

NATURAL HISTORY RESEARCH REPORTS

A Unique Insular Crevice- and Litter-dwelling Assemblage of Reptiles

The slopes above Chatham Bay on Union Island, St. Vincent and the Grenadines, support one of the last mature secondary forests in the Grenadines. The characteristics of the forest allow it to support a unique herpetofauna that includes four small crevice- and litter-dwelling reptilian species (*Gonatodes daudini*, *Bachia heteropa*, *Sphaerodactylus kirbyi*, and *Typhlops tasymicris*). BENTZ ET AL. (2011. *Herpetological Conservation and Biology* 6:40–50) examined population sizes and densities, activity periods, microhabitat use, thermal biology, and water loss rates of these four presumably syntopic species to better understand these poorly known species and the unique ecological system of the forest floor on which they depend (see also Quinn et al. 2010. *Reptiles & Amphibians* 17:222–233). Their findings show that *G. daudini*, *S. kirbyi*, and *B. heteropa* are present in the ~37-ha area of forest above Chatham Bay at a ratio of approximately 2:1:12, respectively, and tentatively estimated total population sizes are about 6,600 *G. daudini*, 3,200 *S. kirbyi*, and 39,000 *B. heteropa*. Each of the four species was found to exploit separate microhabitats based on specific needs for cover, moisture, and thermal environments. The conditions necessary



MEL J. RIVERA RODRIGUEZ

The Grenadine Sphaero (*Sphaerodactylus kirbyi*) was not known from Union Island until encountered by Joe Burgess in 2010. It is one of four species of small reptiles found together only on the forested slopes above Chatham Bay on Union Island.



MICHAEL KERN

A population of endangered San Francisco Garter Snakes (*Thamnophis sirtalis tetrataenia*) in a coastal prairie in San Mateo County appears to be stable or even increasing — at least in the short term. However, long-term studies of the status of San Francisco Garter Snakes at other sites are required to estimate population trends for this threatened snake.

for these species to thrive apparently are available only in relatively mature forest situated to receive and hold moisture. This unique assemblage and the forest that supports it are under severe and imminent threat from exotic mammals and development, and the preservation of the area above Chatham Bay should be a high conservation priority for regional governmental agencies and non-governmental organizations.

San Francisco Gartersnake Demography

The San Francisco Garter Snake (*Thamnophis sirtalis tetrataenia*) has been federally listed as endangered since 1967, but little demographic information exists for this species. HALSTEAD ET AL. (2011. *Journal of Fish and Wildlife Management* 2:41–48) examined the demography of a San Francisco Garter Snake population on approximately 213 ha of California coastal prairie in San Mateo County, California, from 2007 to 2010. The best-supported mark-recapture model indicated annual variation in daily

capture probabilities and annual survival rates. Abundance increased throughout the study period, with a mean total population from 2008 to 2010 of 443 (95% CI = 313–646) individuals. Annual survival was slightly greater than that of most other garter snakes, with an annual probability of survival of 0.78 (0.55–0.95) in 2008–2009 and 0.75 (0.49–0.93) in 2009–2010. Mean annual per capita recruitment rates were 0.73 (0.02–2.50) in 2008–2009 and 0.47 (0.02–1.42) in 2009–2010. From 2008 to 2010, the probability of an increase in abundance at this site was 0.873, with an estimated increase of 115 (282–326) individuals. The estimated population growth rate in 2008–2009 was 1.52 (0.73–3.29) and in 2009–2010 was 1.21 (0.70–2.17). Although this population is probably stable or increasing in the short term, long-term studies of the status of the San Francisco Garter Snake at other sites are required to estimate population trends and to elucidate mechanisms that promote the recovery of this charismatic member of our native herpetofauna.

NEWS BRIEFS

Blue Iguana Rebounds from Near-extinction

One Caribbean species, the Blue Iguana of Grand Cayman Island, found nowhere else in the world, is looking like that rarest of things, a threatened species roaring back from the brink. Once down to perhaps fewer than a dozen animals, the long-tailed lizards, some growing to five feet and weighing 30 pounds, now number about 500, suggests a tally from a weeklong health screening that ended July 3.

“They are striking animals, turquoise blue with red eyes; they have an almost noble way they hold themselves,” says conservation biologist Fred Burton, head of the Blue Iguana Recovery Program, “but they were almost a forgotten animal.” Biologists knew about the animal, with an Oxford University expedition first describing them scientifically in 1938. But they had disappeared from the island as farmers planted more land and roads stretched across the island as well. Farmers’ dogs killed the lizards

and cars ran them over as they basked on the asphalt. “Cats, feral cats, were really the problem, we have them everywhere and these are very hungry animals,” Burton says. The cats ate young iguanas in droves.

Biologists didn’t know how bad things had gotten for the Blue Iguana until 2002, when Burton implored his colleagues, meeting that year on the island for discussions of iguana conservation across the Caribbean, to stay and craft a conservation plan for Grand Cayman’s own



JOHN BINNS

The Blue Iguana (*Cyclura lewisi*) of Grand Cayman Island is looking like that rarest of things, a threatened species roaring back from the brink of extinction.

native lizard. To do that, they needed to survey the population. That's when they realized they had a big problem. "We just weren't seeing any. And the ones we were seeing were far apart from each other, which isn't what you want for mating," Burton says.

"There was a sort of 'oh no' moment," says Paul Calle, zoological health director for the Bronx Zoo-based Wildlife Conservation Society's Global Health Program. "They quickly realized they had to do something." That something was captive breeding, Burton says, done with a purpose. "We didn't know how they lived or what they ate." So, his team started rearing its own iguanas, keeping them to various ages, letting them go and tracking their behavior. "We learned a lot. We had been feeding them rabbit food basically, all wrong, and keeping them in pens that were too small," he says.

Blue Iguanas eat all sorts of vegetation, but they really like fruit, it turns out, which was part of their downfall. They had congregated within fruit orchards, which the dry scrubland they called their home was becoming on the island. There they met farmers' dogs and cats.

Along with learning how to rear Blue Iguanas, the team learned when to release them, at two years of age, big enough to fend off the feral cats. And they found a place to put them, in two reserves without roads or farms but with the dry scrub favored by the lizards. "They lay a lot of eggs, which is another thing in their favor," Burton says. "Many of the ones we released are now reaching breeding age, so their numbers should really grow."

At the health screening, which checked out captive-grown lizards prior to their release, "I saw more Blue Iguanas in one day than the entire species possessed less than a decade ago," Calle says. "It is a remarkable turnaround."

Burton concedes that the lizards benefited from circumstances that other endangered species lack. Their hard-wired habits allowed an easy transition from captivity into the wild, for example, while large egg clutches let the conservation team raise many iguanas. And this year the conservation trust secured a second Blue Iguana redoubt, the Colliers Wilderness Reserve, for their preservation.

Within two years, the project estimates the iguana's numbers will top 1,000, the target set for their recovery almost a decade ago. The challenge will then be not letting the problems that clipped their numbers before once again take their toll, Calle says. Instead of breeding captive lizards, recovery efforts will have to turn to keeping the reserves open to tourists, but not feral cats.

On the plus side, everyone on Grand Cayman, which is just south of Cuba, knows about Blue Iguanas now, which should make such efforts easier, Burton says. "They are quite the mascot of the island. We have stores named after them and cruise ships stop to see them. I think everyone here is quite proud of them."

Dan Vergano
USA Today

Rediscoveries of "Lost Frogs" a Boon for Biodiversity

Eli Greenbaum, a faculty member from The University of Texas at El Paso rediscovered four species of frogs during a recent African expedition. These discoveries bode well for the planet's endangered biodiversity. Dr. Greenbaum made the discoveries with African collaborators during his fifth venture to the Democratic Republic of Congo earlier this year.

The expedition, which was funded by the university, followed on the heels of an effort by the Washington, DC-based organization Conservation International to send 126 researchers into 21 countries to find over 100 amphibians that have not been seen for decades. Only fifteen "lost" species were rediscovered in that worldwide effort last year, causing alarm among scientists.

The discoveries by Greenbaum's team have highlighted the need for conservation efforts in the remote mountains of eastern Congo. He also

rediscovered a fifth species, an African Puddle Frog (*Phrynobatrachus asper*, described in 1951) during a 2009 trip to the Congo sponsored by the National Geographic Society. The legs of these frogs have so much meat on them that this species was rediscovered in 2009 when villagers on the Itombwe Plateau offered to sell their frog dinner to the scientists! These people led the research team to the frog's natural habitat in streams that run through pristine highland forest.

The five rediscovered species were described without photographs between 1950 and 1952, and hadn't been seen since. They include the species illustrated here and on the inside front cover plus the thumbnail-sized *Arthroleptis pyrrhoscelis*, endemic to grasslands of the Itombwe Plateau at an elevation of ~2,000 m. Frogs in this genus have direct development, where the eggs hatch into tiny froglets, bypassing the more typical aquatic tadpole stage. In addition, *Hyperolius chrysogaster* was last seen in 1954. This frog has been found only in pristine montane forests near Kahuzi-Biega and Virunga National Parks. Forests across eastern Congo are being destroyed rapidly for agricultural use, hastening the extinction of many species from frogs to gorillas.

Recent assessments concluded that a third of the world's amphibian species have become extinct or are seriously threatened with extinction, so Greenbaum's efforts offer a glimmer of hope. "This is important for the sake of conservation on a global scale," he said. "Amphibians are like the canaries in the coal mine. If they go, we're next and they're not doing too good."

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(adapted from a CNAH announcement and Dr. Greenbaum's website, http://eligreenbaum.iss.utep.edu/lost_amphibians.htm)



ELI GREENBAUM

Hyperolius leucotaenius, described in 1950: This treefrog was rediscovered on the banks of the Elila River in the upper elevations of the Itombwe Plateau. The skin on the dorsum of this female is so transparent that you can see her eggs.