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ISG Newsletter
Published by the
Zoological Society of San Diego
Applied Animal Ecology Division
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Escondido, CA 92027
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Applied Animal Ecology
Zoological Society of San Diego

The Iguana Specialist Group prioritizes and facilitates conservation, science, and awareness programs that help ensure the survival of wild iguanas and their habitats.

In This Issue

Iguana Specialist Group *Newsletter*

Volume 11 • Number 2 • Fall 2008

News & Comments

2008 Annual ISG Meeting

The Iguana Specialist Group will hold their annual working meeting on 12-14 November 2008 at the White Oak Conservation Center (WOCC) in the northeastern-most corner of Florida in Yulee. This remarkable facility is not open to the public and we are fortunate again to have them as our hosts. The last time we met at WOCC was ten years ago in 1998 for the third annual meeting. White Oak is exploring the possibility of becoming involved with iguana conservation in a supporting capacity that involves their staff and expertise. This will be a good opportunity to showcase the broad range of our activities. For more information about the center see: http://www.wocenter.org/

This meeting marks the inauguration of our new Co-Chairs Glenn Gerber (San Diego Zoo) and Miguel Garcia (Puerto Rico DNR) and new Deputy Chairs John Iverson (Earlham College) and Jan Ramer (Indianapolis Zoo). On behalf of Allison and myself, we want each of you to know what a pleasure these past eleven years have been, leading this remarkable group and working with so many of you on both a personal and professional level. We are both very proud of all that the ISG has achieved since 1997, and we look forward to many years of continued productivity under Miguel, Glenn, John, and Jan.

Rick Hudson and Allison Alberts
ISG Co-Chairs

IUCN
The World Conservation Union

Species Survival Commission

Jamaican (left), Grand Cayman (below), and Anegada (right) iguanas at San Diego Zoo Conservation Research. These animals are part of the ex-situ population managed by partners in the AZA Cyclura *SSP. Photos by Jeff Lemm.*

U.S. Captive *Cyclura* Updates ✵ Significant Births. Congratulations to the Indianapolis and San Diego Zoos for recent hatches of *Cyclura lewisi*! In June at Indy, four babies hatched after 77-78 days of incubation to parents 238 and Stub-tail. Though they haven't always been paired, this is the first successful hatch for the 18-year old dam and 17-year old sire in many years. At San Diego, a singleton hatched from the pairing of 957 and 1075. This is the second clutch for this young pair (three siblings hatched in 2007) since being imported from Grand Cayman in 2005. They are a welcome addition to the genetic diversity of our population!

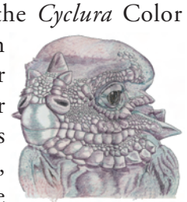
New Partner Zoos. The Association of Zoos and Aquarium's *Cyclura* Species Survival Plan is pleased to welcome three new zoos to the program. Fresno's Chaffee Zoo and St. Louis Zoo are now raising juvenile Jamaican iguanas which hatched at Indianapolis in 2006. Omaha's Henry Doorly Zoo is also accumulating husbandry experience by exhibiting a group of rhinoceros iguanas previously living at St. Louis Zoo.

Recent Deaths. The Gladys Porter Zoo staff are sad to announce the death of Pharaoh in late summer; he was at least 25 years old. Pharaoh was a wild-caught founder that came to the U.S., first to the Indianapolis Zoo, in 1999. He was the father, grandfather, and great-grandfather of many offspring at the Grand Cayman captive facility (230!), most of whom have been released in the QEII Botanic Park and Salina Reserve. The recent four hatchlings at San Diego are also from Pharoah's pedigree. A charismatic and handsome iguana, he will be sorely missed. Also in late summer, one of the male Jamaican iguanas at San Diego Zoo died suddenly. Necropsy revealed the cause of death was an unusual case of heart failure resulting from bleeding into the sac surrounding the heart. This male was 14 and was imported from Kingston's Hope Zoo as a two-year old.

San Diego Zoo Enhancements. Within a few weeks, the Kenneth C. and Anne D. Griffin Reptile Conservation Center will be ready to house the colony of rock iguanas at the San Diego Zoo's Wild Animal Park. The 2,000 square-foot facility, designed primarily for the captive propagation of *Cyclura*, is a temperature and humidity-controlled facility with 20 adult enclosures, a spacious kitchen/lab, and a hatchling rearing room. Each adult enclosure consists of a 6x10 foot indoor and a 6x8 foot outdoor enclosure, containing Caribbean plants, and three feet of substrate conducive to natural nesting behavior. The juvenile room measures 10x20 feet and allows for numerous rolling cages and smaller caging systems. The roof has a series of skylights allowing ultraviolet exposure for the indoor spaces. Awaiting their new home are 4.2 Anegada, 2.0 Cuban, 4.4 Grand Cayman, and 0.2 Jamaican ignanas (male.female), An additional pair of Jamaican and Anegada iguanas will rotate on exhibit at the San Diego Zoo.

ERRATA

There was an error in the *Cyclura* Color Variation report by John Bendon, page 4, Winter Newsletter 7(2), 2007. For Mona Island iguana, males are larger in size overall, but females have more protuding spikes and higher noses.



the captive facility. Two rainwater catchment tanks were installed next to the facility shed, channeling rain from the roof, and providing a reliable year-round water supply. Additionally, a small solar power system was installed to power a water pump and a 12-volt chest refrigerator for iguana food.

A small tour assembly area was cleared and surfaced with crushed rock and a comprehensive set of full-color interpretive and donor recognition signs were mounted throughout the facility. These durable and graffiti-proof signs were designed by IRCF, manufactured by Fossil Graphics, and again paid for from the Greenlight Re grant. The National Trust for the Cayman Islands and QEII Botanic Park management worked together to set up a simpler tour booking operation whereby visitors are able to buy their Blue Iguana Safari tickets on arrival at the Park ticket booth, with no need to book in advance.

An example of the new graphic educational signs installed throughout the captive facility. Design by John Binns.

Staffing. With Chris Carr's involuntary departure last year due to local immigration policies, long-term BIRP volunteer John Marotta has come on staff as Warden, and has just been joined by James Pedley, bringing the staffing at the captive facility back to two. Sponsorship from local law firm Walkers for a second year running is helping, along with tour income, to cover their salaries. Former BIRP employee Samantha Hicks is back in Grand Cayman and is generously volunteering days when she is not required at her paid job, helping Fred with administrative aspects of the program. An array of local volunteers (including regulars Stu Petch and Gary Redfern) help out at the captive facility and "Team Blue" international volunteers, recruited through the IRCF website, continue to cover much of our fieldwork effort.

Salina Reserve Restoration. Fieldwork is advancing well towards our target of annual population monitoring of iguanas now living in the Salina Reserve. Calibrated against extremely detailed and arduous census work in summer 2007, we have adapted a distance sampling / mark-recapture technique which is yielding comparable results at a much lower effort. We are now testing the technique's effectiveness at various times of year, beginning to capture information about last year's natural recruitment rate, and describing the pattern of dispersal away from release sites. By the end of this year we hope to have a standardized monitoring technique in place. Field results currently suggest the Reserve may ultimately hold ~400 blue iguanas, heavily dependent on our deploying sufficient numbers and size ranges of artificial retreats. IRCF is assisting in manufacturing options for a long-lived, modular concrete retreat design that may prove key to achieving this goal. Our minimum target for a viable wild population of *lewisi* is estimated at 1,000 individuals. Most of the funding for the Salina restoration effort continues to come from UK-based donors through the Durrell Wildlife Conservation Trust and supplemented by donations through IRCF.

Land Issues and Potential EU Grant. Meanwhile attention in Grand Cayman is once again heavily focused on protection of a new xerophytic shrubland reserve, both for the blue iguanas (as the flagship) and the other endangered and unique plant and animal species characteristic of that ecosystem. After many years of BIRP and Department of Environment work on a EU grant application, shared between the Cayman Islands, Turks & Caicos and the British Virgin Islands, and a major effort by the UK Overseas Territories Conservation Forum, a financing agreement was signed in Brussels last December. In the Cayman Islands, this has potential to fund a visitor center for the BIRP, hopefully based at a new shrubland nature reserve. The financing also may offer modest seed funding towards purchase of land for protection. A local steering committee has been formed for this project, an EU consultant-led project feasibility review is underway, and administrative start-up is beginning. The biggest difficulty so far is arriving at a realistic protected area proposal in the face of rapidly escalating land prices, new road corridors, and private grant and commercial leasehold proposals for Crown Land.

Grand Cayman iguana (*Cyclura lewisi*)

2008 has been a year of extreme highs and lows for the Blue Iguana Recovery Program in Grand Cayman. The following is edited from personal communication, Blue Iguana Tales, and press releases mainly written by Fred Burton and Samantha Hicks. For more details, please read: **www.blueiguana.ky**

Post-Murder Update. Since the violent crime resulting in the death of seven blue iguanas in May, public concern remains high despite a lack of news from the ongoing police investigation. A CI$16,000 reward still stands for information leading to the arrest and/or prosecution of the culprit(s). Soon after the slaughter, the National Trust and the QEII Botanic Park have been sharing the cost of a security guard to patrol the park and the iguana facility after hours. With technical assistance from Her Majesty's Prison at Northward, a security camera surveillance system will be installed. Supplies have been ordered and contractors are preparing to enclose the entire captive facility with high security perimeter fencing. Thanks to expert veterinarian care, adult males Archie and Billy are recovering well from the severe injuries they sustained in the attack. We are extremely grateful for the amazing generosity from many donors in the wake of this event; their support has bolstered the BIRP financially and emotionally.

New Potential Founders. Four 'new' wild blue iguanas have come into the captive facility in recent months. Two young animals, a 2-3 year-old female and a four year-old male, were caught by BIRP staff and volunteers on the edge of the Queen's Highway adjacent to the Salina Reserve. Neither had ever been tagged, but their age leaves several possibilities open. They are not likely to be offspring of the iguanas we released in the Salina. However, they could easily be offspring of iguanas that have dispersed after release in the QEII Botanic Park. Alternatively, they may be offspring of unknown survivors of the original wild population, in which case these two may be potential founders. Genetic analysis will be necessary to try and determine which is most likely.

Less ambiguous in origin are two large adult females too old to be offspring of any iguana we have ever released and are certainly new potential founders, bringing additional bloodlines into the captive breeding program. The first was captured (bizarrely!) in Palm Dale, George Town (downtown!), and is presumably an escapee from illegal captivity. The second female was observed by BIRP staff for over a week at Spotters Bay in East End before being captured by a local man 4.5 miles west who found her in danger of a car collision. Their color and scale pattern leaves little doubt they are authentic *lewisi* (though again genetic analysis will be necessary to reconfirm this).

Hatching Season. 2008 developed into an extraordinarily abundant year for hatchlings. Beginning with Deborah, who was underground laying when her mate Billy was attacked in early May, nesting peaked a month earlier this year. Interestingly, the Sister Isles rock iguana in Little Cayman also nested early. In the hope of receiving a land grant for a new protected area (see below), as many nests as possible were collected and we are now raising over one hundred hatchlings! For only the third recorded time (second in GC), a set of twins hatched from the nest of a free-roaming female in QEII Botanic Park.

Captive Facility Enhancements. Thanks to significant sponsorship from local reinsurance company Greenlight Re, structural improvements have been made at

In Memoriam

Seven Grand Cayman iguanas, whose lives helped establish the captive breeding program, were brutally killed by vandals in May. Photo compilation by John Binns.

New Headstart Facility at Hope Zoo ✵ A new captive management facility designed to double the capacity for headstarting Jamaican iguanas is under construction at Kingston's Hope Zoo. The new 1440 sq ft facility consists of 12 cage units and will effectively double the number of iguanas that the Zoo can accommodate. During the Species Recovery Planning meeting in 2007, a new headstarting strategy was drafted that called for the number of hatchlings brought in from Hellshire each year to increase to 40 (versus the previous 20). In accordance, the program would move to a five-year headstart cycle whereby 40 would enter the zoo each year and 40 would be released. To achieve this goal, an additional facility had to be constructed. To ensure that iguanas are large enough to release in five years, the size of groups housed together will be reduced to four to six animals per cage when they reach age three (ideally 1.3 or 2.4, males: females). This strategy is intended to reduce competition and aggression and encourage optimal growth.

Construction got underway during Summer 2008 and is expected to be completed soon. Funds were provided by the International Iguana Foundation through an grant from an anonymous donor.

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Fundraiser Carded for Blue Iguana Programme.
Cayman Net News Online - July 31, 2008

Cayman Distributors is the latest company coming to the assistance of the National Trust's Blue Iguana Recovery Programme, which brings about awareness and raises funds to protect endangered Blue Iguanas.

One such initiative planned by both organisations is an official Blue Iguana Cocktail competition at the Bed restaurant on the Seven Mile Beach on Sunday, 3 August, beginning at 2:00 pm. A panel of judges will be on hand.

The winner's name will become part of the cocktail's sale name for the season and will also be granted the privilege of naming a hatchling Blue Iguana for life. Cayman Distributors will bottle the spirits components of the mix and sell the winner's Blue Iguana Cocktail base to bars throughout the island. All net profits from Cayman Distributors' sales of the Blue Iguana Cocktail base will then be donated to the Blue Iguana Recovery Programme, the organisations said in a press release.

"What really impressed me was how everyone I discussed this project with loved the idea and wants to be a part of it. I believe it is everyone's moral responsibility to help maintain the culture and integrity of this beautiful island – that includes all creatures, great and small," Kevin Paschke, of Cayman Distributors, said. "I feel very lucky that Cayman Distributors and my sales team might be able to help in some small manner."

The competition is open to the public and has already attracted interest from many of the island's bartending staff. Candidates for the winning Blue Iguana Cocktail must use Cayman Distributors products including Bols Blue Curacao.

"I defy anyone to visit the Blue Iguanas and not fall in love with these beautiful creatures. Ten years ago there were only 25 left in the world. How many people will be able to look back in their lives and say I helped to effect something good worldwide?" Mr Paschke asked.

ISG Member Joel Friesch contributed his artistry to the promotion of the Blue Iguana Cocktail contest.

Taxon Reports

Fijian iguanas (*Brachylophus species*)

Fijian Iguana Taxonomy and Update. A new species of Pacific iguana was described in September 2008 from the central islands of Fiji (Keogh et al. 2008). This makes three living Pacific iguana species, including the Critically Endangered Fijian crested iguana (*Brachylophus vitensis*) and the Lau banded iguana (*Brachylophus fasciatus*: from Tonga and the Lau islands of eastern Fiji). This work was conceived during the 2004 Iguana Specialist Group meeting in Fiji, when Scott Keogh, Peter Harlow, and Robert Fisher got together and realized that they could all contribute to this project by pooling their DNA, morphological, and distributional data for all the Pacific iguanas.

Their genetic and morphological analyses of 61 individuals from 13 Fijian islands suggested there are actually three living kinds of *Brachylophus* iguanas, not two as indicated in current taxonomy. The newly described iguana species is called *Brachylophus bulabula*, the Fijian banded iguana, and occurs on many of the medium-large forested islands in central Fiji. Based on morphological differences, the Tongan banded iguanas were described as a new taxon, *B. brevicephalus*, by Avery and Tanner in 1970 but were later synonymized with the Fijian banded iguana *B. fasciatus* by Gibbons in 1981. As the original *B. fasciatus* was described from a specimen collected in Tonga, this name remains unchanged for Tongan and Lau islands (Fiji) iguanas, and the species from the central Fijian islands (e.g. Kadavu, Ovalau) is given the new name of *Brachylophus bulabula*.

Other iguana work continues on Fijian iguanas. Suzi Morrison, PhD student from the Australian National University, has completed her Fijian crested iguana field work on Yadua Taba, and the first paper (on reproduction) is under review. Other papers in preparation include tropical dry forests ecology and effects of Pacific rats and crazy ants on crested iguanas. Clare Morrison, University of the South Pacific, and her team of students and colleagues have completed their crested iguanas diet and habitat use research, also on Yadua Taba, and these projects are now published or in press.

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Left: Male Fijian banded iguana from Ovalau, newly described as Brachylophus bulabula. *Above: Female* B. bulabula *from Kadavu. Photos by Peter Harlow*

To assess behavioral and physiological differences between populations under contrasting visitation intensity, we collected behavioral and morphometric data along with blood samples. We used standard flight distance analyses to document behavioral differences among iguana populations. Blood samples were collected within three minutes of capture and divided into vials for future genetic analyses and vials stored on ice for physiological analyses. Immediately following blood extraction in the field, approximately 0.1 ml of blood was analyzed using portable i-STAT blood gas analyzers with CG8+ cartridges to examine glucose, sodium, potassium, ionized calcium, hematocrit, hemoglobin, pH, partial pressure of carbon dioxide, partial pressure of oxygen, total carbon dioxide, bicarbonate, base excess in extracellular fluid, and oxygen saturation. On-board the Coral Reef II, we assessed general physiology of animals between islands using manual complete blood counts (CBC), total solids, and packed cell volume. Plasma was collected from blood and frozen for later analysis of stress hormone levels (corticosterone), biochemical concentrations, and nutritional parameters (e.g., vitamin A, C, E, and D concentrations). We attempted to capture an equal number of iguanas from prominent feeding beaches and areas less visited by tourists.

All captured iguanas were measured for general morphometrics and were sexed by cloacal probing for hemipenes. Condition indices based on body mass versus length will be used to compare values between iguana populations. Sandra Buckner led the vegetation team in conducting from three to four 100 meter cross-island transects to record abundance and incidence data of plant species from each island. These data will be used to analyze potential differences in plant species composition between islands. We collected scat samples from each cay. Samples were dried on-board the research vessel, weighed, and sorted for contents. The data will be used to analyze potential diet differences between main feeding beaches and island interiors, and also between islands. Preliminary data demonstrate that scats from Leaf Cay (Allen Cays) are often packed solid with sand and dried to the consistency of a cement pellet. We suspect these scats are caused by ingestion of sand during mass tourist feeding events.

Preliminary analyses of the data reveal physiological differences between islands. We are currently applying for funding for further corticosterone and nutritional analyses.

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Above: A tourist boat from PowerBoat Adventures arriving at the main beach on Leaf Cay in the Allen's Cays. Right: More than 70 iguanas remain on the beach after the departure of a tourist boat. Photos by Charles Knapp.

The iguana population on Flat Rock Reef Cay (FRRC) now exceeds 100 iguanas, following the introduction of several iguanas around 1996. In May, we found four dead iguanas which is the first mortality we have verified on the island. After noticing a distinct smell of rotting flesh along the east coastline, we pinpointed the odor as emanating from a large blue 50-gallon plastic drum just above the high tide line. When cut in half, the barrel contained three medium-sized iguanas (14, 20, and 21 cm body length) in similar states of decomposition. None of the animals were marked and the precise cause of death was uncertain. However, we speculate that the three iguanas may have been using the drum as a retreat, and it may have been moved by the wind or tide such that the iguanas could not escape causing them to overheat and die. A very unfortunate accident that demonstrates just one more negative impact of humans and their products on the environment.

While on FRRC in May, we excavated the iguana nests that we had identified in July of 2007. We found that the six nests had contained 24 eggs and 18 (75%) of these had hatched successfully. This compares to seven nests identified in July of 2006 in which 24 of 30 eggs hatched and emerged (80%).

Kirsten Hines and I returned to FRRC from 12 to 18 July for our third year of nesting studies. Despite hot temperatures (112°F maximum under our tarp in the bush in mid-day!) and a storm with near hurricane-force winds, we captured 56 iguanas (38 recaptures) and located seven nests. Each nest was excavated, the eggs measured, and reburied with a digital temperature logger. Mean clutch size in this year's nests was 4.1 (range 3-5) which is similar to the six nests found there last July (mean 4.0; range 2-5). We will re-excavate these in May 2009 to determine nest success and incubation temperatures.

For the sixth year (2002-2008, except 2006) we visited Bush Hill Cay at the northern limit of the Exuma Cays Land and Sea Park to census the introduced population of Acklins iguanas (*Cyclura rileyi*) there. We caught 80 iguanas: 29 males, 44 females, 6 unsexed, and one skeleton (14 new, 65 recaptures). We have now marked a total of 293 iguanas on Bush Hill and recorded 240 total recaptures.

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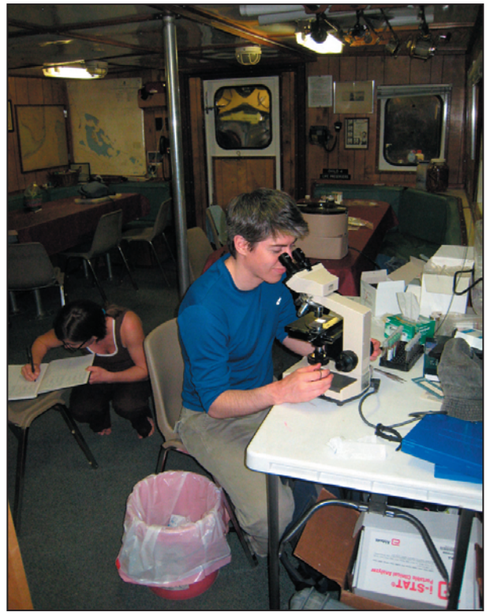
Exuma Island iguanas (***Cyclura cychlura inornata*** and ***C. cychlura figginsi***)

Health Assessment for Exuma Island Iguanas. The primary goal of the 2008 Shedd Aquarium iguana research excursion was to assess the impacts of tourist visitation and food supplementation on endangered Bahamian iguanas. Specifically, we investigated the physiological parameters and behaviors of iguanas (*Cyclura cychlura inornata* and *C.c. figginsi*) living under different degrees of visitation pressure in the Exuma Islands. Research was conducted with the assistance of "citizen scientists" aboard the R/V Coral Reef II March 22–30, 2008. The research team worked on three islands visited by tourists and two unvisited islands to assess behavioral and physiological differences among resident iguanas. The visited islands included White Bay Cay (*C.c. figginsi*) in the Central Exumas, and Leaf and U Cays in the Northern Exumas (*C.c. inornata*). The two non-visited islands included North Adderly and Noddy Cays (*C.c. figginsi*) located north of Lee Stocking Island in the Central Exumas. We also visited briefly an introduced iguana population on Leaf Cay (*C.c. figginsi*) located north of Lee Stocking Island.



Dr. Trevor Zachariah performing white blood cell counts in the mobile laboratory aboard the Coral Reef II. Photo by Charles Knapp.

Recent Fijian Iguana Publications.
Harlow, P.S, M. Fisher, M. Tuiwawa, P.N. Biciloa, J. Palmeirim, C. Mersai, S. Naidu, A. Naikatini, B. Thaman, J. Niukula, and E. Strand. 2007. The decline of the endemic Fijian crested iguana *Brachylophus vitiensis* in the Yasawa and Mamanuca archipelagos, western Fiji. Oryx 41(1): 44-50.

Keogh, J.S., D.L. Edwards, R.N. Fisher, and P.S. Harlow. 2008. Molecular and morphological analysis of the critically endangered Fijian iguanas reveals cryptic diversity and a complex biogeographic history. Philosophical Transactions of the Royal Society, B 363(1508): 3413-3426.

Morrison, C., T. Osborne, P.S. Harlow, N. Thomas, P. Biciloa, and J. Niukula. 2007. Diet and habitat preferences of the Fijian crested iguana (*Brachylophus vitiensis*) on Yadua Taba, Fiji: implications for conservation. Australian Journal of Zoology 55: 341-350.

Morrison, C., G. Keppel, N. Thomas, I. Rounds, and P.S. Harlow. Critically endangered Fijian crested iguana shows habitat preference for globally threatened tropical dry forest. Pacific Science *In press*.

Brazilian green iguana (***Iguana iguana***)

The Ecology of the Green Iguana (Iguana iguana) in the Brazilian Pantanal. The aim of the "Pantanal Iguana Project" is to gather information on the basic ecology of the green iguana (*Iguana iguana*). The project will examine their potential role as seed dispersers, their importance in the food web, and the relation between nesting sites and the flooding regime. Habitat quality, density of iguanas, and nesting sites are being examined through regular expeditions and surveys throughout the Pantanal in both Mato Grosso (since 2005) and Mato Grosso do Sul (since 2008). Stomach flushing and scat collection methods are being tested and compared. We are receiving a lot of advice and support from our ISG colleagues while testing these methods. Micro-histological analysis of vegetation matter found in the stomach or scats has been successfully tested as an efficient method of identifying species consumed. In many areas, riverbanks are being degraded due to cattle ranching or other human activities. Are iguanas capable of dispersing seeds and participating in the natural restoration of these areas? Hydroelectric dams are being built north of the Pantanal and are having an impact on the natural flooding regime. Iguanas nest during the dry season only, when rivers are at their lowest level. What impact will changes in flooding regimes have on this species?

Although *Iguana iguana* is a widespread species, very few studies have been conducted in Brazil. There is a lot to be learned about and from this species. Findings from this work will also contribute to propose conservation measures for riverine habitats that are key to many wildlife species in the Brazilian Pantanal wetland.

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Ricord's iguana (*Cyclura ricordi*)

Isla Cabritos Field Report 1-15 April 2008. The Indianapolis Zoo, in partnership with The National Zoo of the Dominican Republic (ZooDom) and Grupo Jaragua (a Dominican environmental NGO), recently participated in an ongoing field research project on endangered Ricord's iguanas (*Cyclura ricordi*) in the Dominican Republic. The Indianapolis Zoo team included Dr. Betsy Stringer (Eli Lilly Intern Veterinarian), Renae Burks (Veterinary Technician), Dr. Jason Williams (Nutritionist), Richard Searcy (Senior Keeper – Deserts Biome) and John E. Wyatt III (Senior Keeper – Deserts Biome). Dr. Gerard Garcia (ZooDom veterinarian) and Dr. Laura Perdomo (Grupo Jaragua veterinarian) also participated in all aspects of this project. A local guide Moná (Lago Enriquillo Guides) assisted with locating iguanas, dens, and food plants during our stay on the island. Funding for the project was made possible with generous grants from the Maine Community Foundation and the American Association of Zoo Veterinarians' Mazuri Fund.

The main goal of this project was to perform a comprehensive population survey of Ricord's iguanas (*Cyclura ricordi*) and rhinoceros iguanas (*Cyclura cornuta cornuta*) on Isla Cabritos, an island within Lago Enriquillo, a hyper-saline lake in the western region of the Dominican Republic. In 2003, transects were established running north/south every 500 meters across the length of the island so that a long-term population survey could be conducted. This year the first of a ten-year survey of the iguana population on the island began. A team of two people walked each transect, using GPS receivers to determine their path and mark iguana sightings. Dens, feral animals, and scat were also noted. There were originally 26 transects on the island, but three could not be walked due to high water levels (the lake is ~30 feet higher than it was five years ago). During this year's population assessment, the team saw a total of 18 Ricord's iguanas and nine rhinoceros iguanas. This data will be analyzed with the help of Jim Dine (Indianapolis Zoo volunteer) who is using the data for his Master's thesis.

In addition to the population research, the team continued biomedical assessments of the Ricord's iguanas on Isla Cabritos. Physical exams were performed on captured iguanas, weights and measurements obtained, and blood was collected for complete blood cell counts, biochemistries, mineral panels, and Vitamin D analysis.

The Indy Zoo team on Isla Cabritos. Left to Right. Back: Richard Searcy, Gerard Garcia, John Wyatt, Jason Williams. Front: Renae Burks, Laura Perdomo, Betsy Stringer.

Animals were bead-tagged and microchipped for future identification. Bead-tagging will allow park guides and future researchers to better monitor the population. In addition, health assessments, blood collection, and microchip placement were performed on 29 captive Ricord's iguanas at ZooDom in Santo Domingo, all but five of which were hatched at ZooDom. The ages of these iguanas ranged from five months to 30+ years old. The data collected from these health assessments are part of a larger study on the population's health.

A nutrition study was also initiated while on Isla Cabritos. Both predetermined and novel food sources were identified and collected with the assistance of our local guide. Fecal samples were collected for dissection, to aid in determining potential food resources through plant part identification. Samples of various food plants were dehydrated in the field using a portable food dehydrator to inhibit nutrient degradation and were subsequently stored for transport back to the U.S. Approximately 13 plant species were theorized to comprise the majority of the iguana's diet at the time of collection. A samples of each has been shipped to a commercial laboratory for determination of dietary metabolites. The data obtained from this research will be utilized for comparison with nutrient information collected from diets fed to captive *Cyclura* in hopes of developing nutrition protocols that more closely predict actual dietary requirements for this species.

The Indianapolis Zoo staff would like to express their thanks to ZooDom, Grupo Jaragua, Lago Enriquillo Guides, Maine Community Foundation, and the American Association of Zoo Veterinarians' Mazuri Fund. Without their assistance and support, this trip would not have been possible. Also, working with the local park guides and Dominican veterinarians remains a critical part of our project; having community and national support is vital to continuing our research. It is important to note that this project supports the IUCN (International Union for Conservation of Nature), the Iguana Specialist Group, and the Ricord's Species Recovery Plan. This trip was a continuation of research started five years ago. The Indianapolis Zoo will continue to send participants into the field in the upcoming years to collect more data for the population survey, biomedical assessment, and nutrition study. It is our hope that work like this will help in the survival of these Critically Endangered iguanas.

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Allen Cays iguana (*Cyclura cychlura inornata*)

Research Update May and July 2008. This year was the 29th year of our studies of the Allen Cays iguanas in the Bahamas and we captured a respectable 422 Allen Cays iguanas during May (289 on Leaf Cay, 85% of them recaptures; 114 on U Cay, 82.5% recaptures; 5 on Allen Cay; and 37 on Flat Rock Reef Cay, 51% recaptures).

Above: Remains of three Allen Cay iguanas that died after being trapped inside plastic drum that washed up on the beach. Photo by Lynne Pieper. Right: Processing gigantic Allen Cay Iguana Allen Cay during May 2008 fieldwork. Photo by Kari Schneider.

We have accumulated nearly 6000 iguana captures in the Allen Cays over the past three decades!

The decline in numbers of large males on the main beach areas of both Leaf and U Cay was again evident this year; annual survivorship rates for large males are less than 70%, well below long-term rates of 88-89%. Iguana sex ratios are becoming increasingly female biased, presumably because of the disappearance of large males. 136 sexable females and 126 sexable males were captured on Leaf Cay, and 67 sexable females and 42 sexable males were captured on U Cay. We believe that this loss of large males on both Leaf and U Cays over the past eight years is attributable to mischievous human activity and we hope to add educational signage in the near future to help curb this trend.

Again this year we recorded the capture location of nearly every iguana. Continuing the recent pattern, most captures were made on the big west beach of Leaf Cay which is the landing/tourist feeding area (only ~2% of the total island area). 68% of the total 2008 captures were on this beach, 56% in 2005, and 47% in 2004. On U Cay, 75% of captures occurred along or immediately adjacent to the north beach where nearly all visitors land - a substantial increase from the 35% rate in 2005. The attraction of the iguanas to the feeding beaches is obvious, and our concern about this pattern is increasing.

We have now recorded a total of 19 iguanas on Allen Cay (including two recent introductions from Leaf Cay) and we are confident that no more than 20 total animals occur on the cay. We have never seen juvenile iguanas on the cay, presumably because of the lack of nesting sites.