

The *Cyclura* of Parque Nacional Isla Cabritos

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If you want to see two species of *Cyclura* in natural habitat simultaneously, your only choice of destinations is the Dominican Republic (DR). The DR shares the island of Hispaniola with the Republic of Haiti; however, the biogeographic boundaries of the island differ substantially from the current political configuration. Two major islands, referred to as the North and South paleoislands, were joined when the

South Island “caught” the North Island after the latter collided with the Bahama Platform. This event probably occurred during the middle of the Tertiary period. Reef limestones were deposited in the former marine channel that separated the two islands. This area is now a barren valley known as the Plaine de Cul-de-Sac in Haiti and the Valle de Neiba in the DR. Much of this valley lies below sea level in the rainshadow of the Sierra de Neiba.

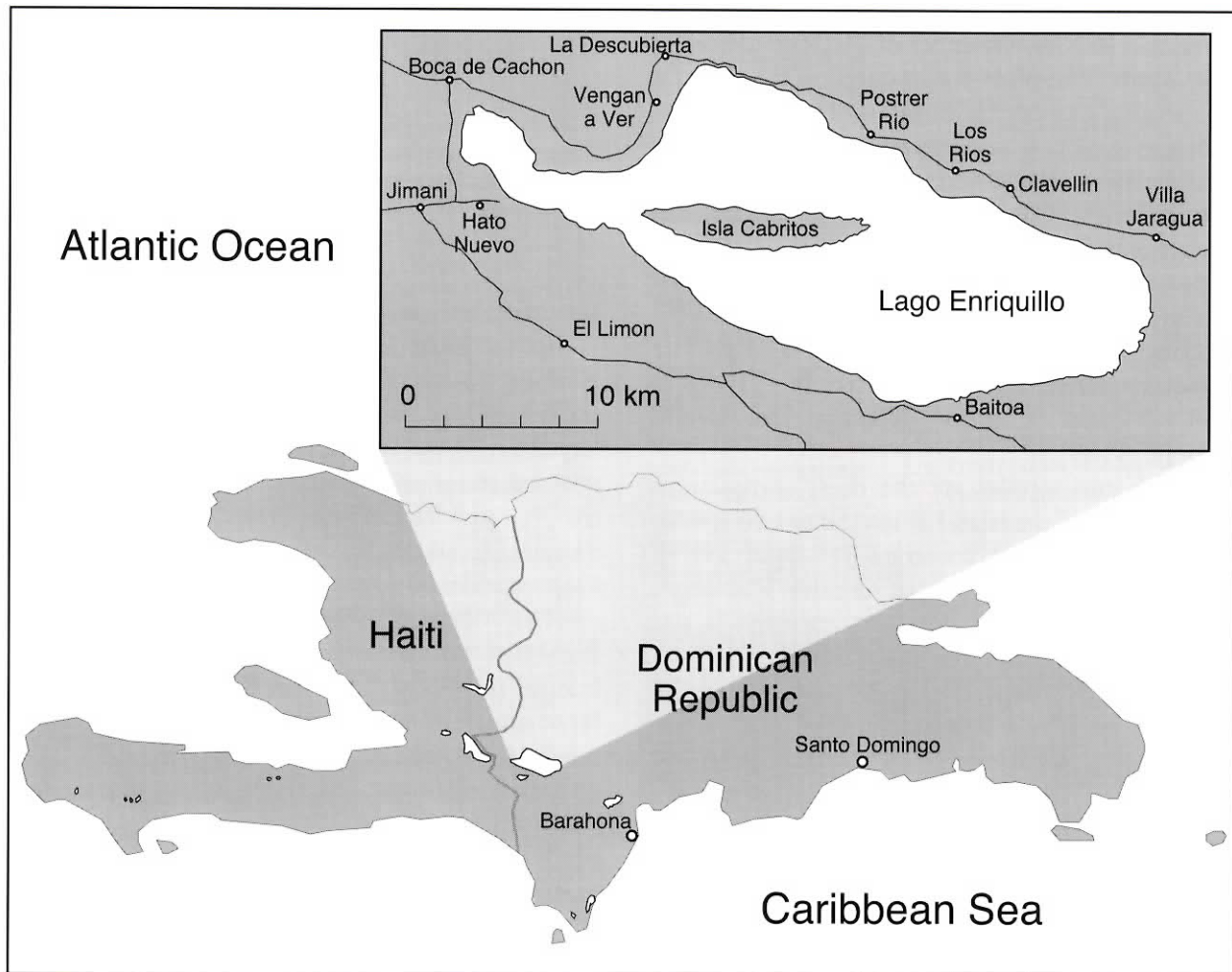


Figure 1. Parque Nacional Isla Cabritos in Lago Enriquillo, Dominican Republic.

Two of the four large lakes that characterize this valley lack outlets to the sea and are saline. Powell et al. (1999) provided a summary of the geological history of Hispaniola, listing pertinent references and documenting the herpetofauna of biogeographic regions, including the Valle de Neiba.

Lago Enriquillo is a hypersaline lake situated 40 m below sea level. It is named after a native-American Taino chieftain who successfully resisted Spanish efforts to enslave the indigenous population during the early colonial period. Annual temperatures in the area average 28 °C (Hoppe, 1989), although daily temperatures often exceed 40 °C during the summer months. Average annual rainfall is only 642 mm, most of which falls during two “rainy seasons,” one in late spring and the other in late summer and early fall (the latter associated with the hurricane season).

A small island (12 × 2.0–2.5 km), Isla Cabritos (Fig. 1), lies in Lago Enriquillo. It was incorporated into the Dominican system of national parks in 1974, and serves as a sanctuary for a flora and fauna that include a number of species endemic to Hispaniola. The plant community on the island is characterized as dry thorn forest (Fig. 2), and just about every plant is equipped to stick, stab, or scratch the unwary hiker. Cacti, including the tree cactuses, Caguey (*Neoabottia paniculata*) and Alpargata (*Opuntia moniliformis*), Cholla (*Opuntia caribaea*), and a tall cactus locally known as Cayuco (*Cereus hexagonus*), fill gaps between scrubby trees. The most common trees are Mesquite (*Prosopis juliflora*), Ziziphus (*Ziziphus rignoni*), and Catalpa (*Catalpa longissima*) (Hoppe, 1989).

Birds and reptiles are the most conspicuous components of the island fauna. Sixty-two species of birds have been recorded (Hoppe, 1989). Hispaniola’s largest flock of Greater Flamingos (*Phoenicopterus ruber*) feed on arthropods and mollusks, and Great Blue Herons (*Ardea herodias*) and Louisiana herons (*Hydranassa unicolor*) fish the shallows. Glossy Ibis (*Plegadis falcinellus*) and Roseate Spoonbills (*Ajaia ajaja*) frequent the shores, and Hispaniolan Palm Crows (*Corvus palmarum*) call raucously while carefully surveying visiting humans in hopes of soliciting (or stealing) a handout. The most famous inhabitants of the island, however, are the large, endangered reptiles, American Crocodiles (*Crocodylus acutus*), Rhinoceros Iguanas (*Cyclura cornuta*), and Ricord’s

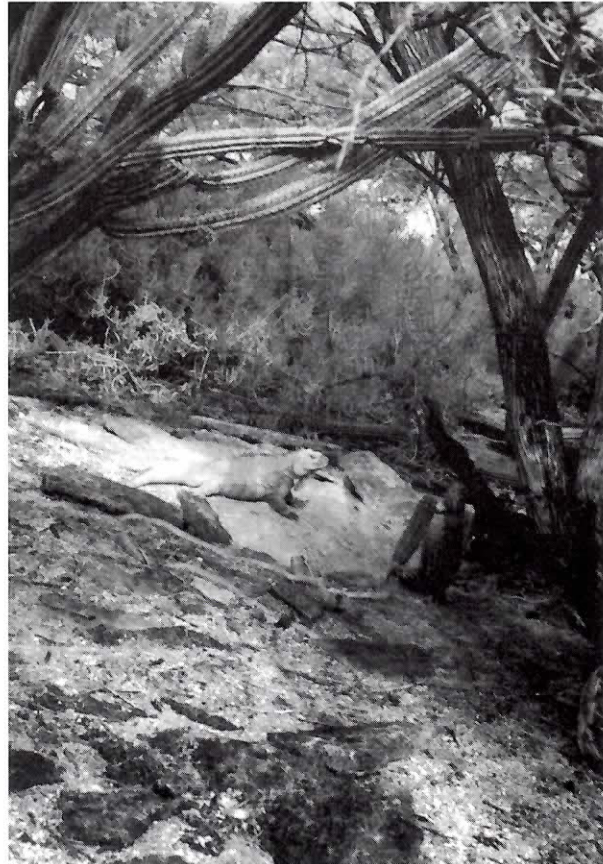


Figure 2. An adult male *Cyclura ricordii* outside its burrow on Isla Cabritos. Notice the characteristic vegetation. Photograph by Kim Schneider.

Iguanas (*Cyclura ricordii*).

In the summer of 1999, we were part of a National Science Foundation-funded undergraduate research program working in the Dominican Republic. In the course of our three-week studies of lizard communities, we made arrangements with the National Park Service (Dirección Nacional de Parques) to take a day off and visit Isla Cabritos to see crocodiles and iguanas in their natural habitat.

On 12 June 1999, we left our base in Barahona before dawn in order to catch an early boat to the island. The boat drivers generally prefer to return by early afternoon before the offshore winds, funneled through the valley from the east, kick up high waves. The morning was cloudy and surprisingly cool, exceedingly pleasant for humans, but less than ideal if you are searching for basking reptiles. Nonetheless, we had high hopes for success — and were almost immediately rewarded. While we were waiting on the dock as the drivers were preparing the boat for our trip, we saw a small

crocodile swimming nearby. Although not visibly disturbed by our presence, it swam away slowly, submerged, and was not seen again.

After an uneventful crossing, we docked on the north side of Isla Cabritos and took a trail that led us to the park station. Cicadas and the ubiquitous crows serenaded us as we wound our way along the path through the prickly vegetation. The ground underfoot was sandy, but often gave way to large areas of darker consolidated rock. Upon close examination, we observed that both rock and sand were composed of coral and shell fragments, relics of the ancient sea life inhabiting the former marine channel. After a short stop at the park station, where a visitor center is soon to reopen, our driver, now in the role of guide, led us toward the south side of the island to a beach where crocodiles frequently bask.

Along the way, our guide took us on a short detour to look for iguanas. Almost instantly, we spotted a large male *Cyclura ricordii* (Figs. 2, 3). Although we had been alerted to watch for iguanas, we were unabashedly amazed by his size and demeanor. We took some pictures, but the ruckus raised by our excited group scared the iguana back into its burrow. A short walk later, we arrived at the beach. Cautioned to remain quiet as the crocodiles are very sensitive to human disturbance, we approached from behind some vegetation along a shoreline dune. Unfortunately, no crocodiles were basking, but a large individual was swimming just off the beach (Fig. 4). Although it continued to swim away, we got a good look through binoculars and snapped some pictures.



Figure 3. An adult male *Cyclura ricordii* outside its burrow on Isla Cabritos. Photograph by Barb Banbury.



Figure 4. An adult *Crocodylus acutus* in Lago Enriquillo off the southern shore of Isla Cabritos. Photograph by Robert Powell.

The range of the American Crocodile includes coastal regions of southeastern North America, Central America, northwestern South America, Cuba, Jamaica, and Hispaniola. The species was once very abundant in Hispaniola, but is now found only at Lago Enriquillo and in the nearby Haitian lake, Etang Saumatre. The depletion of populations has mainly been the result of habitat destruction and hunting. Nest poaching has also affected the crocodile populations (Schubert and Santana, 1996). At Lago Enriquillo, nesting sites are scattered along the main shoreline and along the shores of Isla Cabritos. After hatching, the baby crocodiles, which cannot tolerate the high salinity of the lake, must move from the nesting beaches to fresh water habitat. Crocodile mothers nesting on Isla Cabritos have to carry their babies from the nesting beaches to areas where freshwater springs, called borbollones, empty into the lake. We visited Isla Cabritos at the end of the nesting season and saw an empty nest, littered with egg fragments, on the beach.

On the way back from the beach, we stopped again at the iguana burrow and found that the iguana had re-emerged and was sitting in a small patch of sunlight. This time we were quieter and everyone had a chance to take pictures and admire this beautiful animal for a few minutes.

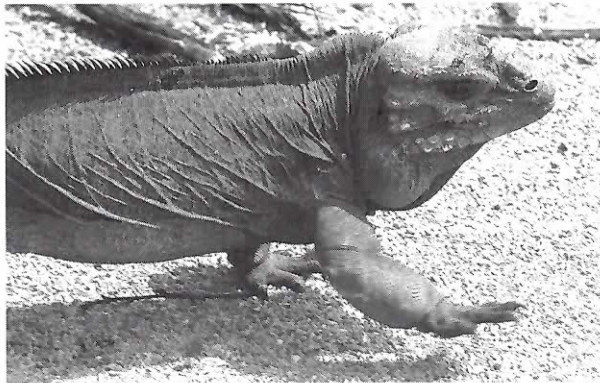
Cyclura ricordii is endemic to Hispaniola, where it can be found in the Valle de Neiba and on the lower Península de Barahona. Although it is common on Isla Cabritos, thanks to the legal protection provided by the island's status as a national park, other populations in Hispaniola are small and declining. These smaller populations on the main island are also genetically isolated from each other, which makes them even more vulnerable to extirpation. Because it is more of a habitat specialist than *C. cornuta*, *C. ricordii* is more susceptible to alterations in its habitat. Other threats include predation by and competition with exotic species and

hunting (J. A. Ottenwalder, pers. comm.). Captive breeding programs were established in the early 1990's at the Indianapolis Zoo and Parque Zoológico Nacional (ZOODOM) in Santo Domingo (Christie, 1996), but these are now inactive due to a lack of animals (W. Christie, pers. comm.). Since the level of success in these programs was low (J. A. Ottenwalder and W. Christie, unpubl. data), better captive husbandry techniques need to be developed. In any case, the breeding programs should be reestablished to help ensure a future for this species. One major threat to *C. ricordii* on Isla Cabritos is nest predation by feral cats. During our visit we did not observe any cats, hopefully a sign that the efforts to eradicate them, part of the IUCN/SSC West Indian Iguana Action Plan, are working.

In the meantime, the weather had cleared and the day was heating up, so we went looking for *Cyclura cornuta*. Our guide led us to a regularly visited burrow. Almost immediately, we saw a female, but she quickly retreated. This burrow was

situated under a limestone ledge, like most of the others we were to see. Ledges or the root systems of trees or bushes provide necessary support for large burrows in sandy soil, which would collapse if not reinforced. While continuing our search, one member of the group spotted a big male (Figs. 5, 6). Unlike the other individuals we had seen previously, he was not at all shy. Instead, he walked directly toward us before apparently losing interest and wandering away. The guide told us that this male, named "Pancho" by the guides, and a few other individuals had grown accustomed to human visitors and their handouts. This might not have been the most natural behavior, but it was an excellent opportunity to get a close look. On the way back to the dock, we saw several more Rhinoceros Iguanas (Figs. 7, 8) and a female *C. ricordii* (Fig. 9), most basking just outside their burrows. As they were less accustomed to visitors than Pancho, we were careful to maintain our distance.

Prior to the early 1950s, *Cyclura cornuta* was very common in the arid areas of Hispaniola, but populations have declined substantially. Even though the preferred habitat of *C. cornuta* is not favorable to human settlements, the introduction of



Figures 5, 6. Adult male *Cyclura cornuta*, named "Pancho" by the local guides. Photographs by Robert Powell.

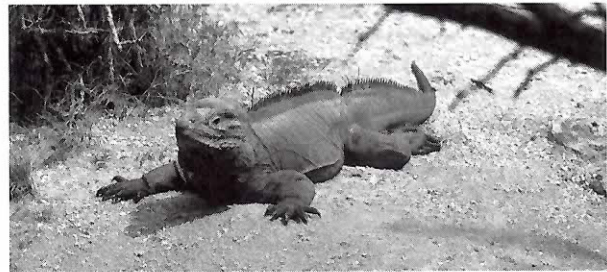


Figure 7. Young female *Cyclura cornuta* basking outside of its burrow on Isla Cabritos. Photograph by Robert Powell.



Figure 8. Male *Cyclura cornuta* courting a prospective lady-friend. Photograph by Robert Powell.

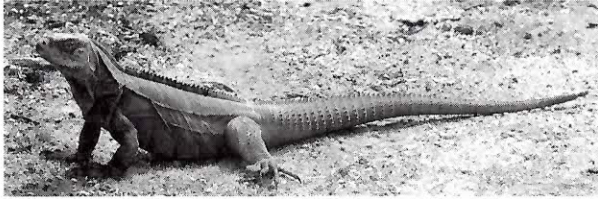


Figure 9. Adult female *Cyclura ricordii* on Isla Cabritos. Photograph by Robert Powell.

exotic animals has increased the competition with and predation on the iguanas. They have also been illegally hunted for food and the pet trade. Because Isla Cabritos is protected, it is one of the few areas where population densities appear to be near what are assumed to be pre-Columbian numbers.

On the boat ride back to the mainland, we stopped by the borbollones to look for more crocodiles. Instead, we got a close look at several flamingoes. One of them took off and flew over our heads (Fig. 10).

When we returned to the mainland, several people were waiting to visit the island. Most were Dominicans, testament to the growing awareness of the unique ecological value of the Lago Enriquillo area. Educational programs presented locally through slide shows and nationally on television illustrate natural communities and feature endangered species. Posters and brochures about the lake and its species are to be distributed throughout the country (Schubert and Santana, 1996). This heightened awareness among Dominicans is critical to the success of any conservation efforts.

Getting to Lago Enriquillo from Santo Domingo requires a 2½–3 hour drive, taking the road toward Barahona, turning right on the road to Neiba and continuing to La Azufrada (Fig. 1). At La Azufrada, you can take one of the commercial boats or one of the Parques boats (RD \$800; approximately US \$51) to the island. Park permits can be acquired at the main office of Dirección Nacional de Parques in Santo Domingo or at La Azufrada. The permits cost RD \$50 (approximately US \$3.50). The closest tourist accommodations are about one hour away in the town of Barahona. However, pensions (around US \$7/night) can be found in the nearby town of La Descubierta along with some small restaurants, the best of which is the “Iguana” restaurant. We encourage you to visit Isla Cabritos. You will have an amazing experience. For more information,



Figure 10. Flamingo flying overhead at Lago Enriquillo. Photograph by Robert Powell.

check <http://www.aguaita.com> (but note that it is in Spanish) or you can contact the Dirección Nacional de Parques directly for more information (fax: 809-472-4012; email: dnp@codetel.net.do).



Literature Cited

- Christie, B. 1996. Taxon management account: Ricord's Iguana, *Cyclura ricordii*. In S. H. Hammack (ed.), *American Zoo and Aquarium Association Lizard Advisory Group, Taxon Management Accounts*, 7 pp. American Zoo and Aquarium Assoc., Fort Worth, Texas.
- Hoppe, J. 1989. *Los Parques Nacionales de la República Dominicana. The National Parks of the Dominican Republic*. Editoria Corripio, Santo Domingo.
- Powell, R., J. A. Ottenwalder, and S. J. Incháustegui. 1999. The Hispaniolan Herpetofauna: Diversity, endemism, and historical perspectives, with comments on Navassa Island. In B. I. Crother (ed.), *Caribbean Amphibians and Reptiles*, pp. 93–168. Academic Press, San Diego, California.
- Schubert, A., and G. Santana. 1996. Conservation of the American Crocodile (*Crocodylus acutus*) in the Dominican Republic. In R. Powell and R. W. Henderson (eds.), *Contributions to West Indian Herpetology: A Tribute to Albert Schwartz*, pp. 425–433. Contributions to Herpetology, vol. 12. Society for the Study of Amphibians and Reptiles, Ithaca, New York.