year thereafter. Thus the snake's age cannot be determined by counting the number of segments on a rattle. Also, the rattle is a relatively fragile apparatus that can be broken during its normal

activities. It is rare to find an adult rattlesnake with a complete set of rattles.

The development of a rattle apparatus is an unusual enhancement on par with any unique evolutionary feature in the animal kingdom. Rattling is thought to have evolved to warn and ward off large North American Pleistocene mammals (i.e. bison, elephants, rhinos, horses, camels) to avoid being step on or trampled. This defensive strategy became a distinct liability when these megafauna became extinct approximately 10,000 years ago and ancient American Indians were attracted to the sound as a food source. It then became advantageous not to rattle when approached by a human. Today this discriminatory behavior is seen when Eastern Diamondbacks initially stay still, not rattling, when approached by a person. Their first response, if undisturbed, is to depend on their cryptic pattern and coloration to avoid detection. But disturb them, and they will rise up in an imposing defensive position, ready to strike and defend themselves!



Diamonds of the Diamondback. Photo by Dirk Stevenson.

The Eastern Diamondback is a sit-and-wait ambush predator, routinely spending its days tightly coiled along a small mammal trail. From these ambush sites they use both visual (eyes) and infra-red reception (facial pits) for detecting prey movement. Once a prey animal is within range, they strike the target area (usually the neck and shoulder region), inject venom, and release the prey item. Chemosensory searching by olfaction (smell/nostrils) and vomeronasal (tongue flicking/Jacobson's organ in the roof of the mouth) tracking enables rattlesnakes to trail and find their prey.

Interestingly, it is actually the trail of their own venom that the rattlesnakes follow as they track down their dying prey. Venomous snakes have the ability to gauge the amount of venom delivered in a strike, from little to none in a quick defensive strike, to a large yield as when attempting to capture prey. The prevailing theory on why venomous snake and venomous fish have evolved such highly toxic venoms is the less distance a prey animal travels following envenomation, the higher the probability that it will be found and consumed. The Eastern Diamondback's diet is predominately mammals, including Cotton Mouse (*Peromyscus gossypinus*), Cotton Rat (*Sigmodon hispidus*), Florida Wood Rat (*Neotoma floridana*), Eastern Gray Squirrel (*Sciurus carolinensis*), Marsh Rabbit (*Sylvilagus palustris*) and Eastern Cottontail Rabbit (*Sylvilagus floridanus*). Eastern Diamondbacks provide a great service in helping keep these rodent populations in balance.



*C. adamanteus*, ready to strike. But it would rather you were a rabbit or a rat! Photo by Dirk Stevenson.

Eastern Diamondbacks have a late summer (August, September) and early spring (March, April) breeding season. Males will often combat each other over territory and breeding rites with resident females. Ritualized male combat in Eastern Diamondbacks determines social dominance and is comprised of a series of acts, including raising the anterior 30% to 40% of their bodies from the ground, intertwining the combatant's anterior bodies around each other, toppling, and pushing each other to the ground as a form of physical domination. This wrestling match can last from a few minutes to hours until the subordinate flees. This is a stereotyped and ritualized series of behaviors seen in many species of snakes and normally results in little physical harm.

The gestation period for female Eastern Diamondbacks

is approximately 5 months. Most births occur in August and early September and litter size averages 12 young. At birth, neonate (newborn) Eastern Diamondbacks are capable of delivering a venomous bite, but the bite of larger individuals is more dangerous due to a larger venom yield. Female Eastern Diamondbacks are capable of reproducing annually if prey resources are abundant, but reproducing every 2 to 3 years is more common. Following parturition (birth), neonates often stay with the female until their first shed, about 2 weeks following birth. This "neonatal aggregation" with Mom in attendance affords protection for the young during this vulnerable period.



Eastern Diamondback in its native, and threatened, Longleaf Pine ecosystem. Photo by Kevin Stohlgren.

The majority of the Eastern Diamondbacks range is within the Longleaf Pine (*Pinus palustris*) ecosystem of the Southeastern Coastal Plain. Historically, this region was covered by an endless sea of savanna-like grasslands with low densities of longleaf pine trees. These extensive grassland forests were intersected by blackwater creeks and floodplain swamps. The Longleaf Pine ecosystem is adapted to frequent fires, and in some cases, fires may have burned across this landscape every couple of years. These frequent fires allowed many of the grasses and forbs to reproduce, which in turn produced food for the small mammals that Eastern Diamondbacks prey on. The fires also kept the landscape relatively open, allowing Gopher Tortoise (*Gopherus polyphemus*) populations to flourish, resulting in many burrows across the landscape that Eastern Diamondbacks could use for refugia and places to overwinter. Fire is so important to the Longleaf Pine ecosystem that it is often referred to as "the fire forest". Sadly, the Longleaf

Pine ecosystem has changed and only a small percentage remains. Europeans entered the landscape over 200 years ago, changing the future of Eastern Diamondbacks and their habitat forever. Today the southeastern Coastal Plain is characterized by fragmentation with extensive areas of agricultural, rural residential, and urban development, including an extensive network of roads. Most of the remaining forests are in production forestry where the natural grasses and forbs have been removed and off-site pines (primarily Loblolly and Slash Pines, *Pinus taeda* and *P. elliottii*) are planted at high densities and harvested frequently. The decline of the seemingly endless southeastern Coastal Plain has caused Eastern Diamondback population to decline significantly.

Recently, Eastern Diamondbacks have been the focus of attention for wildlife conservation and management organizations following a petition to the U.S. Fish and Wildlife Service to list them as a threatened species under the United States Endangered Species Act. In general, most everyone agrees that the snake has declined over the last 200 years, but little attention has been paid to its status except in a few states on the edge of its range. Eastern Diamondbacks historically occurred almost continuously from southeast Louisiana to southeast North Carolina but today their distribution is much more fragmented. Eastern Diamondbacks are no longer thought to occur in Louisiana, are restricted primarily to protected land in Mississippi and North Carolina, and have declined throughout the remainder of their range. Currently there are no laws against collecting or killing Eastern Diamondbacks in Louisiana, Alabama, Florida, Georgia, and South Carolina (with the exception of some state lands). In

Mississippi, 4 Eastern Diamondbacks can be taken each year with a hunting license and in North Carolina, Eastern Diamondbacks are considered an endangered species, thus it is unlawful to take or possess one. With the current petition for endangered species status many states are reviewing the status of Eastern Diamondback populations and there could be some changes to the existing regulations very soon.

Eastern Diamondback Rattlesnakes are one of the world's largest and most amazing vipers. They are an icon of one of North America's most majestic, yet now decimated ecosystems – the Longleaf Pine ecosystem. Despite their secretive nature, this wonderful, but threatened animal still evokes fear in many people resulting in many Eastern Diamondbacks being killed every year. So is there a future for Eastern Diamondback Rattlesnakes; is there room for people to coexist and live side by side with this amazing animal? We think so. While Eastern Diamondbacks will never again exist uninterrupted from Louisiana to North Carolina, there are many wild places left in the southeastern Coastal Plain. With a new interest in the conservation and management of this species, soon we will see the Eastern Diamondbacks protected across its range including in these wild places and that many organizations will continue to protect, restore, and manage the areas this species inhabits. With the dedication of many and the partnerships that are currently sprouting to rally for this species, we see a long future for Eastern Diamondbacks, a future where our children's children can walk among the pines and see a majestic Eastern Diamondback, a beautiful predator, coiled at the base of a towering Longleaf Pine waiting for his next meal.

### Have a Question? Ask the Experts!

Submit your snake questions via email ([parcyearofthesnake@gmail.com](mailto:parcyearofthesnake@gmail.com)) to our panel of snake experts, and we will select questions to answer in upcoming newsletters. Please include your name and location in your email message.

### Are You an Educator or Interpretive Naturalist?

We are working to create resources for teachers and naturalists! If you are willing to share, please send your unit materials, educational program information, or PowerPoint presentations to [parcyearofthesnake@gmail.com](mailto:parcyearofthesnake@gmail.com). Please include your name, the name of your school/nature center or organization, and location. If you did not create the materials, please be sure to tell us where you found the materials.

### Submit Your Snake Art, Stories, and Poetry

Submit photos of your snake art (jpg, tiff, or pdf files) and copies of your stories and poems via email to [parcyearofthesnake@gmail.com](mailto:parcyearofthesnake@gmail.com). Please include your name, location, and any comments about the submission in your email message. We will select submissions to include in upcoming newsletters.



## LIZARD WATCHING HOTSPOTS!

By the two guys who literally  
wrote the book on Southwest Lizards  
**Rob Lovich Ph.D and Larry Jones**  
Authors of *Lizards of the American Southwest*

**Friday April 19, 2013**

7:00-8:45 p.m

Guided Lizard Walk the following day,  
April 20, 8 - 10 a.m.

**Apr. 19, Friday, 7:00 – 8:45 pm**

### **Lizard (and Snake) Watching Hotspots!**

By the authors of *Lizards of the American Southwest*.

**Presenters: Rob Lovich Ph.D and Larry Jones**

Lizard and snake experts Rob Lovich and Larry Jones will make their annual pilgrimage to the Anza Borrego Desert Natural History Association Library to give a presentation on “Lizard (and Snake)-watching Hotspots of the American Southwest.”

Rob will start with a discussion of species found in the first of the three hotspots—the southern California deserts, including Anza Borrego Desert State Park. Rob will also discuss his recent field research.

Moving east along the international border, Larry will then take us on a virtual ecotour of lizards and snakes from the two other hotspots: southeastern Arizona (and adjacent New Mexico) and the Big Bend Region of

Texas. Each of the three areas has a unique assemblage of lizards and snakes, so by visiting all three, you can see the vast majority of the species occurring in the American Southwest (and the United States). Many of these borderland species can only be seen elsewhere in Mexico. Fortunately for us, these critters live amid some of the greatest scenery the deserts and mountains have to offer.

After the Friday-night presentations, Larry and Rob will sign their book, “*Lizards of the American Southwest*.” See field trip on Saturday.

**Apr. 20, Saturday, 8:00 – 10:00 am**

### **Lizard (and Snake) Walk**

**Leaders : Rob Lovich Ph.D and Larry Jones**

Go with two of the very best as they lead participants on a field trip to view lizards and snakes in the Anza-Borrego Desert. Although the presentation and field trip (not to mention book-signing) are lizard-centric, Anza-Borrego Desert State Park and the surrounding environs are good places to observe snakes at this time of year...but be forewarned—snakes are protected in the Park and looking for them can be under the scrutiny of Park law enforcement personnel. Having said that, April is sometimes a very good time to see snakes (daytime, normally, but night-time can be fantastic if warm enough). Resident snakes in the area include: Rosy Boa (*Lichanura trivirgata*), Red Diamond Rattlesnake (*Crotalus ruber*), Sidewinder (*C. cerastes*, sometimes in droves), Speckled Rattlesnake (*C. mitchelli*), California Kingsnake (*Lampropeltis getula californiae*), Glossy Snake (*Arizona elegans*), Spotted Leaf-nosed Snake (*Phyllorhynchus decurtatus*), and Western Shovel-nosed



*Crotalus cerastes*, the Sidewinder, at Borrego Springs last year.  
Photo © Larry LC Jones.

Snake (*Chionactis occipitalis*, sometimes in droves). So join Larry and Rob and learn about lizards and their siblings (the snakes) in ABDSP...and don't forget, Lizards are Equally Cool!

Be sure to bring water, sunscreen, water, hiking shoes, sunglasses, water, hat, and binoculars—plus a camera with zoom or long-distance macro lens is always a bonus. The place of field trip, plus car-pooling options, will be arranged during the Friday night presentations. Meet at the Anza Borrego Desert National History Association Library. Space is limited. No charge. Visit <http://www.abdnha.org/calendar1.htm> for more details and to reserve a space!



A basking Speckled Rattlesnake, *Crotalus mitchelli*, in Blair Valley, Anza-Borrego Desert State Park. Photo © Larry LC Jones.



Follow all of the Year of the Snake news and happenings on Facebook (<http://www.facebook.com/YearOfTheSnake2013>) and Twitter (@yearofsnake2013).



## Upcoming Meetings & Events

**AZA (Association of Zoos and Aquariums) Mid-year Meeting**, April 7-12, Charleston, SC

**Lizard (& Snake!) Watching Hotspots** talk and tour, April 19 and 20, Anza-Borrego Desert State Park, CA. Led by Rob Lovich and Larry Jones.

**North Carolina PARC and the North Carolina Herpetological Society**, April 19-21, Joint meeting, NC Zoo, Asheboro, NC

**Oriante Society at the Alabama Wildlife Center**, April 28, Pelham, AL

**Oriante Society at the Fernbank Science Center**, April 28, Atlanta, GA

**Graduate and Professional Course - Species Monitoring and Conservation: Reptiles**, May 13-24, Smithsonian Conservation Biology Institute, Front Royal, VA

**Coastal Herpetology Course**, May 13-24, University of Southern Mississippi, Gulf Coast Research Laboratory, Ocean Springs, MS

**2013 Spring Snake Count**, May 18-27, Center for Snake Conservation. For more information please visit [www.snakecount.org](http://www.snakecount.org).

## Submit your Articles for Consideration in The Year of the Snake News

We would like to hear about your research projects (local, national, and abroad), citizen science efforts, school projects, folklore, natural area conservation proposals, snake luminaries (people or animals that have been shining stars in your life), or other topics related to snakes.

Please include these components:

- 1) Title; 2) Author name, affiliation, location; 3) Text: ~400 words will fill one page, a nice size to consider. Shorter and longer articles are fine. It is an electronic newsletter, after all! ; 4) 1-2 photographs or graphics (with captions and photographer recognition; sometimes we can use more than 2) per page: 300+ dpi resolution, jpg or tiff.

Themes of the upcoming monthly newsletters include: venomous snakes; invasive snakes; snakes of narrow habitats; aquatic snakes; conservation efforts; international snake conservation; captive breeding & reintroduction; and regulation, trade & commerce. Any snake-related topic is welcome.

Submit your potential articles or any questions pertaining to contributing via email to [parcyearofthesnake@gmail.com](mailto:parcyearofthesnake@gmail.com).