

IGUANAS ON THE MOVE

The Science of Translocation

STORY & PHOTOS BY LEE PAGNI

I have one hand around the back of an iguana's spiny neck and the other just above its tail. I am kneeling to release it on hot white sand. These reptiles bite, so I let go quickly.

The iguana doesn't move. Time slows as we stare at each other, the iguana not believing it is free of my grasp and me not quite believing I'm close enough to see the bright red sclera of this Turks & Caicos Rock Iguana. Finally, just as I'm about to stimulate it to action, the iguana bolts, scurrying through the sand and into a giant inkberry bush.

Found only in the Turks & Caicos Islands, the Rock Iguana (*Cyclura carinata* – the binomial name referring to the iguana's ringed tail and rough skin) is the Islands' largest native surviving terrestrial vertebrate. It is also, ecologically speaking, one of the most important animals on the Islands. Like the elephants of Africa, these vegetarians play an important role in their environment, dispersing and enhancing the germination of seeds of the native plants they consume. Sadly, like many other island natives, this lizard is in danger of going extinct.

Opposite page (Top): Iguana tracks and tail drags reveal their presence. (Bottom): An adult male near a beach lavender bush eyes the author warily.



Iguana #31 gets a bead tag, which allow researchers to identify and differentiate between the iguanas.

The iguana's existence has been threatened by non-native species.



Iguanas are hard to spot. (See if you can find one in this picture.)



The story of the Turks & Caicos Rock Iguana's decline is unfortunately a common one. Their existence has been threatened by non-native species. Feral dogs and cats introduced by humans have decimated the original iguana population. Feral livestock have overgrazed native plant communities on which iguanas rely for survival and have trampled their burrows and nests. Now, iguanas are only found on the 5% of their original habitat where feral animals haven't been introduced.

I work with a team to help protect the Turks & Caicos Rock Iguana. Protecting a species close to extinction takes more than concern or good intentions. It takes a lot of planning, creativity, patience, and good old-fashioned hard work. In the case of the Turks & Caicos Rock Iguana, it also takes a big boat, some sophisticated equipment, and a whole lot of scientists.

For the past two years, a research and conservation team, led by Dr. Glenn Gerber of the San Diego Zoo, has been working to repopulate the species. In the process they hope to learn more about rock iguanas in order to increase their chances of survival. I joined the team two years ago to assist with developing educational components to the research. We work with the Turks & Caicos National Trust, the Department of Environment and Natural Resources, the National Museum and the National Parks Department to transfer the knowledge gained from the research to both locals and visitors.

The project's main focus is to increase the number of populations of Turks & Caicos Rock Iguanas. The animals are taken from cays with large, but threatened, populations of iguanas and translocated to cays that have good iguana habitat, are free of feral mammals and are protected from development. We move a negligible percentage of the source population but enough to allow for a healthy diversity of individuals to start the new population.

Back on the island, I watch Dr. Gerber insert a small hollow needle through the fatty tissue of one iguana's dorsal crest (a relatively nerveless area

Top left: This rock iguana burrow was dug in the ironshore.

Bottom left: The enlarged scales on the iguana's tail create a ring-like pattern.

much like earlobes on humans). He then pulls a wire with colored beads attached through the crest and secures it. These beads allow researchers to visually identify and differentiate between the iguanas. Each iguana also carries a passive integrated transmitter, or PIT tag, which identifies it with a unique number in case the bead tag is lost.

In early 2002, the iguanas were moved on the project's research vessel (aptly named *Cyclura*, the genus for all rock iguanas) to their new homes. Now, a portion of them are recaptured at regular intervals to check up on their growth, health and reproductive status.

"This is number 57, a small adult male," says Dr. Gerber. "He's gained some weight and by the looks of this new nick in his tail, he's probably been scrapping with number 4, the big boy." These comments and others observations about who is beating up on whom, who is growing like a weed or who is mating with whom are common among the researchers and belie a familial-like interest in the iguanas. During each checkup, we also draw a small amount of blood from the iguanas. The blood is chemically analyzed to determine the animal's level of stress, which reveals how healthy the animal is, and to test for blood parasites.

By 5 PM, Dr. Gerber is on his knees digging in the sand. His right arm has disappeared up to his elbow into a small tunnel. It is June, the month when females lay between two and nine eggs in a nest burrow just under the sand surface. When he's fairly positive that it is a nest burrow, he places a data-logger in the tunnel leading to the burrow. The data-logger is a small device that records environmental variables such as temperature and humidity in the vicinity of the nest burrow. Dr. Gerber will compare the number of offspring hatched to environmental data to determine how temperature and humidity affect hatching rates. Dr. Gerber will also retrieve genetic material from the hatchlings' eggshells. This will allow him to determine who the parents are.

Eventually, Dr. Gerber will know how much each iguana has grown, which iguanas have mated and how many offspring they have, what food plants were available for the iguanas and which food plants they chose to eat, and where the iguanas traveled and burrowed. By making similar investigations of the source population of iguanas, Dr. Gerber will compare the two populations and study their differences. In this way, Dr. Gerber will be able to determine what types of environmental factors are important to iguana breeding, which will help future reintroduction efforts.

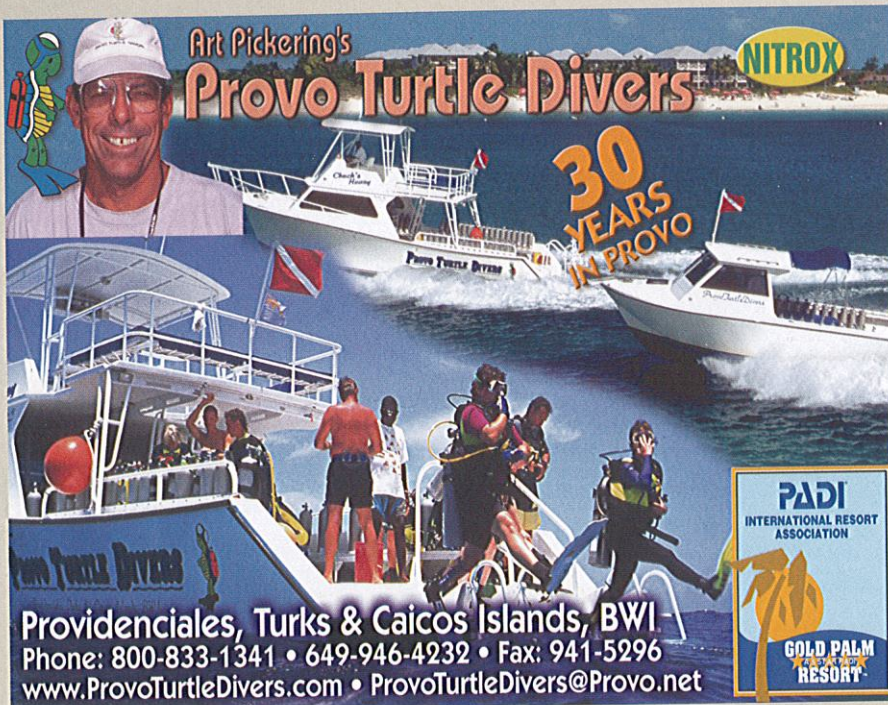
Through their work, the zoo researchers and their collaborators hope to inspire island residents and visitors to



Top: Iguana #16 basks in the sun. The paint marking helps researchers know which animals have already been captured. It comes off when the iguana sheds.

Middle: Dr. Gerber prepares to mark a possible nest burrow.

Bottom: A head shot of iguana #5. Note the seed stuck to the outside of his mouth.



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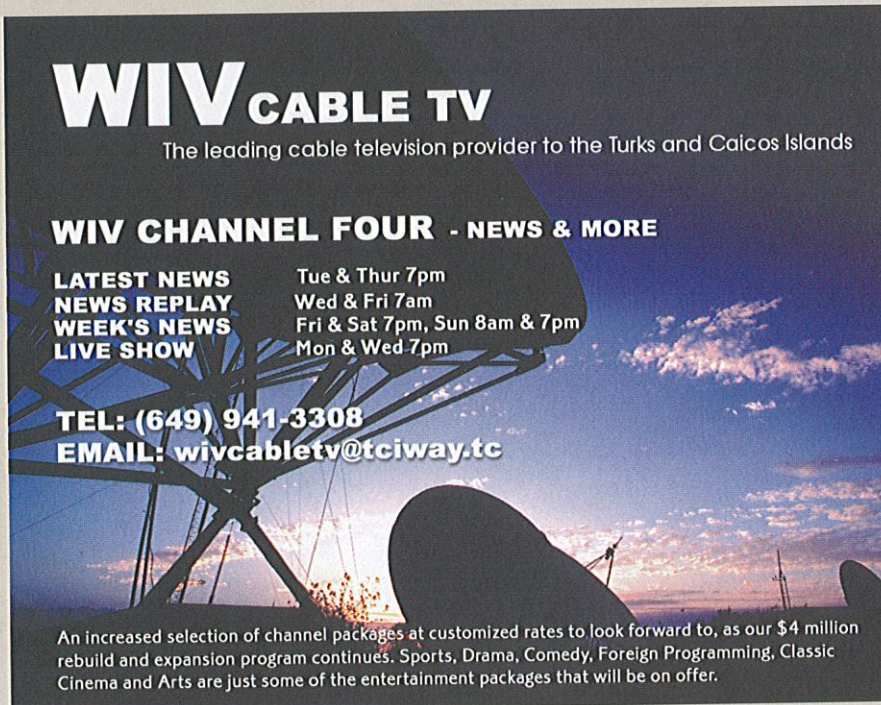
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help protect the rock iguana and its habitat. These simple actions include keeping pets off of islands where iguanas live, politically supporting the protection of more iguana habitat, and obeying the regulations designed to protect the iguanas.

After a long day of capturing iguanas under the sweltering Caribbean sun I lie in my bunk bed on the *Cyclura*. I think about the animals we've caught today. The majority have gained weight since their last checkup three months ago. Some have wounds from territorial fighting. Others show signs of breeding. The process of reintroduction has two faces. We are reintroducing these iguanas, allowing the native landscape to become reacquainted them. Concurrently, we become more acquainted with the iguanas – their growth, their habits, and the intricacies of their lives. While we shape the iguanas' lives they shape ours. It is this interaction that constantly renews my sense of hope for these endangered iguanas. ☺



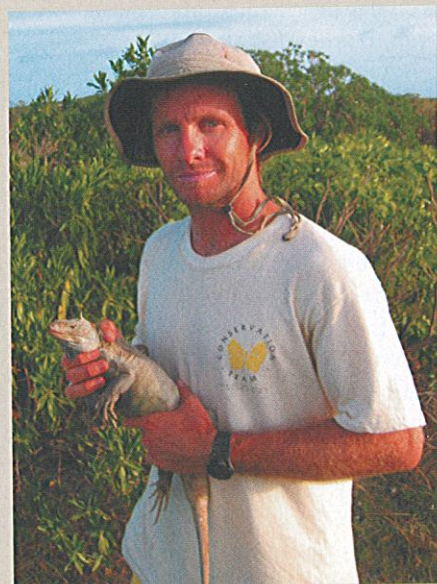
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Lee Pagni (above) is an international conservation education consultant. He works with communities to promote environmental awareness and stewardship.

Glenn Gerber is a Millennium Post-Doctoral Fellow at the Center for Reproduction of Endangered Species, Zoological Society of San Diego. He has studied iguanas throughout the West Indies for the past decade.

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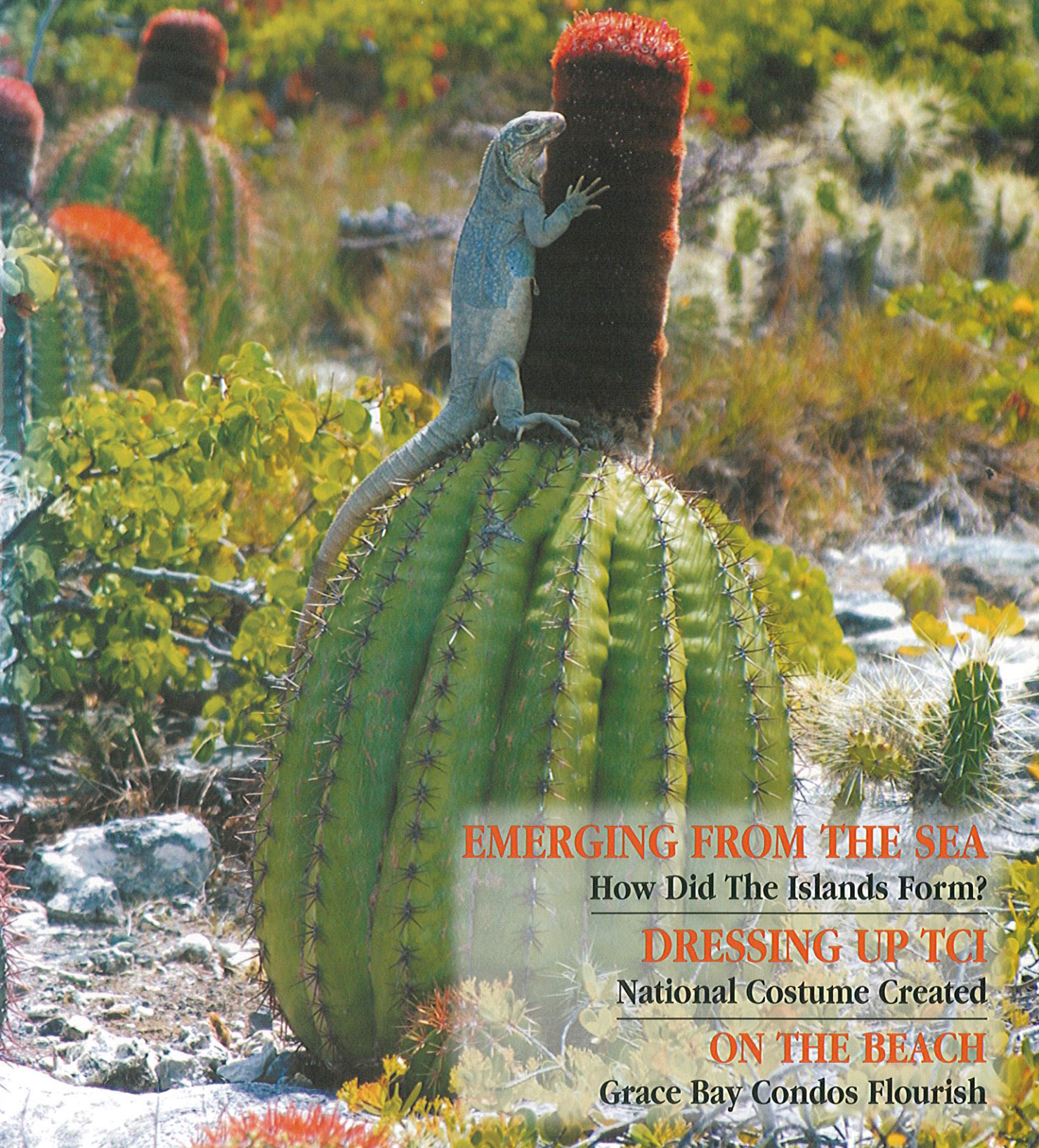
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