



# Year of the Lizard News

No. 5

September 2012



[www.YearoftheLizard.org](http://www.YearoftheLizard.org)

## Keeping Lizards (Happy) in Captivity



Bearded Dragon,  
by Kirsty Roberts

Lizards are a fascinating and diverse group of animals found on almost every continent in the world. From the largest, the Komodo Dragon that can reach 10+ feet in length, to the smallest, the Jarauga Lizard that can fit on a dime, humans have always found them interesting, and in recent decades more and more lizards have been kept privately as pets around the world. With this increasing interest by the private sector in having lizards as pets comes great responsibility and challenges. All lizards are not the same, and each has its own individual evolutionary history that defines how the lizard needs to be cared for in a captive environment. For many species, little is known about their requirements for such essentials as food, exposure to UV,

size of their enclosure, and what type of medical care is needed. However, there are other species available that we know a lot about pertaining to their care, which make excellent pets for those who are committed to their wellbeing. Lizards can make excellent pets for both kids and adults, but it is important that many things are taken into consideration before deciding to own a lizard. In this issue of the Year of the Lizard News, we hope to highlight the challenges and rewards captive lizards can provide, but also help you to avoid the pitfalls so that you can be a responsible and caring lizard owner. If you are considering a lizard as a pet, proper research and resources are necessary to give you a healthy, safe, and fun-filled experience, for both you and the lizard.

— *Brian Aucone, Vice President for Animal Collections, Denver Zoo*

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The charismatic side of lizards from an article in the Daily Mail.

## Lizards as Pets

*Kevin T. Fitzgerald, Ph.D., DVM,  
DABVP Staff Veterinarian VCA  
Alameda East Veterinary Hospital  
Denver, Colorado*

Lizards are certainly some of the most diverse and fascinating reptiles. We first start seeing lizards in the fossil record about 120 – 125 million years ago. They are the most successful reptile, with over 4,400 species identified. Lizards are amazing and fill a variety of niches. They are found in a surprising number of quite differing habitats. Likewise, lizards display an astonishing assortment of reproductive strategies. They developed the land-egg which, unlike amphibians, freed them from being tied to the water for reproduction

*continued on p. 3*

**Look for Issue No. 6 of  
Year of the Lizard News  
in November!**

*"Precisely the least, the softest, lightest, a lizard's rustling, a breath, a flash, a moment - a little makes the way of the best happiness."*

Friedrich Nietzsche (German classical scholar, philosopher and critic of culture, 1844-1900)

## Get Your September Photo Contest Calendar



Chameleons boast some nearly-surreal colors and patterns. Meet Spyro, a Yemen (or Veiled) Chameleon who belongs to winning photographer Jacob-Henry Camps. To get a close-up view of Spyro and the dramatically posed runner-up when you download your monthly calendar from <http://parcplace.org/images/stories/YOL/YearoftheLizardCalendarSeptember.pdf>.

### Call for Photos for the 2012 Year of the Lizard Calendar Photo Contest

We are seeking close-up, digital photos of lizards, 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 Lizard 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 Lizard monthly newsletter and website as well as other Year of the Lizard related conservation, outreach, and educational efforts. Give us your best shot! For more information and for entry details, please visit <http://www.parcplace.org/images/stories/YOT/YOLphotocontest.pdf>.



Did you miss the August calendar? Download it anyway, so you can see this beautiful Gilbert's Skink, photographed by winner Jackson D. Shedd.



Runner-up Nathan Gregory brought back the image of this basking pile of Santa Fe Marine Iguanas from the Galapagos.



*Crunch! Mohave (Great Basin) Collared Lizard, Crotaphytus bicinctores), photographed in action by Tim Torell.*

### Collared Lizards Go Wild for Grasshoppers!

You saw it on the calendar, but it's even better on video! Tim Torell, our winning photographer from February, has put together a great video of Mohave Collared Lizards hunting grasshoppers. These lizards really throw themselves into their work! Check it out, it's great fun, and you'll be amazed.

The video can be found at: <https://vimeo.com/45618351>

We hope to post a link on the Year of the Lizard website ([www.yearofthelizard.org](http://www.yearofthelizard.org)) soon, and perhaps links to future videos that Tim says are in the works.

*continued from p. 1: Lizards as Pets*



*With their very specialized diet, horned lizards like this one don't make very good pets, and many species are at risk because of habitat loss and displacement of their prey, native ants, by invasive fire ants. Watch them where they live, but please don't take them home! Photo by Juan Martinez.*

(though some retain the eggs inside the female until birth, and some are live-bearing, or even reproduce via parthenogenesis/"virgin birth"). Many lizard species are capable of tail autotomy or voluntary loss of their tail. This enables lizards that can do this to distract and confuse predators that grab their tail, allowing the reptile to successfully escape. Some Horned Lizards (called "horny toads" but actually are lizards) can squirt blood from their eyes in an attempt to discourage predators. In some lizard species, a parietal "eye" is found in the top of the head (notably Green Iguanas, among others). Although it does not form images, this structure does play a role in regulation of reproductive hormones, thermoregulation, time spent basking, and hibernation. When compared to the brain of amphibians or fish, the brain is

larger, with a larger cerebrum and cerebellum. However, the reptilian brain is small when compared to mammals and comprises less than 1% of the lizard's body mass. The lizard ear is better developed than their amphibian forebears. Lizard vision is excellent, particularly with regard to movement. These so-called "lower vertebrates" have many evolutionary modifications and adaptations that show them to be anything but primitive!

Reptile ownership has recently been cited as "the fastest growing population of pet animals in the United States." It is estimated that 6% of American homes have a reptile as a pet. With the exponential increase in our knowledge base in veterinary medicine, with the ever-expanding strengthening of the human-animal bond, and with growing acceptance of reptiles being kept as pets, owners of



*If you look closely, you can see the parietal eye in the middle of the top of the head of this Bleached Earless Lizard (Holbrookia maculata ruthveni). This animal was photographed in the wild by Larry L.C. Jones.*

pet reptiles are seeking more medical care for their animals than ever before. Services that were reserved only for canine and feline patients are now offered routinely to reptiles (blood work, fecal exams, biopsy, surgery, radiographs, and ultrasound). We as veterinarians can provide so much more than even a few decades ago and people have come to expect that.



*From Issue 2, Volume 5, of Keeping Reptiles Newsletter, "What lizard is right for you? Things to consider when deciding".*

Owners of reptiles often form as deep a bond of affection as their dog- and cat-owning counterparts. Many reptilian species are exceptionally long lived, and with appropriate care can live for decades. Family members, particularly children, can show a fascination with reptiles (lizards in particular) and become incredibly bonded to pet reptiles. For all the special adaptations listed, lizards can make amazing pets. Let us now examine some of the pitfalls of keeping lizards and see how they can be avoided.

When compared to the other commonly kept reptiles (snakes and turtles), lizards are notoriously hard to manage. They have strict

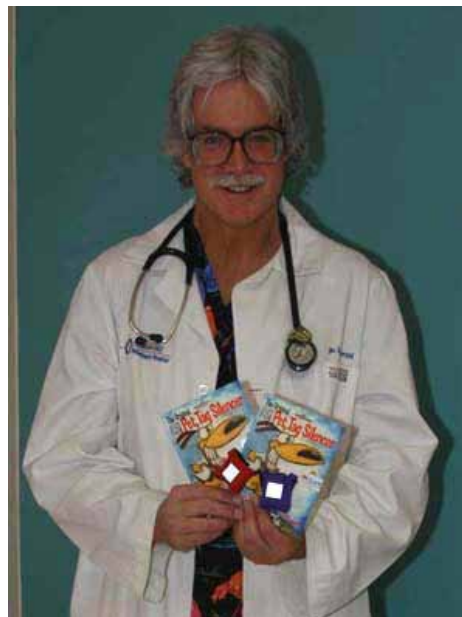


*Chamelions can be difficult to care for properly, and usually don't like to be handled very much. Flap-necked Chameleon (Chamaeleo dilepis), photo by Maria Eifler.*

requirements with regard to humidity, access to natural or artificial sunshine and Vitamin D, temperature, and their nutrition. Even well-seasoned herpers may have extreme trouble in trying to raise certain species. The chameleons in particular can be exceptionally trying.

When considering obtaining a reptile as a pet, do your homework. Find out what the animals need, familiarize yourself with their lifestyle and behavior, talk to people that have kept them, find a knowledgeable veterinarian as a health resource, and closely examine just what equipment in terms of housing and set up is required and how expensive and involved it is. Keeping reptiles is a commitment. These are living creatures that share the same life force that we do, they are not merely a fad or impulse buy. Once you take them home, their entire lives, the whole of their living experience, is provided by you. They are totally dependent on you—for everything. Do you have the space for their terraria, the money for their set-up and food? Most importantly, do you have the time? Taking care of reptiles can be incredibly labor intensive and can be surprisingly expensive. Keeping these animals as pets has to be a labor of love. Only with your constant care and vigilance can they prosper and thrive in captivity. That is not to say that it cannot be done but, unfortunately,

most of the problems veterinarians see in captive reptiles stem from poor husbandry and neglect. Sometimes we see geriatric problems due to old age, kidney failure, and cancer (every tumor reported in people has been described in lizards), but often their problem comes directly from horrific care and the abysmal conditions they are kept in. Like all living things, reptiles deserve our respect and consideration. Educate yourself meticulously about the particular needs and requirements of the reptile



*Besides being featured on Animal Planet's Emergency Vets and E-Vet Interns, Dr. Fitzgerald is an adjunct professor at the University of Denver, has written numerous articles and textbook chapters on topics ranging from emergency medicine to reptile medicine, and performs as a stand-up comedian.*

that you intend to house. Keeping reptiles can be successful and a wonderful, heartwarming experience but only if you have the time, effort, and money to do it right. Your veterinarian can help direct you. They may inform you that some lizards have greater hardiness than others and are easier to keep. Recently, at our busy veterinary practice a ten-year-old boy was describing to me the excitement of watching his bearded dragon at home in his terrarium. As the child spoke, his eyes became alive and his voice quickened. He said, "I made him a little waterfall that he drinks from. Doctor Kevin, it is like watching a dinosaur in my house." Is there anything more beautiful than that? Keeping reptiles can awaken the wonderment of childhood, something that we all need to nurture. Go be a kid again, if just for a few hours each day. But take care to do it every day.



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

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

## Lizards as Pets: Bearded Dragons as a Model

A. E. (Ann-Elizabeth) Nash, Executive Director, Colorado Reptile Humane Society (CoRHS), [www.corhs.org](http://www.corhs.org)

*Lizards make great pets! Do your research! Make sure you understand the needs of a pet lizard before you adopt!* These statements are all true and important, but let me also introduce some additional considerations about lizard pets.

While volunteering for the Blue Iguana Recovery Program in 2005, I observed a Cuban Tree Frog take 4 leaps and travel 5 yards. This observation stopped me cold – just how awful was that naturalistic, complete-with-live-plants, 29-gallon tall aquarium I provided for the same species? Couldn't I do a lot better for this captive animal?! What would help my pet have a life where he or she can thrive and not simply survive?

I start with trying to learn where an animal lives in the wild, how much land it uses (home range), and the breadth of its diet (few lizards eat only 1 diet item). For example, Western Bearded Dragons (*Pogona minor*) used between 3 and 11 hectares (1 ha = ~ 1 football field, is ~107,640 sq. ft.) worth of space! Reviewing on-line photos of wild Bearded Dragons shows me that they don't live on loose beach sand that's often recommended. Their habitats are best described as semi-arid, with sandy soils that contain lots of plants.

I then remind myself of another set of goals for captive lizards in my care, commonly known as the 5 Freedoms:

- Freedom from hunger and thirst by ready access to nutrition and fresh water to maintain full health and vigor.
- Freedom from discomfort by providing an appropriate environment, including shelter and a comfortable resting area.
- Freedom from pain, injury, or disease by prevention or rapid diagnosis and treatment.
- Freedom to express normal behavior by providing sufficient space, proper facilities, and company of the animal's own kind (as appropriate).
- Freedom from fear and distress by ensuring conditions and treatment which avoid mental suffering.

For Bearded Dragons, I often see care that is minimal at best: very small tank, only 1 diet item (often crickets), inadequate thermogradient, no UVB lighting, and 100% confined to cage. Understanding the heating, lighting, and nutrition needs of your pet lizard is critical to its health—this is the surviving part of my rhetorical question.



Both animals were residents of Colorado Reptile Humane Society until adopted. Top animal in grass is Zena, bottom animal in harness is Winnie.



Most of us house Bearded Dragons in 40-55 gallon and larger aquaria. But to meet the 5 Freedoms, it's important to realize that such space can't keep a Bearded Dragon stimulated, nor is it large enough to allow this lizard to express its natural behaviors including strutting, running, capturing prey, and climbing, to name but a few.

I think we all own pets for what they give to us—companionship, pleasure, and intellectual interest. We also need to think about keeping our pets as stress-free as possible. Even if a reptile doesn't bite, it may not enjoy new people, loads of noise and commotion, or trips in the car.

The wonderful thing about Bearded Dragons is that we can bring them out of their habitats to run inside our homes, to chase down superworms, to climb a couch. If you are lucky enough to live in the right climate, you can build a secure outdoor cage for your pet dragon—stimulating sunshine (and free UVB!), fresh air, safe plants to eat, basking naps.

No, not all lizards make great pets in our homes. Some require far more space and water than most of us can

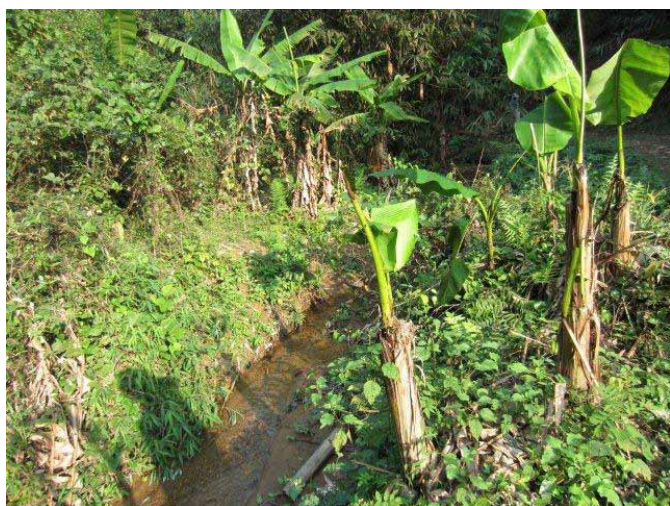
provide, more time than we want to devote to their needs, or grow too large to be managed. By asking ourselves honestly if we can meet the 5 Freedoms for any lizard pet, we can avoid making mistakes in pet choices. Most of us would be stretched by the specialized diet and water needs of Caiman Lizards. Most of us cannot socialize a Nile Monitor. Many lizards are not happy with the amount of time we want to interact with or handle them.

But...some lizards do make good pets, are able to learn to live with us, and their diet, space, and other habitat needs are possible for us to meet—and to exceed the mere minimum to help them thrive. A thriving pet will offer so much more to us as pet owners: it's a classic win-win for human and lizard.

## Species Spotlight

### Breeding Program for the Enigmatic Chinese Crocodile Lizard

*Diane Yoshimi, Zookeeper, Woodland Park Zoo*



*Shinisaurus habitat in China. Photo by D Yoshimi.*

The Chinese Crocodile Lizard, *Shinisaurus crocodilurus*, is a semi-aquatic species native to southern China and northeastern Vietnam. It is a monotypic species in the family Shinisauridae, thought to be closely related to anguils. These lizards are so named for the distinctive keels on the dorsal surface of their tails, superficially resembling a crocodile in appearance. Discovered in 1928, there are eight known populations in the Guangxi and Guangdong provinces in China and in 2002, a new population was discovered in Vietnam. These lizards prefer slow-moving streams in broadleaf forests at elevations of 200-1200 m above sea level, and prey upon various invertebrates, tadpoles, and fish. It is an ovoviparous species that gives birth after 8-12 months of gestation.

*Shinisaurus* populations have

declined dramatically from 6000 individuals in 1978 to 950 in 2004. It is listed as a CITES Appendix II animal and is a category I species under the Wild Animal Protection Law in China. Population declines are attributed to their collection for the food and pet trades, habitat destruction, and to a decline in water quality due to damming and

to fishing, mining, and forestry practices (Huang et al. 2008). To deal with these threats, the Chinese government has devoted significant resources for habitat preservation, research, and captive breeding.

The Woodland Park Zoo (WPZ) in Seattle, Washington first acquired a pair of *Shinisaurus* in 1993 and between 1996 and 2011, 12 litters were born. Our crocodile lizards are housed indoors in enclosures varying in size from 10 gallon tanks for individuals to fiberglass fish stock tanks (190 cm x 80 cm x 44 cm deep) for breeding pairs or groups of females. Non-breeding males are housed individually. The enclosures are partially filled with water and the lizards bask on branches and rocks. ZooMed® Reptisun 5.0 bulbs provide lighting and an incandescent flood



*Wild Shinisaurus at Beilou Crocodile Lizard breeding station, China. Photo by L. Uyeda.*



Outdoor pens at Beilou Crocodile Lizard breeding station in China. Photo by L Uyeda.



Wild Shinisaurus. Photo by Jin Li Wei.

lamp is used to create a 32°C basking spot. Photoperiod is modified throughout the year to reflect the natural light cycles in China. Ambient temperature ranges from 23°C in the winter to 30°C in the summer and water temperature is between 21°C and 24.5°C. Enclosures are cleaned every other day, and adults are fed a diet of primarily earthworms and newborn mice on alternate days. The lizards stop eating around October and though offered food throughout the winter, usually will not eat until February. In the wild, *Shinisaurus* breed in July/August and give birth

in April/May after 3-4 months of hibernation. At WPZ, these lizards breed in Feb/Mar and usually give birth in Oct/Nov. Litter size ranged from 1-9 for a mean litter size of 5.6. Young *Shinisaurus* accept a greater variety of food items (earthworms, crickets, and mealworms) and are reproductive as early as 13 months.

This singular and poorly-known lizard is not common in regional zoos, and the Association of Zoos and Aquariums maintains a managed program for the species.

Last year, fellow keeper Linda Uyeda and I presented data from our

zoo's long-term breeding program at an international symposium on the protection and breeding of *Shinisaurus* in Hezhou, China. This provided the opportunity to learn about conservation efforts in China and—the highlight of the trip—to see *Shinisaurus* habitat at the Daguishan Crocodile Lizard Nature Reserve and to see lizards at the Beilou Crocodile Lizard breeding station.

Huang, C.M., et al. 2008. Population and conservation strategies for the Chinese crocodile lizard (*Shinisaurus crocodilurus*) in China. *Animal Biodiversity and Conservation*: 64-66.

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

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

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 newsletters include pets, invasive species, and trade, but any lizard-related topic is welcome.

Submit your potential articles or any questions pertaining to contributing via email to [yearofthelizard@gmail.com](mailto:yearofthelizard@gmail.com). The newsletter will be bi-monthly, with the final issue coming out in November 2012.

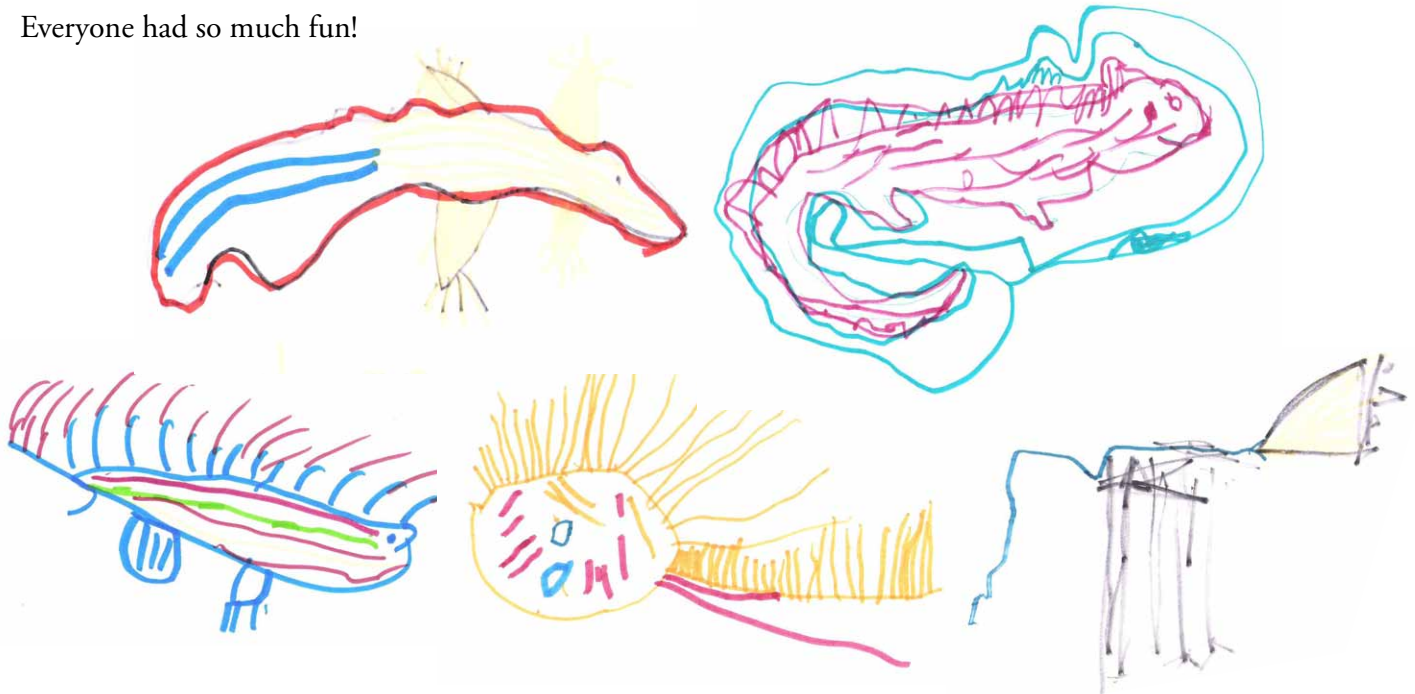
And think ahead for articles for 2013 Year of the Snake!

## Lizard Art at “Reptile Rally”

## Education Corner

Several graduate and undergraduate students from the Harmon Laboratory at the University of Idaho participated at an outreach event called “The Reptile Rally” at the Palouse Discovery Science Center, in Pullman WA this past April. We showcased a variety of live reptiles and had several different reptile-themed activities. At the art station, we discussed how this year is the Year of the Lizard and asked the kids to sketch their favorite lizard for one of our newsletters.

Everyone had so much fun!

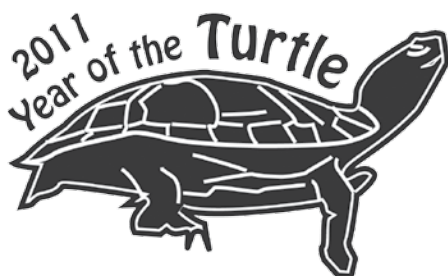


## 2013 Year of the Snake Logo Contest

In 2013, PARC will launch the Year of the Snake campaign to raise awareness about the conservation status of snakes and their conservation needs. We are now seeking submissions for the logo for the 2013 Year of the Snake campaign!

The logo selected will be high profile; being used in various places, including the State of the Snake document, newsletters, website, posters, and may be used on Year of the Snake merchandise.

**Logo Requirements:** we ask that submitted logos bear the text “2013 Year of the Snake” and that the text be legible when reduced to a 1” height. Also, the chosen logo will need to work equally in color as in black and white formats.



**Submission:** please send your proposed logos to [parcyearofthesnake@gmail.com](mailto:parcyearofthesnake@gmail.com) with the subject line “YOS LOGO”. Although we will eventually require a high resolution file of the winning logo, please send only lower resolution JPG, GIF, or TIF files for the initial submission.

**Deadline:** The deadline for logo submissions is October 1st, 2012. The winning logo will be announced mid-October. The winning logo designer will be featured in the 2013 State of the Snake document that will go out to all PARC members and on the PARC website.

We know there is a great deal of artistic talent within the PARC family and can't wait to see what you create!





# Lizards of the River Pò Region (North-east Italy)

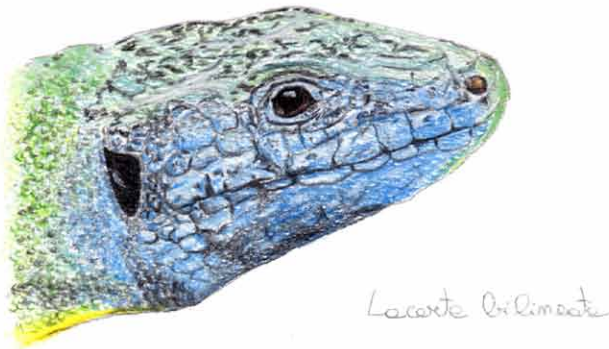
*Stephano Rambaldi, Master's Student, University of Bologna*

Since the beginning of natural sciences, art and drawings have had an important role in recording and showing observations made by scientists. Sometimes, only with the attention required to reproduce what you see, you can notice small and significant characteristics. So I decided, as a naturalist and student of biology, to couple my studies and research with artworks.

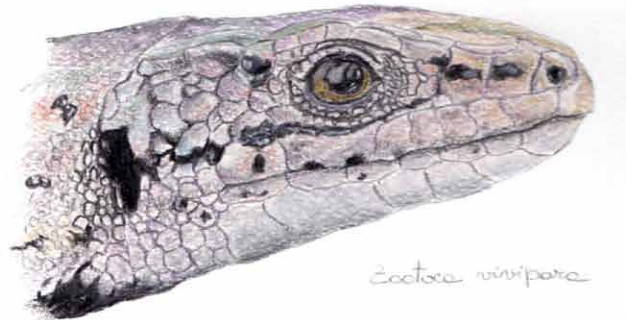
The poster shown here presents the four more widespread species of lizards in the North of Italy. *Lacerta bilineata* (top-left) is the biggest and most colorful of them. Reaching 40 cm in total length, males show a bright blue throat and between April and May fight among themselves for rights to mate. *Zootoca vivipara* (top-right) is well known as one of the few viviparous lizards. Females give birth to 3-12 live offspring that hatch from transparent eggs within female's body. *Podarcis muralis* and *P. sicula* (bottom left and right) are known as wall lizards because of their climbing abilities on vertical surfaces. They are very well adapted to an urbanized environment. That's why they are among the most prevalent lizards in both Italy and Europe.

The European region may not have the great diversity of herpetofauna that you can find in tropical areas of South America and Africa but, despite that, lizards like these four species show us the variety of shapes and colors we can find. Just maybe, close up drawings and pictures help us understand how beautiful these tiny animals are and the great importance they have for our ecosystem.

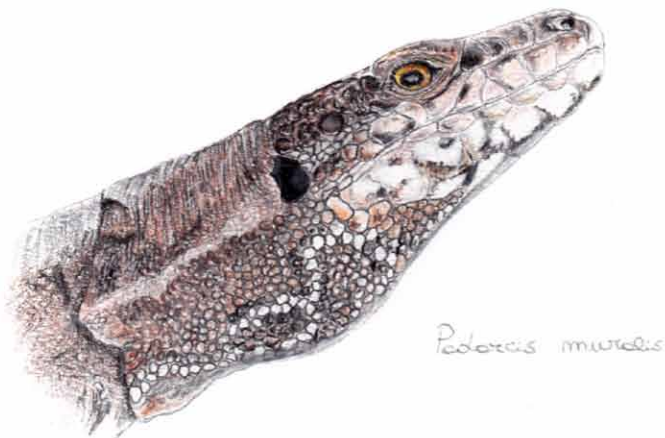
*Lacerta bilineata*



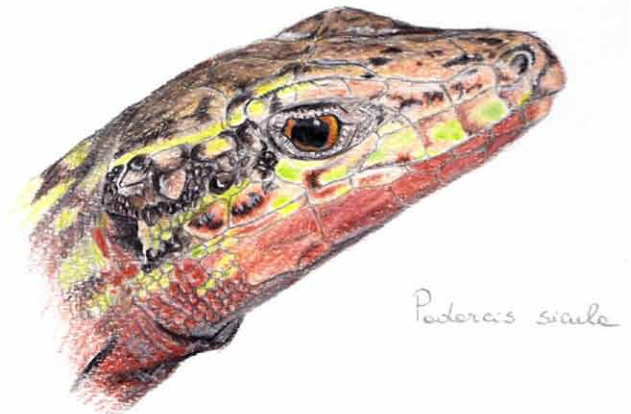
*Zootoca vivipara*



*Zootoca vivipara*



*Podarcis muralis*



*Podarcis sicula*

*Podarcis muralis*

*Podarcis sicula*

# WCH: As We Saw It *by Dede Olson*

## The New Normal: World Congress of Herpetology (WCH), Canada, 8-13 Aug. 2012



PARC (Partners in Amphibian and Reptile Conservation) shared a booth at WCH with the Society for Northwestern Vertebrate Biology (SNVB). Pictured, left to right, are Larry Jones, Dede Olson, and Hart Welsh.

“The New Normal” theme dominated presentations that I attended at the WCH. The New Normal is the concept that ecological systems have shifted due to a variety of disturbances, to the extent that they cannot return to pre-existing conditions. Practical conservation efforts need to focus on a new ecological ‘reset’ point rather than maintaining or restoring a system to purely historical natural conditions.

Relative to lizards, I heard talks within this New Normal framework on the effects of: 1) Climate Change, and altered thermal niches reducing activity times of lizards, with expected changes to their survival and reproduction, hence fitness and projected losses in years to come (Ray Huey, Univ. Washington, USA); 2) Habitat Fragmentation from increased wildfire frequency and intensity [tied to climate shifts] (Chris Dickman, Univ. Sydney, Australia), from invasive grasses changing what the ‘matrix’ habitat is relative to micro habitat structure or microclimate, and what predators and prey can exist in that new matrix (Lin Schwarzkopf, James Cook Univ., Australia), and human development resulting in habitat loss and reduced connectivity among sub-populations (Dan Leavitt, Univ. Texas, USA); 3) Trade, where overexploitation, disease transmission, and species introductions heighten the need for oversight and regulation (Christina Romagosa, Auburn Univ., Canada; Susan Jewel, US Fish and Wildlife Service, Washington, DC; Gad Perry, Texas Tech., USA); and 4) Invasive Species, where other taxa such as fire ants

are invading and native biota are changing, and in some cases, adapting (Tracy Langkilde, Penn. State University, USA), and some island scenarios where eradication of invasive species has been effective (David Towns, New Zealand Dept. Conservation). Because many of these threats have become so pervasive, we cannot simply return to a semblance of historic conditions. What is The New Normal? It will be context dependent, and hence a down-scaled “local” approach is imperative, with local priorities to maintain species or biodiversity as necessary ingredients for this new conservation recipe.

A factor that will have an effect on our ability to effectively address The New Normal was the theme of Laurie Vitt’s (Univ. Oklahoma, USA) plenary speech: we are losing expertise in natural history. At a time when an intimate understanding natural history and species ecology is imperative to understand how new natural system paradigms can be established, we are losing these specialists. Examples he gave included how today’s students and scientists spend so much time on electronic devices, in their labs, in their offices, teaching, etc., rather than out in the field observing animals and natural processes. With our information age and globalization, it can be a full-time job to keep up with new knowledge being created globally. We are learning a lot from each other, and less from our own experiences. Not only is the general populace getting disconnected from nature, but the experts are too. Some of the key insights upon which current ecological theory is based were generated from such expert witnesses entrenched at their long-term remote field-based study sites. Getting children out to natural areas is a world-wide effort, and perhaps that is needed for today’s up-and-coming researchers as well.



NW PARC dinner group at the WCH. Photo by Stephen Spear.

## State Wildlife Grants Helping Lizards *by Priya Nanjappa*

The State and Tribal Wildlife Grants (SWG) program, created by Congress in 2000, is administered by the US Fish and Wildlife Service (USFWS) and is an example of a federal-state partnership which helps state and territorial fish and wildlife agencies (States), along with their conservation partners, including contractors, universities, and NGOs, to work on lizard conservation efforts (among other “species of greatest conservation need” projects). In order to receive funding, each State was required to develop a State Wildlife Action Plan (SWAP). This is the only federal program with the explicit goal of preventing endangered species listings, via proactive conservation measures identified in SWAPs. The SWAPs are implemented using SWG funding, appropriated annually by Congress.

In recent years, SWG funding has been at risk for major reduction, or elimination, in Congress, given the federal deficit. Members of state and federal agencies and their partners continue to emphasize to Congress the value of this program to our rich fish and wildlife diversity and natural heritage. Lizards and other reptile and amphibian species are some of the major beneficiaries of this program over the last ten years due to the conservation efforts made possible from SWG funding.



*Texas is one of the only states where our conservation license plate features a lizard, and not just any lizard—the Texas Horned Lizard, our official state reptile! This plate is the best-selling of all of Texas Parks and Wildlife Department’s plates and has been the third best-selling plate in the state. All projects funded by this plate are used to implement the Texas Wildlife Action Plan, including projects that have addressed horned lizard genetic diversity and reintroduction.*

All federal funds spent under this program must be matched by non-federal dollars for all projects implemented. States have come up with ways to both promote conservation while raising non-federal funds to use as match, including conservation fundraiser events, state tax checkoff programs, or conservation license plate options, like the one in Texas that features a horned lizard! For more information about SWG or SWAP, and what you can do to help keep it going, visit [www.Teaming.com](http://www.Teaming.com).

### Where did the horny toad go?

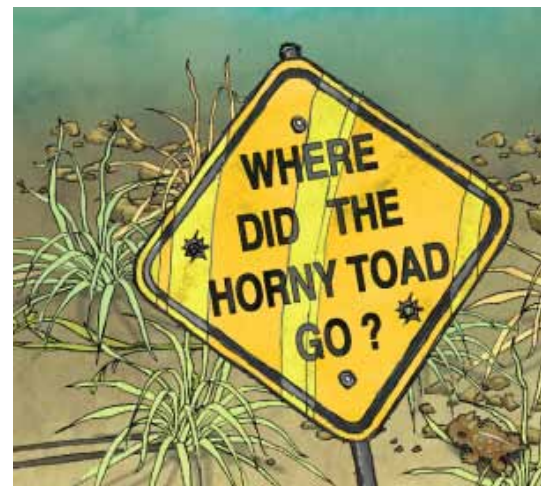
*By David Wojnowski*

Please join the Horned Lizard Conservation Society (HLCS) on October 13 for the outdoor premiere showing of the movie “Where Did the Horny Toad Go?” at the Corral Theatre located at the intersection of RM 3237 and Flite Acres Road in Wimberley, Texas. Visit the website at <http://corraltheatre.com> to see a map and get directions to the theatre. (The map is not to scale.)

An HLCS business meeting will begin at 5:30 pm prior to the movie with a fundraiser chili dinner starting at 6:30 pm. A guest speaker (TBD) is also planned at 7:30. The movie will start around 8:00 pm (or when it gets dark enough). We will adjourn at 9:30 pm. Admission will be \$5. All are welcome!

A fun-filled night under the stars and learning more about horned lizards.

For more information about the movie: <http://jarofgrasshoppers.com/category/horny-toad/>

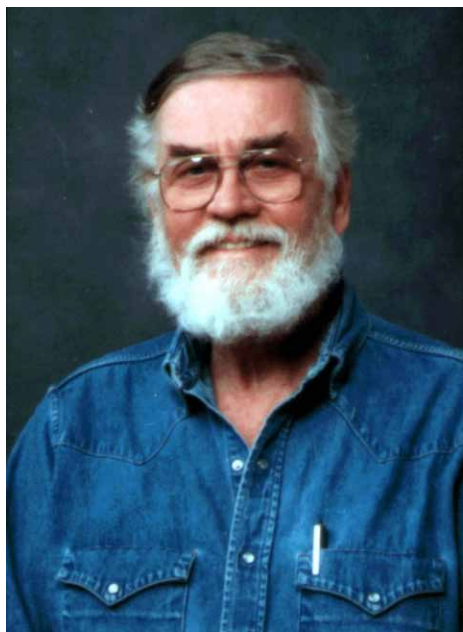


*Front cover of Where Did the Horny Toad Go? DVD. Film by Stephanie Leland.*

For more information about the Horned Lizard Conservation Society please visit: [www.hornedlizards.org](http://www.hornedlizards.org)

## An Interview with Dr. Eric R. Pianka

By Denim Jochimsen,  
University of Idaho



Dr. Eric R. Pianka is an Evolutionary Ecologist at the University of Texas at Austin, where he has been a professor since 1968. He is a renowned lizard expert and has spent his life studying their ecology and diversity. Dr. Pianka received his Ph.D. from the University of Washington and conducted fieldwork in desert habitats throughout the U.S. For his postdoctoral research, he spent several years exploring the diversity of lizard species that inhabit Australia and even identified several new species. Through his research, Dr. Pianka has offered a great deal of insight into the life history of these amazing animals – he has published hundreds of scientific papers and several books.

Dr. Pianka's lifetime of work has inspired me, both personally and professionally. I purchased and read his co-authored text *"Lizards: Windows to the Evolution of Diversity"* my very first year as a graduate student. The accounts and photos of the various species left me captivated.

I first met Dr. Pianka at a scientific meeting in 2004. He was selected as the "Distinguished Herpetologist" by the Herpetologist's League and was honored in a session where I learned all about his research. My second meeting was far more personal. He visited the University of Idaho to give a guest lecture and meet with all of the graduate students. I had the opportunity to take him out to one of our local field sites in search of reptiles, and to chat with him about science over breakfast. I was greatly appreciative of the time that he spent with me answering my questions, discussing research ideas, and chatting about lizard natural history. It was quite apparent to me that he cares a great deal about the survival of these fascinating reptiles and the natural world overall – things that are vastly important to me as well. Dr. Pianka has helped guide my dissertation research and shares my passion for fieldwork and science. It was therefore with great pleasure that I conducted the following interview with him. If you would like to learn more about Dr. Pianka's research and life, visit <http://uts.cc.utexas.edu/~varanus/>.



Pianka holds a *Varanus brevicauda*. Photo by Gisela Kaufman.

### 1. How did you become interested in lizards, and at what age?

I've told this story many times, for example in *"The Lizard Man Speaks"* and in our *"Lizards"* book, as follows:

"When I was about 6 years old in the mid-1940s, soon after the end of the Second World War, my parents drove our family east from our hometown, Yreka, near Oregon in far northern California, across the U.S. to visit our paternal grandparents, German immigrants who lived in Illinois. Somewhere along the way in the South, we stopped at a roadside park for a picnic lunch. There I saw my first lizard, a gorgeous, green, sleek, long-tailed arboreal creature (later I determined that this must have been an *Anolis carolinensis*) climbing around in some vines. We did our utmost to capture that lizard, but all we were able to get was its tail. I still remember standing there, looking up at the sassy lizard, holding its twitching tail, wishing intensely that it was the lizard instead. About a year later back in California, I caught my first garter snake, which I tried to keep as a "pet," however, it soon escaped (snakes aren't very good pets but they are escape artists!). In the third grade, I discovered that the classroom next door had a captive baby alligator. I was transfixed by that alligator and stood by its aquarium for hours on end reveling in its every move. As a little boy, I was destined to become a biologist, long before I had any inkling about what science was."

### 2. What is your current role in lizard research and conservation?

I just finished a piece for Amphibian and Reptile Conservation called

*\*The views and opinions of interviewees are not necessarily shared by all members of PARC or other Year of the Lizard Partners*

*“Can Humans Share Spaceship Earth?”* Presently, I am working hard to assemble my data into SQL (Structured Query Language) so that future generations will be able to use them (no one will ever be allowed to do what I did ever again).

*3. Do you have a favorite lizard or group of lizards? Why do you find them particularly interesting?*

Monitor lizards are among my favorites, probably because they are so attractive and intelligent. However, many other lizards are equally magnificent – consider *Moloch* (Thorny Devil) and chameleons, for example.

*4. Of all the places that you have visited in search of lizards, which is your favorite and why?*

That’s easy, my study site “Redsands” in the Great Victoria Desert of Western Australia because it supports a phenomenal diversity of 55+ species of lizards including six species of varanids (Monitor lizards).

*5. What do you believe is the biggest threat facing lizards in the 21st century?*

Anthropogenic habitat destruction and climate change, obviously.



*Lizard-cam on a monitor lizard. Photo by Gisela Kaufman.*

*6. What are some of the ways that the public can help with the conservation of lizards?*

All life on Earth requires space to live – other organisms have as much right to exist on this planet as people do. We need to embrace bioethics and we must learn to share this, our one and only spaceship. Earth was a pretty durable spaceship, but we have managed to trash its life support systems, the atmosphere, and the oceans. Humans have also destroyed vast areas of habitats and fragmented many others. We have modified the atmosphere and in doing so have increased the greenhouse effect, which has changed the climate to produce ever increasing maximum temperatures. Humans could have been almost god-like stewards of

spaceship Earth. We could have kept it habitable for many millennia to come, but look at the tragic mess we made instead. If only more people would live up to their full potential. All they would need to do is think, care, and try but most are content just to consume and exist irresponsibly. The disparity between what humans could have been and what we in fact are is a horrific tragedy.

*7. Which of the following is your favorite way to share the knowledge you have gleaned from your studies on lizards and why... teaching in a classroom? Public outreach events? Scientific meetings? Publishing scientific manuscripts? Writing books?*

I was very fortunate to have been videotaped for the PBS “*Lizard Kings*” episode. ([www.pbs.org/wgbh/nova/nature/lizard-kings.html](http://www.pbs.org/wgbh/nova/nature/lizard-kings.html)).

I enjoy teaching, writing and making up informative web pages, for example here are links to a few:



*Pianka with a Varanus gouldii. Photo by Gisela Kaufman.*

<http://www.zo.utexas.edu/courses/THOC/>  
<http://uts.cc.utexas.edu/~varanus/moloch.html>  
<http://uts.cc.utexas.edu/~varanus/Veremius.html>  
<http://www.zo.utexas.edu/courses/THOC/ID.html>  
<http://www.zo.utexas.edu/courses/THOC/Texas.html>  
<http://www.zo.utexas.edu/courses/THOC/AIBO.html>  
<http://www.zo.utexas.edu/courses/THOC/Convergence.html>

<http://www.zo.utexas.edu/courses/bio301/HumanInstincts.html>

<http://www.zo.utexas.edu/courses/THOC/SpaceshipEarth.html>

<http://www.zo.utexas.edu/courses/THOC/VanishingBook.html>

8. *Share a funny moment that occurred while conducting field research on lizards.*

Once, in Oz, as I was lizarding (my favorite activity), I was standing by a large dead bushy tree and suddenly felt overwhelmed to sneeze. When I did, an uncommon elusive big grey lizard was startled and jumped, giving away his presence (I would never have seen him otherwise as he was perfectly camouflaged).

## Announcing: 2013 Year of the Snake Photo Contest!

PARC is 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 (printable) calendar. Runner-up photos also will 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 PARC-related conservation, outreach, and educational efforts.

### Give us your best shot!

Photos will be judged on quality (resolution, lighting, composition) as well as the general appeal of the subject of the photo. The snake(s) should be the focus of submitted photos. Photos also should capture the coloration, markings, and overall “personality” of the snake(s). Multiple photos may be submitted.

Photos selected for a given month of the calendar will be selected by the 20th of the previous month (i.e., the winning photo for January will be selected on December 20th, and so on each month); however, photos will be accepted on a rolling basis and will be considered for future months. Winners will be notified of their photo’s selection via email and will be asked to provide a brief personal biography.

**NOTE:** By submitting an entry, the contestant grants PARC the right to publish and crop their photo(s) as necessary (see Terms of Use below). Appropriate acknowledgement to photographers will be given for photos when used in the Year-of-the-Snake calendar, newsletter, website, or other PARC-related venues.

### REQUIREMENTS:

**Resolution:** Photos should be at least 300 dpi in resolution (to be suitable for an 8” x 10” page) and in JPG or TIFF format.

**File name:** File names of submitted images should be titled using the photographer’s full name, species name



*Snakes are, too, beautiful! Redbelly Snake, Storeria occipitomaculata, by J.D. Willson.*

(scientific or common, if known), and image numbered consecutively (e.g. JaneSmithRoughGreenSnake01.jpg, JaneSmithRoughGreenSnake02.jpg; JaneSmithOpheodrys\_aestivus01.jpg).

**Conservation Message:** Please include a short caption related to the photo that highlights a conservation issue for the snake(s) or its/their habitat. If you are unsure as to the conservation status in your area seek local expertise and use the web. The caption should be a maximum of 50 words.

**To submit:** To submit photos for the contest, please send your photo(s) and supporting material (as described above) along with entry form information (below) to PARCphotocontest@gmail.com. With the subject line “photo contest”

More information and details on the Year of the Snake will soon be posted to <http://parcplace.org/news-events/2013-year-of-the-snake.html> – please bookmark this address and keep checking back!

**Additional questions:** Please email them to [PARCphotocontest@gmail.com](mailto:PARCphotocontest@gmail.com).

Thank you for your participation!

## Featured Lizard Families

Each issue of the Year of the Lizard News features an overview of two lizard families found in the United States (12 months, 12 families, depending on your taxonomic leanings), emphasizing those found in the U.S. and adjacent Mexico and Canada. This issue features two families of lizards referred to as geckos. I am frequently asked what the difference is between a gecko and a lizard... well, here you have it...geckos are just types of lizards. Geckos belong to seven families of lizards within the lizard infraorder Gekkota, the most primitive, yet often highly specialized, group of lizards. This is an extremely diverse

group of lizards having a variety of interesting characters, including (in most families) the presence of a voice (the word “gecko” comes from a Malay word that mimics the sound), vertical pupils, highly adapted autotomous tails, and toes that adhere to walls. Geckos are the largest group of lizards, with over 1,500 species described thus far (more being described all the time) and are found on most continents. Unfortunately, there are few species of these interesting animals present in the United States. We have two families: Gekkonidae and Eublepharidae.

*By Lawrence L. C. Jones (Larry the Lizard Guy)*

### Gekkonidae, Geckos

This is a large family of geckos, with about 1,200 species belonging to about 100 genera. They are usually small (including the diminutive dwarf geckos, such as *Sphaerodactylus ariasae*, the smallest lizard species in the world) to medium-sized critters. Well-known species include Leopard Geckos (*Eublepharis macularius*), a common pet species, and Day Geckos (the “Gecko” gecko, genus *Phelsuma*). Gekkonids are especially well-represented in the tropics and other arid regions.

There are only two native gekkonids in the United States, one in the extreme Southwest and one in the extreme Southeast. The western species is *Phyllodactylus nocticolus*, the Peninsular Leaf-toed Gecko. It is primarily a denizen of the Baja California Peninsula, ranging from the cape region northward to the vicinity of Palm Springs. There it primarily inhabits large granite boulders. By day it hides in cracks and crevices and by night it can be found on the surface, where it forages for invertebrates. These animals are adept at scurrying over rocky surfaces and can easily cling to the undersides of rocks. These lizards are extremely cryptic, having a pattern that matches the background. However, with careful observation, one can find them at night in suitable habitat, flattened against the surface of boulders. They can often be seen with two species of night lizards (Xantusiidae) with similar habits, *Xantusia henshawi* and *X. gracilis*. The habitat of *X. gracilis*—hence microsympatric *P. nocticolus*—is sandstone, within Anza-Borrego Desert State Park, San Diego County, California. These night lizards are also very cryptic, matching their backgrounds, and they occupy a niche similar to *P. nocticolus* in the deserts of the western Sonoran Desert (although *X. henshawi* is mostly associated with coastal chaparral). There are several



*Peninsular Leaf-toed Gecko (Phyllodactylus nocticolus), on sandstone at night, Anza-Borrego Desert State Park. Photo ©LLC Jones.*

other species of *Phyllodactylus* in Mexico, including Baja California, its adjacent islands, and the mainland. The taxonomic relationship of *P. nocticolus* and *P. xanti*, of the Baja California Cape region, has been in dispute since the species were described.

The other native species is the Florida Reef Gecko, *Sphaerodactylus notatus*. It is found in southeastern Florida and the Keys, as well as the Bahamas and Cuba. Members of this genus are generally referred to as dwarf geckos for a good reason. This species is a diminutive brown job, perhaps the smallest lizard in the U.S., less than three inches in length. It has dark stripes on the head, dark spots on the body, and two white “eye” spots in the dorsal shoulder area. It is cryptic, and only uncommonly seen as it scurries about the leaf litter during times of low ambient light (crepuscular to nocturnal). It shares its southeastern Florida habitat with a large number of non-native geckos, including two species of dwarf geckos.



An Annulated Gecko, *Gonatodes annularis*, a South American member of the Gekkonidae. Photo by Vincius Avelar São Pedro.

Non-native species are much more diverse and well-distributed in the United States. The champion lizard species for establishing itself outside its native homeland is the Mediterranean Gecko, *Hemidactylus turcicus*. It has become established in many countries in several continents and is continuing to spread throughout the warmer states of the US. Kraus (2012, In: Crother, committee chair, SSAR Herpetological Circular number 39) lists this species as being established in 22 states. This animal is very familiar to many of us because it is adapted to urban life, and is usually seen on the walls of dwellings at night, where it forages on moths and roaches. Because it occupies a niche held by no other native lizards, it is not considered invasive. Kraus (ibid.) lists 17 established, non-native species, belonging to 8 genera: *Gehyra* (1 species), *Gekko* (2 species), *Hemidactylus* (5 species), *Hemiphyllodactylus* (1 species), *Lepidodactylus* (1 species), *Phelsuma* (3 species), *Sphaerodactylus* (2 species), and *Tarentola* (2 species). As might be expected, these species are mostly established in Florida and Hawaii, since the highest diversity of geckos is in the tropics.

Gekkonids have been the focus of numerous interesting research topics. Many geckos, such as *H. turcicus*, are well known for their ability to hang onto smooth surfaces, such as walls and glass, without the use of liquid adhesives, surface tension, or suction. In a nutshell, they are able to adhere to smooth surfaces using highly modified toes and a phenomenon in physics known as van der Waals forces (the attractive force between the toes and the surface). The toes have thousands of exceedingly tiny hairs, known as “setae,” tipped with “spatula.” I didn’t do well in physics in college, so I won’t embarrass myself too much, but suffice to say, there are real-life applications that would be

useful if humans synthesize boots and gloves that mimic gecko feet—we could all walk like Spiderman!

While writing this article, I was at the World Congress in Herpetology meeting in British Columbia, Canada (hosting a PARC symposium on Conservation Success Stories). Here, in another symposium, was another focus of gecko research: tail autotomy (self-amputation) and regeneration. Leopard Geckos are often the species of choice for laboratory studies because of their availability in the pet trade, rapid tail regeneration, and gentle nature. It is rather fascinating how lizards can re-grow their skin, muscle, and nerves (including the spinal cord) so completely and so quickly. Many animals are known to have the ability to regenerate lost body parts, but lizards are terrestrial vertebrates, so probably the highest form of life to do so with an anatomically complex body part. The utility of understanding the mechanisms of regeneration is obvious to the medical profession (who sponsored the research and symposium). Just imagine having a thumb ripped off, then having it grow back!



*Gonatodes ocellatus*, the Eyespot Gecko, native to Trinidad and Tobago. Photo by John C. Murphy.

## Eublepharidae, Eyelidded Geckos

This family of geckos is rather different from others, partly because—as their common name implies—they have eyelids (as do most other non-gecko lizards). Also, the eublepharid geckos walk upright, unlike the gekkonids, which are generally splayed and have expanded toe pads to crawl on smooth, vertical surfaces. There are only about 26 species belonging to seven genera, distributed in North and Central America, Africa, and Asia (Bauer 2009, p. 298. In: Jones and Lovich, *Lizards of the American Southwest*). In the US, there are four species,





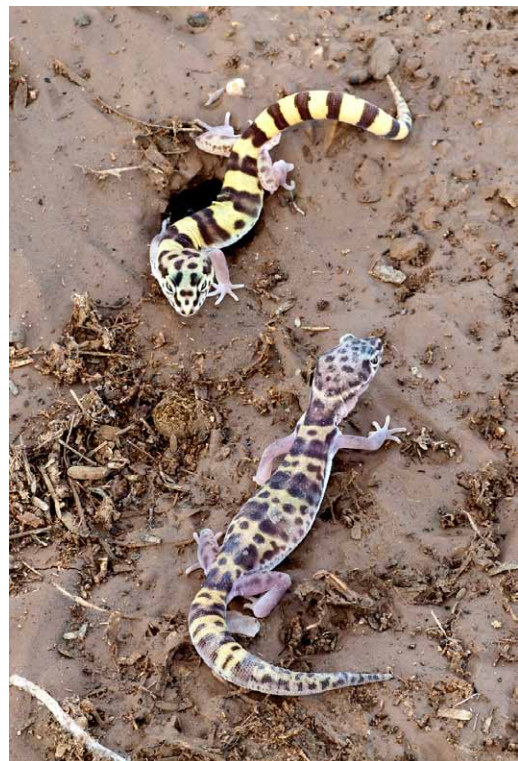
Juvenile Western Banded Gecko (*Coleonyx variegatus*), Tucson, Arizona. Juveniles of most *Coleonyx* are banded. Photo LLC Jones

all in the genus *Coleonyx* (banded geckos); all are strongly nocturnal, as evidenced by their large eyes with vertical pupils. They are delicate little lizards with thin skin and an easily autotomizing tail. Males possess cloacal spurs—small protrusions that can be seen on the enlarged tail base. Banded geckos are often familiar to people living in the deserts, as they can be seen crossing roads at night in most deserts of the American Southwest (all but the Great Basin Desert), although two of the species are decidedly rarely encountered. When not seen crossing roads, banded geckos are generally difficult to see because they are small and usually under cover objects. Banded geckos often look like scorpions as they cross desert roads at night. They are surprisingly fast, but if one catches the lizard, be aware that they readily lose their tail, invariably near the base. The two common banded geckos are often found during the daytime under cover objects (e.g., there are some coverboards near my home in Tucson, and there are regularly several Western Banded Geckos [*C. variegatus*] under them). When looking under cover objects, be aware that venomous animals may be present (my boards also provide cover for the extremely venomous and largely neurotoxic Mohave Rattlesnake [*Crotalus scutulatus*]); be sure to always replace cover objects back in the original position...or better yet, just look for banded geckos at night!

The two common banded geckos are the Texas Banded Gecko (*C. brevis*) and Western Banded Gecko. They are very similar, and both lack enlarged tubercles on the skin. The former is a denizen of the Chihuahuan Desert of New Mexico, Texas, and adjacent Mexico. Texas Banded Geckos start out life as boldly banded animals, while adults are typically spotted and banded. Only one subspecies is generally recognized (Crother 2012,

ibid.). Conversely, the Western Banded Gecko has been taxonomically challenged over the years, with several long-standing putative subspecies (with broad intergradation zones) generally recognized (four subspecies recognized in Crother 2012). The Western Banded Gecko is found in both the Mojave and Sonoran Deserts. They also inhabit non-desert areas of coastal California and Mexico, including coastal chaparral and subtropical thornscrub. The ill-defined subspecies are not well aligned with physiographic provinces, suggesting a more detailed analysis of variation is in order. As with *C. brevis*, this species also starts out strongly banded, then may become spotted or retain the banding as adults.

The two uncommon banded geckos are Switak's Banded Gecko (*C. switaki*) and Reticulate Banded Gecko (*C. reticulatus*). They differ from the common species by being larger animals and possessing tubercles on the skin—and their apparent rarity (which may just reflect their cryptic behavior). I distinctly remember when *C. switaki* was described in 1974 (Murphy, 1974. *Proc. Calif. Acad. Sci.* 40:80-92). I was attending California State University, Long Beach, and taking a herpetology class just after this. It was very exciting to have a new species from Baja California, at a time I was illustrating a dichotomous key to the herps of Baja. At the time, it was described as representing a new genus, *Anarbylus*, and was



Two adult Western Banded Geckos (*C. variegatus*), from under the same cover board, showing variation in pattern (banded and mostly spotted). Photo@LLC Jones.



The Texas Banded Gecko, *Coleonyx brevis*. Photo by Laurie J. Vitt.

still unknown from the United States. It was usually called the Barefoot Gecko. Over the years, more specimens were found, including the first in the US (Fritts et al., 1982. *J. Herpetol.* 16(1):39-52). At that time it was also suggested that *Anarbylus* did not warrant recognition, so was regarded as another species of *Coleonyx*. This little animal that evaded science for so long (in southern California, no less!) seemed to be a magical animal to find...which spawned another common name, the Magic Gecko. By whatever name, these animals are associated with boulders and rarely seem to venture out onto the surface. Most are seen crossing roads at the right time of year, but the far-more-abundant Western Banded Geckos make up the bulk of the nocturnal gecko action, even in prime "Magic" Gecko country. As an adult, Switak's Banded Gecko is a relatively large gecko (considerably larger than the Western Banded Gecko) having spots and/or bands. The tail (of unregenerated individuals) is often

strongly banded by black and white. The juveniles may be a stunning bright yellow with a strongly banded black and white tail. Males also become yellow during breeding season.

The other rare species is the Reticulate Banded Gecko, which is only known from the Big Bend area of Texas, and from widely scattered localities in Mexico (states of Durango and Coahuila). It is likely that more intensive sampling will reveal additional localities in Mexico, but like the "Magic" Gecko, this animal rarely reveals its presence. There have been many attempts to find additional populations in Mexico but thus far to no avail. This species is also larger than its congener, *C. brevis*, and has tubercles on the skin, as does *C. switaki*. Also like that species, *C. reticulatus* is found in the vicinity of large boulders and cliffs and rarely seen as it ventures out from its significant hidey-holes. Most specimens are seen on the roadway at night (strongly outnumbered by *C. brevis*) during rainy nights during the monsoon. If on boulders, they are extremely difficult to see, because they match the background (similar to the boulder-inhabiting gekkonids and xantusiids mentioned above). Reticulate Banded Geckos are typically banded as juveniles, but become banded and spotted, completely spotted, or even reticulated as adults.

NOTE TO READER: in *Lizards of the American Southwest* (Jones and Lovich 2009), we do not even have a photograph of a juvenile, so if you know of any good photos of said critter, please alert me and we may include it in a future revision! As I recall, it is possible to look for this animal and photograph them in situ, if you have a permit from Texas...but it is always best to check the regulations beforehand.

### 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 [yearofthelizard@gmail.com](mailto:yearofthelizard@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 Citizen Science Projects

A compilation of lizard 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 [yearofthelizard@gmail.com](mailto:yearofthelizard@gmail.com).

facebook

Follow all of the Year of the Lizard news and happenings on Facebook (<http://www.facebook.com/yearofthelizard2012>) and Twitter (<http://twitter.com/YearOfTheLizard>).



## Ask the Experts

I work in a park with a large lizard population. I want to do an educational program on them, and would like to catch them during the program to show to my participants. But they are so quick! We have mostly skinks and fence lizards. Do you have any tips for catching lizards?

*Daniel Wheeler, Environmental Educator  
Lake Crabtree County Park*

First, I applaud you for wanting to do an environmental education program involving lizards (and any other non-charismatic, non-megafauna). People like you really help to spread the word about the importance of all species in our natural world! I lead public lizard walks in Arizona, which admittedly is a little different than North Carolina, but I will offer some input. There are two basic approaches to lizard surveys: those that are “hands-off” and those that offer “hands on” experiences. I gravitate to the former, especially when dealing with kids. My lizard walks involve teaching kids the value of letting wild animals stay wild, and observing them in nature through close-focus binoculars (which also focus far away). Also, we thought it is best not to teach young people how to catch lizards (which involves “noosing”) because they may want to take that knowledge home and noose lizards in their yards only to have them expire in captivity, or worse, release them into areas where they do not belong. However, I acknowledge the value of hands-on experience and the excitement that kids get when touching a live animal. So, I often bring some gentle lizards for kids to touch and hold (and have them use antiseptic gel), then leave lizards out in the natural world. At one of my lizard walk venues, they like to have me catch lizards for the public, so I use a lizard



*A Dunes Sagebrush Lizard captured by noosing. Photo by Jamie Hall.*

noose (see [www.tucsonreptileshow.com/Lizard%20catching,%20A%20New%20Olimpic%20Sport%20pdf.pdf](http://www.tucsonreptileshow.com/Lizard%20catching,%20A%20New%20Olimpic%20Sport%20pdf.pdf)). This would work well for fence lizards, but skinks have smooth scales and not much of a neck, so are not so easily noosed. Some species are cryptic, rarely venturing to the surface. You might consider using coverboards in your program. Basically, these are large plywood boards (the larger the board, the more likely something will be under it, but there are obvious constraints) that you lay down in good habitat (they become more functional with time), and skinks may use them for cover. When you do the program, have a look under the boards, as you may find interesting lizards, snakes, and invertebrates--but be careful because of venomous snakes and fire ants. I would recommend you use a snake hook to lift (and carefully replace) the boards. They may be a bit of an eyesore, so if you can have them basically out of sight, that always seems good. Be sure to check with state, federal, and local regulations about handling amphibians and reptiles. Quite often there are permits needed (e.g., hunting or scientific collecting permit; special use permit) and local land management requirements (restricted access, habitat disturbance regulations) to handle reptiles. Here are two links summarizing state regulations (<http://jjcdev.com/~fishwild/?section=parc>

or [www.fishwildlife.org/index.php?section=comlist-3](http://www.fishwildlife.org/index.php?section=comlist-3)), but always check out all



*Juvenile Five-lined Skink (Plestiodon fasciatus). Photo by Laurie J. Vitt.*

### Have a Question? Ask the Experts!

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



regulations in detail before catching lizards. Also, I would generally discourage people from collecting and keeping wild-caught native lizards, as they generally expire in captivity anyway.

*Larry Jones*

*co-editor, Lizards of the American Southwest, Tucson, Arizona*

*Eastern Fence Lizard, Sceloporus undulatus. Runner-up for the April Photo Contest Calendar, photo by James Brantley.*

*Daniel responded:* Lake Crabtree Park is equipped with coverboards, snake hooks, and collecting permits, and the staff are quite familiar with the delicate nature of lizards and how irresponsible it is to relocate wildlife. Thanks for the valuable information.

## Lizards in the News

Mother Nature appears to have created a replica of comic book superhero Spider-Man. The Mwanza Flat Headed Agama lizard has distinctive red and blue markings that make it a dead ringer for the web-slinging superhero. Read more at: [www.thesun.co.uk/sol/homepage/features/4406183/Lizard-is-the-spitting-image-of-Spider-Man.html#ixzz24fjz2aAK](http://www.thesun.co.uk/sol/homepage/features/4406183/Lizard-is-the-spitting-image-of-Spider-Man.html#ixzz24fjz2aAK)

Youths poach monitor lizards around Manamai, India. Find out more from: [www.thehindu.com/news/states/tamil-nadu/article3758689.ece](http://www.thehindu.com/news/states/tamil-nadu/article3758689.ece)

The largest ever petition filed focusing only on amphibians and reptiles asks the U.S. Fish and Wildlife Service to protect six turtles, seven snakes, two toads, four frogs, 10 lizards and 24 salamanders under the Act. See the press release at: [www.biologicaldiversity.org/news/press\\_releases/2012/amphibians-and-reptiles-07-11-2012.html](http://www.biologicaldiversity.org/news/press_releases/2012/amphibians-and-reptiles-07-11-2012.html)

And the formal petition at: [www.biologicaldiversity.org/campaigns/amphibian\\_conservation/pdfs/Mega\\_herp\\_petition\\_7-9-2012.pdf](http://www.biologicaldiversity.org/campaigns/amphibian_conservation/pdfs/Mega_herp_petition_7-9-2012.pdf)

Dr. Nate Dappen, an evolutionary biologist from the University of Miami, has spent the past three summers on Ibiza and Formentera studying the beautiful endemic Ibiza Wall Lizard (*Podarcis pityusensis*). Read the article and watch video at: <http://newswatch.nationalgeographic.com/2012/07/06/the-symbol-photographing-the-ibiza-wall-lizard/>

Ecstatic, surprised, and thoroughly relieved. Those were the reactions of several West Texas leaders who heard on Wednesday they'd won a long battle against a proposal

to list the Dunes Sagebrush Lizard as an endangered species. Find out more from: [www.mywesttexas.com/top\\_stories/article\\_bb6870fe-b5ba-11e1-a268-0019bb2963f4.html](http://www.mywesttexas.com/top_stories/article_bb6870fe-b5ba-11e1-a268-0019bb2963f4.html)

Two large lizards have been discovered dumped by the Leicester roadside by a father out walking with his children. Read the story at: [www.thisisleicestershire.co.uk/large-lizards-dumped-roadside/story-16686994-detail/story.html](http://www.thisisleicestershire.co.uk/large-lizards-dumped-roadside/story-16686994-detail/story.html)



*Yuman Fringe-toed Lizard, Uma rufopunctata, one of 10 lizards proposed for protection. Photo © LLC Jones.*

A rare lizard that calls the Yuma, AZ area home has been proposed for protection under the Endangered Species Act. See the article at: [www.yumasun.com/articles/species-80338-endangered-lizard.html#ixzz24ftx7Boz](http://www.yumasun.com/articles/species-80338-endangered-lizard.html#ixzz24ftx7Boz)

Did Komododragonsevolve to eat pygmyelephants? Find the answer at: [www.wired.com/wiredscience/2012/08/of-dragon-diets-and-diminutive-elephants/](http://www.wired.com/wiredscience/2012/08/of-dragon-diets-and-diminutive-elephants/)

## Upcoming Meetings & Events

**Next Generation Data Management in Movement Ecology** - Summer School, September 3-7, Leibniz-Institute for Zoo and Wildlife Research (IZW), Berlin, Germany

**Midwest PARC Annual Meeting**, September 7-9, Camp Frontier, Pioneer, OH

**Sabino Canyon Lizard Walk**, September 8, 8:00 am, Sabino Canyon Recreation Area, Tucson, AZ

**Modeling Patterns and Dynamics of Species Occurrence Workshop**, September 17-21, Montana Fish, Wildlife, and Parks, Bozeman, Montana

**Alabama Chapter of Partners in Amphibian and Reptile Conservation (ALAPARC) 4th Annual Meeting**, September 28-30, Dauphin Island Sea Lab, Dauphin Island, AL

**Modeling Patterns and Dynamics of Species Occurrence Workshop**, October 9-13, Swiss Ornithological Institute, Sempach, Switzerland

**Where did the horny toads go?** Horned Lizard Conservation Society meeting and movie screening, October 13, Wimberley, TX, see article on p. x for details.

**Southwest Partners in Amphibian and Reptile Conservation (SWPARC) Annual Meeting**, October 24-27, Las Vegas, NV

**Sabino Canyon Lizard Walk**, October 13, 8:00 am, Sabino Canyon Recreation Area, Tucson, AZ



## Get your Year of the Lizard 2012 Gear!

Simply go online to the PARCStore (<http://www.cafepress.com/parcstore>).

Stay tuned and check out the website periodically...more PARC and Year of the Lizard products will be showing up. Proceeds from sales go to the Amphibian and Reptile Conservancy, a not-for-profit organization that helps support PARC activities, such as public education, publications, and research.

