

Tides of time



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The beach at Nosara,
in Guanacaste province.

The Area de Conservación Guanacaste in northwestern Costa Rica includes open marine zones, Pacific beaches where turtles nest, dry-forest ecosystems, Caribbean lowland forests and volcanic mountain ranges

PEOPLE | María Marta Chavarría, biologist for the research program at the Area de Conservación Guanacaste

To promote conservation, a biologist gives local people direct experience with the sea

With four ecosystems, three volcanoes and 37 diverse wetlands within its borders, the Area de Conservación Guanacaste in northwestern Costa Rica lives up to the country's reputation as having one of the greatest concentrations of biodiversity on earth. Approximately 230,000 species can be found here, roughly 65 percent of the estimated total number in Costa Rica. The terrestrial part of the conservation area covers 1,200 square kilometers (about 460 square miles), encompassing dry, rain and cloud forests. The marine area covers 700 square kilometers and is host to a number of endangered species, including 250,000 turtles during mating season.

María Marta Chavarría, site manager at Guanacaste and a biologist by training, says she views her terrestrial and marine responsibilities as if they were children of different ages. "The terrestrial is like a teenager; you know if he or she is doing well," she explains. "But our marine area is like a child going to kindergarten. They are just starting out; they can't do it on their own. We need to take care of them more."

Chavarría's earliest professional experience at Guanacaste was devoted to her "teenagers," educating local residents about the rich plant life found in the park. To do so, she visited each ecosystem to identify the flora personally.

Access to one remote region was most easily done by sea through a marine-protected area of the Murciélagos archipelago. When she went there, she was shocked to find it full of boats and fishermen. "I was in a protected area," she says, "and everyone was taking out whatever they wanted — shells, snails, sharks, whatever you can imagine."

This was 1996, and the Guanacaste area had not yet been inscribed on the World Heritage List (that happened in 1999). The overfishing had begun a few years earlier, when traditional fishing sites had become depleted.

Chavarría realized that education about the marine environment would become a major focus for her as a site manager, given the interdependence of offshore



María Marta Chavarría.

reef and coastal ecosystems. She encourages professors and students from the university to come to Guanacaste and undertake research projects. Since neither the park nor the university has a budget for this, Chavarría provides transportation when she can, and offers to cook for them. "Sometimes I arrange for special ingredients for a very nice meal, so the stomach could be like bait," she says, laughing.

Another way she encourages interest in marine protection is by bringing people into direct contact with the ocean. Strange as it seems for a country surrounded by the Caribbean on one side and the Pacific on the other, Costa Rica does not have what she calls "an ocean tradition." Locals are often afraid of getting into the water, she says, including fishermen who do not know how to swim. So she invites fishermen, teachers and members of the community, no more than 14 at a time, on short snorkeling trips. She equips them with life jackets, masks and snorkels, and everyone jumps in the water.

The underwater experience is brief, but transformational. Seeing coral reefs, schools of fish, perhaps a whale swimming nearby with a newborn calf, makes a huge difference in the way participants think about the sea. "Afterward they say, 'How can I support you?' And they really want to do something," says Chavarría.

Support from the local community is a top priority for Chavarría. "Maybe I am a dreamer," she says, "but I think the first people who should help us take care of this area are our neighbors."

Working together, says Chavarría, the community can develop new livelihoods in tourism that will be sustainable for all the residents of Guanacaste. That doesn't mean building huge luxury resorts right on the beach, but implementing a feasible plan for long-term tourism development. At present, Chavarría and her team are looking for funds to establish a formal training program for local guides.

World Heritage status is a plus, Chavarría adds. "World Heritage gives you status in discussions about conservation. It helps a lot." C.F.

About World Heritage

The aim of the World Heritage Convention, adopted by Unesco members in 1972, is "to encourage the identification, protection and preservation of cultural and natural heritage around the world considered to be of outstanding universal value to humanity." "Tides of Time" is a partnership among Jaeger-LeCoultre, Unesco's World Heritage Centre and the International Herald Tribune. The series presents some of the people who are helping preserve marine sites on the World Heritage List. To see videos about World Heritage marine sites, visit the "Tides of Time" archive at whc.unesco.org/tidesoftime

DERMOT CONLAN / PPSOP / CORBIS

An artistic tribute to an exceptional marine site

Every club has its privileges, but few clubs offer the kind of rare opportunity recently available to members of LeClub by Jaeger-LeCoultre. Since 2006, Jaeger-LeCoultre owners and fans have been able to join LeClub by registering on the watchmaker's Web site. These aficionados of fine watchmaking participated in an exclusive contest from June 27 to July 14: members were invited to submit a design to be engraved on the back of a Grande Reverso Ultra Thin Tribute to 1931 in steel.

Originally designed for polo players, Reversos have a reversible case that can be turned around to protect the crystal; today, this feature is used for personalization of the watch.

The theme of the design was the Lagoons of New Caledonia, a marine World Heritage site. The site encompasses one of the largest reef systems in the world — second only to the Great Barrier Reef of

Australia — and includes six lagoons with great species diversity, including endangered dugongs, the green sea turtle and 23 endemic bird species.

So it is not surprising that the winning concept incorporated this biodiversity into its design. The winner, chosen by jury, proposed to engrave on the back of the watch 12 animals found in the Lagoons of New Caledonia, each one corresponding to one of the 12 numbers representing hours. "For nature to thrive," commented the designer, "every organism in the intricate web of the ecosystem must perform its part to perfection. Likewise, every part of a complicated movement, with a hundred or more pieces, must carry out its function seamlessly to ensure the proper operation of the movement."

The winner is now the owner of a Reverso Grande Taille watch in stainless steel engraved with initials. C.F.

GUANACASTE CONSERVATION AREA | Rich flora and fauna

Great biodiversity in the land bridge between North and South America

Tucked up in the northwest corner of Costa Rica, Guanacaste province is unlike any other part of Central America. In its sprawling grasslands, *sabañero* cowboys herd cattle against a backdrop of smoldering volcanoes and the deep blue Pacific. The highlands are smothered in lush jungle, and the lowlands' dry tropical forest flows down to a coast rich in both scenery and wildlife.

Much of this wilderness is protected within the confines of the Unesco World Heritage site called the Area de Conservación Guanacaste. It was originally three national parks, two wildlife refuges, a very large forest reserve and about 500 square kilometers, or 193 square miles, of private land purchased for incorporation into the area.

What makes the park area unique, says María Marta Chavarría, a biologist with the reserve's research program, is an array of contiguous ecosystems, "from the Caribbean lowlands, then to the cloud forests up on the mountains, all the way to the very dry forest. And then we have all the marine protected area down in the Pacific. We are in a biological strategic area — this little narrow bridge between North America and South America."

The marine portion falls within the sprawling Santa Rosa National Park, in particular the rugged Santa Elena Peninsula and its offshore islands, where habitats include beaches, mangroves, underwater reefs, rocky outcrops, sand dunes, coastal forests, a unique freshwater swamp and a huge area of open water that extends about 20 kilometers, or approximately 12 miles, into Papagayo Gulf.

A northern version of the Galápagos, the area is a reminder of the days when the entire western shore of Central America was equally rich in flora and fauna. "The Pacific marine area along the Guanacaste coast is unique in both its biology and its relatively undamaged nature," declared the area's application for World Heritage status, "thereby meriting conservation in its own right, irrespective of the terrestrial adjacent sites."

The peninsula's beaches, in particular Naranjo and Nancite, are a major breeding ground for olive ridley, green, leatherback and hawksbill turtles. From August to December, the breeding and mating season, a quarter of a million turtles nest along the shores.

Coastal mangroves harbor saltwater

crocodiles, iguanas and indigenous bird species like the mangrove hummingbird. The park's Murciélagos archipelago is a significant seabird rookery, while the offshore waters are a spawning ground for many different kinds of fish. Among the larger marine creatures that frequent the area are tiger sharks, bull sharks and migrating whales.

Santa Elena is the remnant of an oceanic island that formed an estimated 85 million years ago, long before the rest of Central America took shape. As a result, the peninsula is well endowed with plants that are highly specialized to survive in the dry and ancient soil derived from serpentine rock. Many of these plants are endemic.

Owing to its remoteness and arid nature, the area is remarkably pristine — and

becoming more so since protection began in the 1970s. The last of the villages and farms inside the park boundaries were relocated more than 30 years ago. But that doesn't mean that interaction with humans is over. Chavarría says the biggest challenge currently facing the park is confronting and educating people who seek to exploit its marine resources.

"The most important ones are the fishermen and the families of the fishermen that live really close to the marine protected area," says Chavarría. "They should understand how their activities impact the place. And they should understand more about the biology, all the problems, climate change, and how the impact will be minimized if they work better, if they understand." J.R.Y.

Tides of Time: Guanacaste Conservation Area was produced by the IHT Creative Solutions department and did not involve the newspaper's reporting or editorial departments. It is the 29th in a series on Unesco's World Heritage marine sites. The next installment, about Glacier Bay National Park and Preserve in Alaska, will be published Nov. 4. Text by CLAUDIA FLISI and JOSEPH R. YOGERT. For information on the IHT Creative Solutions program: www.nytimesglobal.com



Tides of Time



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