

## NEWSBRIEFS

**Snake-spotting May Have Helped Humans Evolve**

Snakes may make people jump for a good reason — human close-up vision may have evolved specifically to spot these reptiles. Humans, monkeys, and other primates have good color vision, large brains, and use their vision to guide reaching and grasping. Although some scientists believe these characteristics evolved together as early primates used their hands and eyes to pick fruit and other foods, Lynne Isbell, a professor of anthropology at the University of California–Davis, believes they may have evolved to help primates evade snakes.

“A snake is the only predator you really need to see close up. If it’s a long way away it’s not dangerous,” said Isbell, who has published her theory in the *Journal of Human Evolution*. Neurological studies show that the structure of the brain’s visual system seems to be well connected to brain structures involved in vigilance, fear, and learning, she said.

Mammals evolved about 100 million years ago and fossils of snakes with mouths big enough to eat those mammals appeared at about the same time, she pointed out. Other predators, such as big cats, hawks, and eagles, evolved later. Venomous snakes evolved about 60 million years ago, which forced primates to

get even better at detecting them. “There’s an evolutionary arms race between the predators and prey. Primates get better at spotting and avoiding snakes, so the snakes get better at concealment, or more venomous, and the primates respond,” Isbell said. No dangerously venomous snakes occur on Madagascar, and lemurs, which only live on that large island and which have poor eyesight, have not evolved much in other ways in the past 60 million years, either, Isbell added.

*Reuters News Online*  
20 July 2006  
Washington, D.C.

**State Wildlife Agent Targets Black Market for Turtles on Internet**

Box turtles are known for their lethargic pace and tough shells. But lately the Alabama-native reptiles are becoming a fast-moving commodity on an illegal black market. Experts say the animals are going to need more than shells to protect themselves from unlawful turtle-catchers. Lt. Michael Bloxom is an Alabama Wildlife and Freshwater Fisheries Division officer who is designated to help them. He spends part of every workday looking for turtles, deer, snakes, and

other Alabama animals for sale on the Internet. Recently, his efforts paid off, leading to the arrest of two couples in Wedowee.

According to Randolph County Assistant District Attorney Amy Newsome, Porsha and Wayne Price and Daniel and Rebecca Smith of Wedowee were arrested and convicted of possessing protected animals for sale earlier in July. Police say the four had been selling endangered Eastern Box Turtles (*Terrapene carolina carolina*) online and mailing them to buyers around the country and possibly abroad. The two couples had no connection to each other that police can find and claimed they did not know selling the turtles is illegal. All four spent a short time in jail before being released to 24 months of probation, paying \$100 fines, and forfeiting money they earned in the sales.

The two Wedowee couples are not the only people involved in the illegal capture and sale of turtles in Alabama. Bloxom said Eastern Box Turtles mostly are being sold as pets at flea markets or shipped to “turtle farms” in Louisiana and Arkansas. Farmers who want to breed the reptiles pick up other turtles. Some farmers breed turtles to sell the eggs or hatchlings as pets, Bloxom said. Others breed the turtles for food.<sup>1</sup> In Louisiana and parts of Asia, Bloxom said, farmers inject the turtles with hormones and slaughter them like chickens every year. Turtles are a traditional source of meat in Cajun cuisine. “Within a year they’ve got an eating-sized turtle,” Bloxom said.

For the farmers, capturing turtles in the wild makes economic sense. “When you want to start a turtle farm, where do you start?” Bloxom asked. “You can get these little hatchlings and wait five or 10 years for them to mature or go into the wild and catch some breeding-sized turtles.”

But turtle catching can create a strain on the environment, especially



ROBERT POWELL

The evolution of snakes with mouths big enough to eat mammals may have forced primates to develop close-up vision to detect them.

<sup>1</sup> Editor’s note: Box Turtles (genus *Terrapene*) frequently consume poisonous fungi and may retain toxins that could be passed to anyone eating the meat.



SUZANNE L. COLLINS, GWAP

Populations of Eastern Box Turtles (*Terrapene carolina carolina*) in Alabama have been declining due to illegal collection for sale at flea markets or to turtle farms in Louisiana and Arkansas.

when the turtles are endangered like the box turtles, which have been on the federal endangered species list since 1973. Bloxom said that in the late 1990s, the number of turtles in Weiss Lake declined dramatically because of turtle-catchers. Turtle populations haven't recovered, Bloxom said.

State lawmakers set a catch limit of 10 turtles per day after seeing the declining numbers in Weiss Lake. Turtles can provide an important part of the ecosystems where they live, eating insects and decaying organic material, said Kevin Jenne, a biologist at the Anniston Museum of Natural History. "They're another link in the food chain," he said. "If you get rid of them, there may be too many worms here or too many bugs there."

Said Bloxom: "Just think if everyone thought 'Hey I can get on the computer and make a hundred bucks a turtle.' There wouldn't be any turtles left." Jenne said the reptile trade took off in the 1990s and has not slowed since.

Snakes and lizards have been imported into the U.S. from all over the world, leaving other areas with greatly reduced numbers of indigenous animals. "If something becomes a fad, some local will say 'Hey I can make some money off of this' and go catch and sell native animals," Jenne said. Turtle catchers typically bait partially submerged boxes or small, round fishing nets with dead fish and collect the turtles. Once the turtles are caught, they usually are placed in burlap sacks with 30 or 40 other turtles

and put on trucks to be hauled as far away as Arkansas. "When you get them in there in June or July, it becomes like an oven in there for them," Bloxom said.

Box turtles first were placed on the federal list of endangered species in 1973 because the numbers of young turtles being found was lower than expected. Since turtles often live much longer than humans, the plentiful numbers of adults still may be seen in 20 years. But when that generation dies out, biologists like Jenne fear the younger turtles may not be able to replace them.

All turtles have a "4-inch rule," Jenne said. Turtles whose shells are less than 4 inches around cannot be bought or sold. This is to protect turtles that have not reached sexual maturity, Jenne added.

Bloxom said box turtles are not the first species in Alabama that the demands of the retail market have threatened. In the 1990s, freshwater mussels, which can be used for the production of cultured pearls, and paddlefish, sought for their caviar, were in such high demand that laws were passed to keep the species from being wiped out. Recently, Bloxom and his agents have learned of truckloads of bullfrogs and crawfish being shipped out of the state. "That's not illegal, but it's our job to find out if that is going to cause a problem," he said.

Even deer have become a popular export for some traffickers. People in neighboring states will pay good money for live deer to stock their hunting

reserves, Bloxom said. "We may be worrying about turtles today and deer tomorrow," he said.

Andy Johns  
*The Anniston Star*  
 (<http://www.annistonstar.com/>)  
 2 August 2006

### First Successful Breeding of Released Blue Iguanas in the Salina Reserve, Grand Cayman

In December 2004, thirty-two Grand Cayman Blue Iguanas (*Cyclura lewisi*) were released into the National Trust Salina Reserve, inland from the Queen's Highway. The iguanas had been reared in captivity to two years old.

A year later, an additional 73 two-year-olds were released in the same areas of the Salina Reserve. In the summers of 2005 and 2006, these released iguanas were monitored by teams of local and international volunteers, and this year, three females from the 2004 release were seen digging nests to lay their eggs.

On 8 September, one of those nest sites had developed a hole, indicating that the eggs inside may have hatched, and the hatchlings dug to the surface. The nest has now been carefully excavated, and three perfect, hatched eggshells were recovered from the nest chamber a foot underground. The hatchlings have probably dispersed in search of safe retreats, and have not yet been sighted.



FRED BURTON

Blue Iguanas (*Cyclura lewisi*) bred successfully for the first time in the Salina Reserve since the Blue Iguana Recovery Program began restoring the population.

This landmark event is the first time successful reproduction of Blue Iguanas in the Salina Reserve has been seen, since the Blue Iguana Recovery Program began restoring a population there. The other two nests, which were laid later in the summer, are still being monitored.

### Butler's Garter Snake and Endangered Species Acts

#### Threatened by Wisconsin Legislature

The Wisconsin Legislature, usually known for protecting the state's natural resources, has recently taken significant action in regards to the Butler's Garter Snake (*Thamnophis butleri*). In Wisconsin, this species is listed as "Threatened," and is protected against take in areas where it is found. Its very small range in the state exists primarily in the rapidly developing greater Milwaukee area. The majority of existing habitat for the Butler's Garter Snake is on private land. Efforts to protect and preserve the snake on these lands has resulted in a growing conflict with regional developers, supported strategically and politically by the Milwaukee Builder's Association and to a lesser degree by the real estate industry. Two major efforts have been made to delist the snake, the second of which is pending. Wisconsin's legislative Joint Committee for the Review of Administrative Rules (JCRAR) voted to delist the snake as of 1 October 2006 if the Department of Natural Resources (DNR) does not take significant steps to reduce the impact of protection on the development community. In their decision, the committee put forth no scientific evidence that the Butler's Garter Snake should have its Threatened status removed. Furthermore, the steps they required of the DNR were unreasonable and cannot be met in the time allotted.



GARY CASPER

A committee of the Wisconsin legislature has voted to delist Butler's Garter Snake (*Thamnophis butleri*), currently listed as threatened in the state.



Some of the participants at the Horned Lizard Working group meeting at the Windmill Ranch in Texas. Representatives of universities (Texas Tech University, University of Texas), the military (Texas Army National Guard, Moody Air Force Base in Oklahoma), the state (Texas Parks and Wildlife), and a zoo (Fort Worth Zoo) are shown, demonstrating the diversity of groups interested in the conservation of Texas Horned Lizards (*Phrynosoma cornutum*).

If the delisting takes effect, it will be the first time in the nation's history that a listed species has been delisted for economic reasons and without sound scientific data driving the decision. Such an action would set a dangerous precedent for species protected under both state and federal Endangered Species Acts.

#### Horned Lizard Working Group

The Horned Lizard Working Group met 15–17 September 2006, at the Windmill Ranch, west of Snyder, Texas. The working group was formed in 2005 to bring together regional biologists and land managers and to discuss research priorities for the conservation of Texas Horned Lizards (THL: *Phrynosoma cornutum*). This year's program expanded to include Flat-tailed Horned Lizards (FTHL: *P. mcallii*). We hope to see further expansion in the future.

Eleven speakers from Texas, Oklahoma, Colorado, and Arizona presented recent and ongoing research related to Horned Lizards (*Phrynosoma*). Topics included life history, seasonal and daily activity patterns in wild and urban populations of THL, effects of burning

and grazing management regimes on THL, citizen monitoring program for THL, and captive care and husbandry of THL at the Ft. Worth Zoo, conservation genetics of the FTHL, GIS model of niche evolution in Horned Lizards, and management of Red Harvester Ants (*Pogonomyrmex barbatus*). A round-table discussion of the importance, necessity, and difficulties of reintroducing THL to parts of its former range completed the primary activities of the meeting. Abstracts for the 2006 meeting can be read online at the HLCS Webpage: [www.hornedlizards.org](http://www.hornedlizards.org).

Attendees noted that service and support by the staff of the Windmill Ranch was impeccable. Next year's meeting was discussed with board members of the Horned Lizard Conservation Society to coincide with a larger national meeting in Fort Worth, Texas, in mid to late summer. Next year's meeting will strive to include research efforts on additional species of *Phrynosoma* and management and conservation issues related to these lizards. The HLCS also intends to provide small research grants for the 2007 field season, and an announcement should appear on the Society's web site in the near future.

### Conserving One of the Rarest Reptiles in North America: The Louisiana Pine Snake

The Southeast and Southwest Regions of the U.S. Fish and Wildlife Service are collaborating with several partners to conserve the Louisiana Pine Snake (*Pituophis ruthveni*), which inhabits longleaf fire forests in Louisiana and Texas. The species produces the largest egg (7.5–12.5 cm) and hatchling (46–56 cm) of any North American colubrid snake. A 2004 Candidate Conservation Agreement provides a framework that is being used to develop a comprehensive cooperative plan for recovery, so that the species may not need to be listed. Specific goals, strategies, and success metrics will be established for each conservation category, which includes: (1) ecosystem conservation; (2) habitat management; (3) monitoring and trapping; (4) captive-breeding; (5) research; (6) outreach and education, and (7) integration of public and private-land conservation efforts. Based on the foundation established by the Agreement, the 2006 Annual Louisiana Pine Snake meeting in early August fostered growing interagency and private-land owner cooperation. It provided an active forum that stimulated lively debate and discussion. The meeting was hosted by the U.S. Forest Service in Nacogdoches, Texas with strong support from Arlington, Texas and Lafayette, Louisiana field offices. Participants

included state wildlife agencies in Louisiana and Texas, the National Forest of Louisiana and Texas, the U.S. Forest Service Southern Research Station, the Department of Defense at Fort Polk, Louisiana, the Natural Resource Conservation Service, The Nature Conservancy, the Texas Department of Transportation, Stephen F. Austin University, Texas A&M University, the Ellen Trout Zoo of Lufkin, Texas, and private landowners that included Temple-Inland, International Paper, and TimberStar. Video footage taken at the meeting of this multi-partner, two-state CCA will be one of three agreements featured in a video on candidate conservation agreements that is in production by the U.S. Fish and Wildlife Service's National Conservation Training Center in Shepherdstown, West Virginia.

### Bolson Tortoise Returns to Its Historic Range

The endangered "Tortuga Grande," as its known in the southern Mexican states of Chihuahua, Coahuila, and Durango, last week returned to its historical northern range on the Armendaris Ranch in eastern Sierra County. "You have been invited to celebrate the return of the Bolson Turtle (*Gopherus flavomarginatus*) to its native Chihuahuan grassland; this is its habitat," Ladder Ranch manager Steve Dobrott told a couple



The Bolson Tortoise (*Gopherus flavomarginatus*) has returned to its native Chihuahuan Desert grassland habitat in New Mexico.

dozen visitors who gathered at the Armendaris on 15 September to witness the reintroduction.

The Ladder Ranch in western Sierra County was originally identified as the reintroduction site, but the Armendaris more closely resembles the turtle's natural habitat. Both ranches are owned by media tycoon and conservationist Ted Turner. The Turner Endangered Species Fund is spearheading the reintroduction, as it has for many an endangered species, including most recently the Aplomado Falcon (*Falco femoralis*) last month at the Armendaris.

Myles Traphagen, biologist for the Turner Endangered Species Fund, said the Bolson Turtle enjoys the highest designation of endangered species internationally, but it has been a challenge keeping the species viable. For one, the scientific community didn't identify the species until 1958, when a group of biologists from the University of Illinois were visiting Mexico on an unrelated project and encountered some locals who were using the turtle's shell, or carapace, as a chicken feeder. Asked about the shell, the villagers said it came from "la tortuga grande."

According to scientific documentation provided by Traphagen, the Bolson Tortoise is the largest terrestrial turtle in North America. It is capable of obtaining carapace lengths between 14 and 16 inches, with undocumented reports of them reaching 39 inches in length and weighing 77 to 100 pounds.

Several factors contributed to the species' decline. High on the list is their status as a food source. "It's a big, slow-moving piece of meat," Traphagen noted, adding climate change and urbanization also are responsible for their declining numbers. The species also has a low suc-



Louisiana Pine Snakes (*Pituophis ruthveni*) inhabit longleaf fire forests in Louisiana and Texas. A 2004 Candidate Conservation Agreement provides a framework that is being used to develop a comprehensive cooperative plan for recovery, so that the species may not need to be listed.

cess rate when it comes to reproduction. Although a female tortoise is capable of laying about 10 eggs per year, the young are susceptible to a long list of predators, including rats, ravens, and snakes. On the plus side, turtles can live up to 100 years and can survive for up to a year without water.

An initial population of seven tortoises will inhabit the eight-acre pens, which are enclosed by a knee-high fence. Each pen contains 14 burrows that were constructed by cutting 18-inch plastic sewer pipes in half, digging a trench and building a Quonset-hut-style enclosure angled into the ground.

While the turtles are being reintroduced on the Armendaris, a hatchery will be built on the Ladder, according to Traphagen. "This is a pretty historic event," Armendaris Ranch manager Tom Waddell noted at the outset of the release. While biologists are certain that the Bolson Tortoise's historical range extended all the way to the northern edge of the Chihuahuan Desert, no traces of the species have been uncovered at the Armendaris. "I like to think they lived here at one time, but were buried by the sands of time and the ever-blowing winds of the Jornada (del Muerto)."

Tony A. Archuleta

HERALD Reporter

TorC Times, Truth or Consequences,  
New Mexico

### Rare Finds: Expedition Uncovers Caribbean Plants

A team of scientists from Fairchild Tropical Botanic Garden embarked on an expedition to Jamaica's rugged Cockpit Country to find some of the Caribbean's rarest plants, some of which have not been seen for 100 years. In three weeks of searching, the team rediscovered eight plants, found two species new to science, and began cataloging the rich biodiversity of the Caribbean island, home to plants not seen anywhere else in the world. The remote area, with bowl-shaped valleys surrounded by deceptively benign-looking hills, aside from its concentration of plant diversity, is the source of 40 percent of the water in Jamaica. Its tapestry of plants includes more than 1,000 species within 500 square miles. The entire Florida Peninsula — at

66,000 square miles — holds only about 4,000.

Among the targets of the six Fairchild biologists and horticulturists: the eight-foot *Euphorbia alata*, a poinsettia relative that hasn't been viewed since 1906. Rugged conditions have protected these hills, creating a refuge for ferns, *Lypanthes* orchids, birds, the endangered Jamaican Boa, Black-billed Parrots, and a swallowtail butterfly with wings up to eight inches across. Relatively isolated and without roads, the area nevertheless is coming under pressure as tons of sapling trees are cut every year for growing yams, weeds follow people who are pushing in from the edges, and aluminum companies prospect for bauxite mines.

One of the team's resources was botanist George Proctor, who has lived in Jamaica since 1949 and is the resident expert on the island's plants. Proctor, 86 and still working, surveyed the region 30 to 40 years ago. He accompanied the team for a few days and has a contract with Fairchild to write a checklist of the plants of the Cockpit Country. Although unable to climb with the team, Proctor was able to tell the scientists exactly where to look.

Fairchild is working with Florida International University, the University of Puerto Rico, the Smithsonian Institution, and the U.S. Department of Agriculture to catalog the Caribbean's plant diversity. Through their research, Fairchild scientists tallied 169 endemics in this biodiversity hot spot; Cockpit Country claims 64 of these. Information collected on this expedition will assist Jamaican environmental and forestry agencies with planning environmental protection policies.

Georgia Tasker

gtasker@miamiherald.com

18 October 2006

### Farmers Lobby FDA for Overturn of Long-time Turtle Ban Citing New Study on Salmonella

The Food and Drug Administration is the target of a lobbying campaign by a handful of farmers to reverse a three-decade U.S. ban on selling baby turtles. The agency prohibited sales in 1975, after the then-popular pets were blamed for causing as many as 280,000



DARRELL BEMERE, WORLD CHELONIAN TRUST

Turtle "farmers" are lobbying the Food and Drug Administration to reverse a 1975 ban on the sale of turtles with shells less than four inches long. Their efforts center on Red-eared Sliders (*Trachemys scripta elegans*).

*Salmonella* infections a year, mostly in children. The FDA edict almost completely barred U.S. commerce in "animals commonly known as turtles, tortoises [or] terrapins" with shells less than four inches long. The size was selected largely because bigger turtles couldn't easily be popped into children's mouths.

Their efforts center on the Red-eared Slider (*Trachemys scripta elegans*), a turtle native to areas that include the Mississippi Delta and watery central and southern Louisiana. As long ago as the late 1950s, growers began stocking man-made breeding ponds with adult turtles, which laid their eggs on the ponds' sandy banks. Farmers collected the eggs, hatched them, and, by the 1970s, were selling millions of quarter-size, green and yellow babies each year. The turtles, which can grow to a foot long and live for more than three decades, were typically sold in the U.S. as pets.

That's the problem, the FDA says. Turtles often carry *Salmonella* in their digestive tracts. Infected turtles can convey the bacteria to their eggs (the FDA also restricts the sale of turtle eggs in the U.S.). Although bacteria-carrying turtles may not show symptoms, they can spread *Salmonella* to their handlers. Ingesting it — typically after failing to wash hands after playing with a turtle — can lead to vomiting, fever, and cramps, even death in vulnerable patients. After the 1975 restriction, turtle-related infections nearly vanished.

Anna Wilde Mathews

Wall Street Journal

4 October 2006