

The International Reptile Conservation Foundation: Critical Help for Endangered Species and Habitats

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In small classrooms throughout the Motagua Valley of Guatemala, Mojado and his handler, Antonio Urbino, are popular visitors. Mojado is a teaching lizard, comfortable with being handled even by children, and he is here to represent the critically endangered Guatemalan Beaded Lizards (*Heloderma horridum charlesbogerti*) that are endemic to the valley. If his species is to survive, it needs the cooperation and understanding of an educated and environmentally aware public. In a larger town in the U.S., a large Rock Iguana (*Cyclura* spp.) named Izzy draws an audience to help educate people about the International Reptile Conservation Foundation (IRCF) and its mission to conserve reptiles and amphibians (like Mojado and his kin) and the natural habitats and ecosystems that support them. Izzy is only one of a number of “spokeslizards” who regularly attend reptile

shows and conventions across the U.S. on behalf of the IRCF to teach, solicit donations for the broad range of conservation programs it helps to support, and invite new members to join the organization.

International Reptile Conservation Foundation

The IRCF, founded in 2001, is a member-based, not-for-profit organization headquartered in Tucson, Arizona that takes a pragmatic approach toward conservation. “Many of the species we seek to help are faced with imminent critical risk to their very existence, and sometimes providing the right kind of help at the right time can make all the difference,” says John Binns, founder and CEO of the IRCF. “We can and have responded to emergency situations, and we can also provide assistance to smaller projects



JOHN BINNS

In a Guatemalan classroom, Antonio Urbino and Mojado, the Guatemalan Beaded Lizard (*Heloderma horridum charlesbogerti*), are part of a successful education and awareness program sponsored by the Disney Wildlife Conservation Fund. Although the Guatemalan Beaded Lizard is one of only two venomous lizard species, it need not pose a danger to humans. Students are taught not to interfere with the endangered lizards should they be encountered in the wild.



that wouldn't necessarily come to the attention of some of the larger conservation organizations. We're always on the lookout for ways in which we can make a difference."

In many ways, the IRCF serves as a shared back office to many field-based conservation efforts. This allows the people in the field to focus on what they do best — helping species recover through direct conservation activities — while the IRCF focuses on other key functions such as fundraising, communications, and volunteer coordination.

Internet development is one of the Foundation's greatest strengths, providing a vehicle for global outreach for its partners without that capability. Aside from disseminating information, soliciting donations, and enlisting volunteers, websites hosted and maintained by the Foundation provide e-Commerce options for conservation fundraising through the sale

of specialized merchandise. The Foundation also enables the production of books, posters, and brochures to help increase awareness of species threatened with extinction.

Leading nature photographer and ecologist Thomas Wiewandt, an IRCF member and advisor, believes that the IRCF's independent status is a great asset: "The IRCF was created to give conservation initiatives a voice independent of institutional politics and conflicting agendas. This doesn't mean, however, that the IRCF works alone. In fact, one of its strengths is its ability to partner and work effectively with many organizations in developing and implementing species recovery plans as part of the total conservation solution."

Reptiles & Amphibians

The IRCF's strongest conservation tool has always been its quarterly journal, *Reptiles & Amphibians: Conservation and Natural History*. The journal features 64 full-color pages with centerfold and comes with the IRCF membership. A typical issue features articles about current research and updates on conservation projects, travelogues, book reviews, provocative commentaries, and profiles of important figures in the herpetological community. Most importantly, readers are kept abreast of critical conservation needs through "Conservation Alerts" and the "Focus on Conservation." Contributors to *Reptiles & Amphibians* come from as broad a range as its readers, and include hobbyists, zoo-based professionals, field researchers, and scientists from all levels of academia. All articles are now peer-reviewed. A recent addition to the journal has been an Introduced Species section to document the presence of non-native species of reptiles and amphibians to



Reptiles & Amphibians keeps its readers abreast of the most pressing conservation issues, such as the Global Amphibian Crisis, through research articles, Conservation Alerts, and a Focus on Conservation feature.



Checklists for particular geographic areas provide important data on native and introduced species of reptiles and amphibians.



Readers responded enthusiastically to *Reptiles & Amphibians*' four-part tribute to naturalist Henry S. Fitch, who died in 2009, just shy of his 100th birthday. Fitch was known as the "father of snake ecology" and to highly value field observations.

areas where they do not naturally occur. Identifying the mechanisms and outcomes of these events provides information that regulators can use to address and moderate the problem. The situation is of particular concern on many islands, where endemic species are threatened by competitively superior continental invasives.

Ricord's Iguana (*Cyclura ricordii*)

The Caribbean island of Hispaniola comprises two countries, the Dominican Republic (DR) and Haiti; it also is home to two species of Rock



Ricord's Iguanas (*Cyclura ricordii*) are known from only four isolated populations: The south side of Lago Enriquillo, Isla Cabritos, and Pedernales in the Dominican Republic, and from the newly discovered population in Anse-a-Pitres, Haiti.



The legend on this T-shirt design by Joel Friesch is in Kreyòl. In English, it means "Let's Protect Ricord's Iguanas."



In Haiti, Ricord's Iguanas are threatened largely by human activities such as habitat destruction, hunting for consumption, and nest poaching.



JOHN BINNS

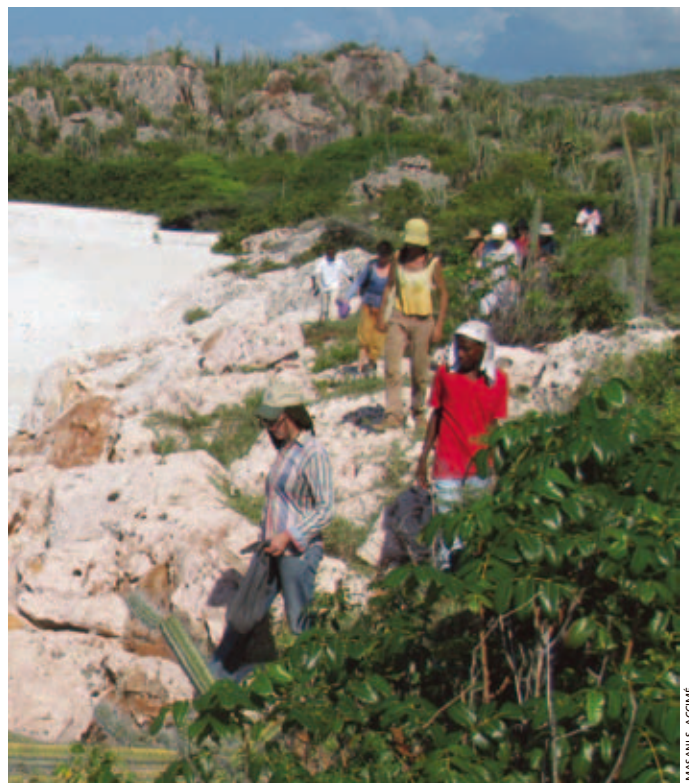
Rhinoceros Iguanas (*Cyclura cornuta*) live sympatrically with Ricord's Iguanas on Hispaniola, but because their habitat requirements are less specific, Rhinoceros Iguana populations are not quite as threatened as those of their congener.

Iguanas: the Rhinoceros Iguana (*Cyclura cornuta*), and Ricord's Iguana (*C. ricordi*). The latter is known only from three small and disconnected remnant populations in the DR and a newly discovered population in Haiti. Red-listed as Critically Endangered by the IUCN, the once wide-ranging habitat of these large ground dwellers has been largely destroyed by agriculture, limestone mining, and cattle that compete for the limited vegetation and trample iguana nests. The animals are also hunted for food and preyed upon by introduced cats, dogs, and mongooses.



MASANI S. ACCOME

A research team member examines a wild Ricord's Iguana hatchling in the study area.



MASANI S. ACCOME

Ricord's team members trek through Ricord's Iguana habitat in Anse-a-Pitres, Haiti.

The IRCF is a long-time supporter of the Dominican NGO Grupo Jaragua that is spearheading conservation efforts for Ricord's and Rhinoceros iguanas, with major funding provided by the U.S. Fish and Wildlife Service and the International Iguana Foundation. The IRCF participated in the IUCN Iguana Specialist Group's workshop to develop a Species Recovery Plan, which prioritizes conservation actions necessary to ensure the long-term survival of Ricord's Iguana. The plan is based on research, particularly of the ecological needs of the species, public awareness, captive breeding, and a future management plan for a series of protected areas.

For the newly discovered population of Ricord's Iguanas in Haiti, education and awareness are key to engaging the goodwill and cooperation of the surrounding community, and a crucial role is played by a local youth group that actually participates in population surveys and radio-tracking. These young people proudly wear T-shirts with a drawing of the endangered Ricord's Iguana perched atop the outline of their country, a logo that was created by IRCF artist Joel Friesch. Thanks in part to sponsorship by Exo Terra, the IRCF is helping to fund portions of the educational program in Haiti, including compensation for local field staff, equipment, major graphic support for educational material, telecommunications, and local transportation expenses. The IRCF is seeking donations to expand its support in Haiti and for its other supported programs.

Grand Cayman Blue Iguana (*Cyclura lewisi*)

One of the most successful projects supported by the IRCF has been on behalf of one of the most endangered West Indian Rock Iguanas, the Grand Cayman Blue Iguana, *Cyclura lewisi*, Red-listed as Critically Endangered by the IUCN. Triggered by a 2002 survey that revealed a mere 20–25 individuals remaining in the wild, the IRCF and the Durrell Wildlife Conservation Trust helped establish the Blue Iguana Recovery Program (BIRP), a key component of which has been the captive breeding and head-starting of Blue Iguanas for release to protected areas in the wild.

BIRP has faced innumerable challenges and setbacks and had many lessons to learn before achieving a degree of success. The IRCF has been



The Grand Cayman Blue Iguana (*Cyclura lewisi*) occurs only on Grand Cayman Island. The Sister Isles Rock Iguana (*Cyclura nubila caymanensis*) is endemic to neighboring Little Cayman and Cayman Brac.

JOHN BURNS



FRED BURTON

The Blue Iguana Recovery Program head-start enclosures. Directly behind these enclosures are the spacious pens for the breeding pairs. Other pens, enclosures, and the facility shed are located elsewhere on the property. The program offers daily guided tours of the facility. Visitors learn how the Blue Iguana has been saved from certain extinction and about the recovery program that works to secure the population for the long term.



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One of the few remaining wild Blue Iguanas (*Cyclura lewisi*) captured several years ago along the Queen's Highway on the north side of Grand Cayman. This large female named "Vegas" is a valuable genetic asset to the breeding program. She recently produced a viable clutch of 17 eggs.

there every step along the way, helping with fundraising, web hosting and design, education and awareness campaigns, and many hands-on contributions. Since 2005, when the first "Team Blue" was recruited and sent to Grand Cayman with hammer and nails to assist in an upgrade of the captive-breeding facility, the IRCF has been organizing volunteers from its membership to assist with everything from facility work to release and radio-tracking of individuals in the wild. Today, after years of hard work, close to 500 captive-raised individuals have been released into the 235-ha Salina Reserve and a newly established second protected area, the 77-ha Collier's Wilderness. A species once functionally extinct in the wild now has a realistic chance of surviving, yet many challenges lay ahead before the program's mission of restoring a stable population of 1,000 Blue Iguanas to the wild can be deemed a complete success.

Guatemalan Beaded Lizard (*Heloderma horridum charlesbogerti*)

The Motagua Valley of Guatemala, with its unique semiarid climate, subtropical thorn scrub, and dry forests, has been recognized by the World Wildlife Fund as a unique eco-region under siege. It is also home to the critically endangered Guatemalan Beaded Lizard (*Heloderma horridum charlesbogerti*). The species' habitat is being destroyed by the expansion of agriculture, the lizards have traditionally been killed on site by local people who believe they are dangerous, and individuals are being collected illegally for the international pet trade. The remaining wild population of Beaded Lizards has plummeted to fewer than 200 individuals.



15, 17 & 18 FRED BURTON 16 JOHN MAROTTA

A series of photographs that depict the primary purpose of the program (from left to right): Breeding, egg collection, husbandry and head starting, and release in the wild. Blue Iguanas released in the Salina Reserve are reproducing; hopefully iguanas being released into the Collier's Wilderness Reserve will also breed. The Blue Iguana Recovery Program relies on local and international volunteers to manage all the duties at the facility and to aid in fieldwork in the extreme and treacherous terrain of the reserves. The IRCF recently published the "*Little Blue Book*" by Fred Burton, which tells the story of the Blue Iguana and its natural history. This hardcover book is heavily illustrated in full color and available on the IRCF website.



ZOOTROPIC

The IRCF-funded utility vehicle used by Zootropic for Project Heloderma, Project Palearis, and others.

Project Heloderma was initiated in 2006 by Guatemalan NGO Zootropic, and later joined by key partners, the IRCF and Zoo Atlanta, to save the Guatemalan Beaded Lizard from extinction. Aspects of the project include ongoing field research, an education and awareness program that has been successful within the species' natural range and hopes to expand, and the establishment of a system of protected areas. Thanks to the project, *Heloderma horridum charlesbogerti* is now listed under CITES Appendix I. An initial parcel of land was purchased in 2007. The protected area, known as Heloderma Natural Reserve (HNR), now covers 128 ha (317 acres) and hopes to further expand to proportions capable of supporting a viable population of Beaded Lizards. In the meantime, captive-breeding of *H. b. charlesbogerti* remains a top priority for preservation of the species in the short term and is one of the primary purposes of the Research and Captive



JOHN BURNS

The Motagua Valley, Guatemala. The marker shows the location of the Heloderma Natural Reserve. Conservation efforts for the Guatemalan Spiny-tailed Iguana (*Ctenosaura palearis*) occur in this same area.



MICHAEL KERN, ANIMAL COURTESY OF ZOO ATLANTA

Guatemalan Beaded Lizard (*Heloderma horridum charlesbogerti*).



THOMAS SCHREI



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Proud sponsor of the IRCF and this centerfold

Habitat of the critically endangered Guatemalan Beaded Lizard (*Heloderma horridum charlesbogerti*) is being destroyed by agricultural development while lizards are killed on sight or collected illegally for the international pet trade.

El Escorpión y la Iguana de Órgano



¡Orgullo de Oriente!
¡Protejamoslos!



T-shirt artwork created by Joel Friesch depicting *Ctenosaura pectoralis* and *Heloderma horridum charlesbogerti* that says: "The Guatemalan Beaded Lizard and the Guatemalan Spiny-tailed Iguana. Pride of the Motagua Valley! Protect them!" T-shirts were distributed in local schools as part of the educational program.

Breeding Facility that began its first phase of operations early this year. As funds allow the centre to expand, the breeding and research functions will increase in scope and the facility hopes to become a hub for environmental education in the Motagua Valley and an anchor for the preservation of the many unique species of flora and fauna found in the dry forest habitat.

Guatemalan Spiny-tailed Iguana (*Ctenosaura pectoralis*)

Eighteen species of Spiny-tailed Iguanas (*Ctenosaura* spp.) have been described — but the conservation status of most is unknown, largely attributable to a lack of research. The IRCF recently helped produce an illustrated guide to ctenosaurs for the U.S. Fish and Wildlife Service to help inspection officials identify animals and assist with the enforcement of national conservation laws.

One endangered ctenosaur species that has been the subject of intense research efforts inhabits the same few remaining patches of dry forest in Guatemala's Rio Motagua Valley as the Guatemalan Beaded Lizard. On behalf of the Guatemalan Spiny-tailed Iguana (*Ctenosaura pectoralis*), Project Pectoralis was initiated by Zootropic, at the suggestion of the IRCF and Zoo Atlanta, to operate in tandem with Project Heloderma and take advantage of the same research and education programs and protected areas. Aside from threats to the habitat that *C. pectoralis* shares with the Beaded Lizard, the species is vulnerable to intense hunting pressures. While these iguanas have long been subjected to small-scale harvesting for food by local residents, initial research revealed that large numbers (as many as 200 individuals at a time) were being caught and sold to foreigners for the illegal pet trade. Armed with this information, as well as data on the small numbers and limited distribution of the species, representatives from Zootropic and the IUCN Iguana Specialist Group, of which the IRCF is a member, submitted a successful application to have *C. pectoralis* and the three other members of its clade (*C. melanosterna*, *C. bakeri*, and *C. oedirhina*) listed under CITES Appendix II.



Guatemalan Spiny-tailed Iguana (*Ctenosaura pectoralis*) basking in the Heloderma Natural Reserve.

Increasing Awareness on Statia

Conservation awareness and education come in many forms, and sometimes it's crucial to deliver the message to the right people. For the Caribbean island of St. Eustatius ("Statia"), the IRCF designed and sponsored the installation of 20 signs notifying residents of the protected status of the Lesser Antillean Iguana (*Iguana delicatissima*). The staff of the St. Eustatius National Parks Foundation (STENAPA) reports that residents will now phone to report the presence of iguanas encroaching on their yards. In the past, these animals would have likely been killed and eaten, whereas now they can be relocated to safer areas.



NICOLE ESTEBAN

IRCF members helped support a web-based campaign to raise funds for awareness signs on behalf of the Lesser Antillean Iguana (*Iguana delicatissima*) on the island of St. Eustatius. Contributors are acknowledged at the bottom of the sign.

Gharial (*Gavialis gangeticus*)

Touted for decades as the most successful conservation story in India, the Gharial (*Gavialis gangeticus*) conservation program faltered, with only about 200 reproducing Gharials remaining in the wild. Formerly found in almost every river system in the northern Indian subcontinent, these large crocodilians are found today in only a few protected areas separated by hundreds of kilometers. Although the initial recovery initiative included both captive breeding and release programs in conjunction with the establishment of several game reserves, the plan failed to educate local farmers and fishermen. Instead, local people perceived the animals as competitors



to their livelihood. Poaching has been and continues to be a major threat, especially in the National Chambal River Sanctuary (NCR), which had been a stronghold of the species for several decades.

In a revitalized conservation effort, the IRCF is now working to promote the Gharial Conservation Alliance as it resumes the work of the Gharial rehabilitation program and protection of critical riverine habitats. The current plan, however, calls for the educational efforts necessary to persuade local villagers to desist from their destructive behaviors; socio-economic work is being undertaken with the eventual aim of formulating plans for Gharial-friendly livelihood options for riverside communities within the sanctuary. Radio telemetry studies are contributing to a more scientific management plan and *in situ* as well as *ex situ* breeding programs, the latter at the San Diego Zoo, will, hopefully, give this unique species a fighting chance for survival.



JOHN BINNS

The once widely distributed Gharial (*Gavialis gangeticus*) is now limited to isolated populations in a small number of sanctuaries.



OLIVER BORN

A young Gharial (*Gavialis gangeticus*) basks in the late afternoon sun.



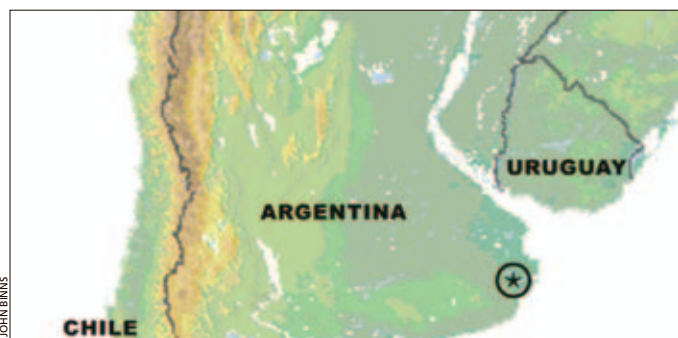
OLIVER BORN

A group of Gharials basking on a sandbar near the National Chambal River Sanctuary. The Gharial Conservation Alliance, its members, and partner organizations are conducting research to better understand Gharials and their needs in order to develop and carry out efficient conservation strategies.

Argentine Sand Dune Lizard
(Liolaemus multimaculatus)

The coastal areas of Buenos Aires Province in Argentina support a diverse natural environment that includes sand beaches, cliffs, extensive sand dune fields, and lagoons. They are home to an endemic biota that has evolved in this unique environment. Unfortunately, due to uncontrolled human expansion into this region, many of these species are threatened — none more so than the Sand Dune Lizards (*Liolaemus multimaculatus*), that possess the ability to “swim” in the loose sands and coloration that is a perfect match to the local landscape. This highly specialized reptile is unable to successfully colonize other areas. If not protected, it will disappear completely from the face of the earth.

With funding support from the IRCF, the Sand Dune Lizard Study and Conservation Project has been performing critical research that will support establishment of a Coastal Dunes Reserve by the provincial government. Protected habitat is crucial to the continued survival of the remarkable Sand Dune Lizard.



JOHN ENNIS

The location of the Sand Dune Lizard study and conservation project.



FEDERICO KACOLINS

A project researcher collects morphometric data on the Sand Dune Lizard (*Liolaemus multimaculatus*).



FEDERICO KACOLINS

The color pattern of the Argentine Sand Dune Lizard (*Liolaemus multimaculatus*) blends perfectly with its habitat.

Arboreal Alligator Lizards (*Abronia* spp.)

Arboreal Alligator Lizards of the genus *Abronia* are among the most endangered species of lizards in the world. In Guatemala, the genus comprises ten species, eight of them endemic; until recently, two species (*Abronia campbelli* and *A. frosti*) were thought to be extinct. Project Abronia was initiated by the Guatemalan NGO Zootropic in late 2009, with support from Zoo Atlanta, with the objective of protecting these cloud-forest-dwelling reptiles and their habitat.

The conservation plan for these secretive lizards involves basic research, workshops and environmental talks held in the areas where the various species are located, and *in situ* as well as *ex situ* breeding programs. Since habitat destruction is the primary threat to *Abronia* species, habitat protection, restoration, and reforestation are essential. The IRCF has been able to contribute critical equipment for telemetry studies and hopes to assist with other aspects of the project as funding is acquired.



THOMAS SCHREI

Campbell's Alligator Lizard (*Abronia campbelli*).



ZOOTROPIC

Environmental education has always been a component of Zootropic's conservation strategy. Groups of students, such as these, are taken on field trips to see *Abronia* in the wild in order to encourage respect for wildlife and for nature itself.



LESTER MELÉNDEZ

Abronia fimbriata lacks an English common name.

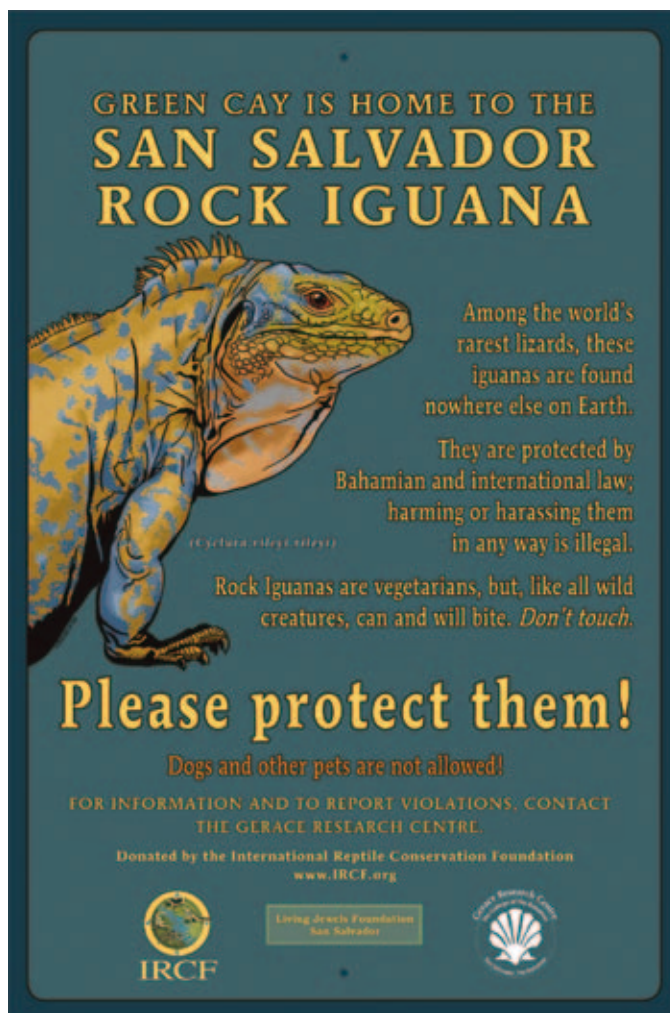
San Salvador Rock Iguana
(*Cyclura rileyi rileyi*)

The IRCF is currently producing awareness signage in English and French for the San Salvador Rock Iguana (*Cyclura rileyi rileyi*) in concert with the Gerace Research Centre, the College of the Bahamas, and Living Jewels Foundation to be posted on Green Cay, San Salvador, Bahamas. This species is listed as Critically Endangered, with an estimated population of 250. Green Cay is a small cay, approximately 575 m long by 70 m wide.



An aerial view of Green Cay, San Salvador. The inland darker and green areas are iguana habitat; grayish area to the shore is karst.

Right: An awareness sign measuring 46 x 69 cm. These signs are in full color, made with high-tech laminates, impervious to UV, and nearly indestructible, making them a good investment for isolated locations.



A San Salvador Rock Iguana (*Cyclura rileyi rileyi*) on Green Cay. Pattern and coloration of the Green Cay iguanas vary considerably.



JOHN BINNS

Sister Isles Rock Iguanas (*Cyclura nubila caymanensis*) are found only on Little Cayman and Cayman Brac, Cayman Islands.

Sister Isles Rock Iguana (*Cyclura nubila caymanensis*)

The IRCF recently initiated a program with the National Trust for the Cayman Islands to receive contributions for the purchase of critical nesting habitat for the Sister Isles Rock Iguana (*Cyclura nubila caymanensis*) on Little Cayman. In August 2011 on Little Cayman, the IRCF participated in the three-day Sister Isles Rock Iguana Species Management Plan (SMP) planning meeting facilitated by Fred Burton. Also represented were the National Trust for the Cayman Islands, the Cayman Islands Department of Environment, the Cayman Islands Department of Tourism, the Royal Cayman Islands Police Service, the Central Caribbean Marine Institute, the Blue Iguana Recovery Program, local representatives from Grand Cayman, Little Cayman, and Cayman Brac, and Matt Goetz from the Durrell Wildlife Conservation Trust, U.K. The IRCF committed funding to support the population assessment on Cayman Brac, where the rapid decline in the number of Sister Isles Rock Iguanas necessitated development of the conservation plan. A three-year SMP was produced at the meeting, and a draft of the plan is currently circulating for review. As soon as the plan has been finalized, a press release will be published. The IRCF is seeking funds to further support this effort.

“Thanks to contributions from members and the ongoing support of sponsors such as Exo Terra and the Rob Dorson Trust Fund, our strength and ability to help save species, such as the Guatemalan Beaded Lizard, Ricord’s Iguana, and the Sister Isles Rock Iguana continues to grow,” says John

Binns. Perhaps you too can become part of the solution, helping to bring amazing reptilian species back from the brink of extinction. To learn more about the IRCF and help with its conservation work by making a contribution toward its mission, please visit our website at www.ircf.org.

Acknowledgments

The IRCF is grateful and thanks Exo Terra for its continued sponsorship, providing funds that help make our conservation efforts possible; the Rob Dorson Trust for generous contributions in memory of Rob Dorson, whose passion to help save the Blue Iguana and other endangered species continues through his Trust; the Maine Community Foundation for its generosity; Jeff Barringer for the years of help Kingsnake.com has provided promoting the IRCF on its website, and assistance at shows and conventions. We thank Bob and Sherry Ashley (NARBC/Eco Publishing) for providing space for the IRCF booth at their shows and help producing t-shirts for our supported programs; CaribSea, Inc. for their support and generous contributions; Jill Jollay for her generous donations; Sue Solomon for her contributions over the years; the Australian Herpetological Society for promoting the IRCF; Joel Friesch for his artwork contributions and efforts in the field, and Desiree Wong for her years of unwavering support and efforts. The author expresses her heartfelt appreciation to long-term colleagues and fellow *Reptiles & Amphibians* editorial staff members: Executive Editor Robert Powell, Art Director Mike Ripca, and Graphics and Photo Editor John Binns. Thanks for all the years of hard work and good humor! Thanks also to Michael Kern who produced a very early draft of this article.

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KRISTINA CARPENTER

Female Timber Rattlesnake (*Crotalus horridus*) (female-515 in this study) just after emergence from hibernation.