

# Changing the Future for Colombia's Sea Turtles

By Juan M. Rguez-Baron, Diego Amorocho, Luz Elvira Angarita, Efraín Ballesteros Garcés, Lilian Barreto-Sánchez, Karla G. Barrientos-Muñoz, Héctor Barrios-Garrido, Jorge Bernal-Gutiérrez, Amalia M. Cano-Castaño, Juan Castellanos, Claudia P. Ceballos, Luis Chasqui, Aureliano Córdoba, María C. Diazgranados, Diego Duque, Rebeca Franke-Ante, Aminta Jáuregui, Gustavo A. Lara, Héctor Martínez-Viloria, Alvaro Moreno-Munar, Leison Palma García, Vanessa Paredes, Juan Patiño-Martínez, Emigdio Pertuz Buendía, Carlos Pinzón, Julieth A. Prieto, Cristian Ramírez-Gallego, Tito Rodríguez, José Vicente Rodríguez-Mahecha, Jhovany Rosado, Patricia Saldaña, Nestor Sánchez, Diana Tarazona, Rafael Vieira, Carlos A. Zuluaga, and Roderic B. Mast

## A HISTORY OF ABUNDANCE AND DECLINE

Spanish chroniclers nearly half a millennium ago spoke of an abundance of sea turtles in what is now the northern coast of Colombia, where nesting turtles were taken by native peoples for food, ornaments, and superstitious rites. The remains of sea turtles are still being unearthed by archaeologists alongside human remains, making it clear that they have always played an important role in the lives of people there.

Since the 1950s, scientists have noted drastic declines in Colombia's sea turtles. Authors Nicéforo María, Federico Medem, Archie Carr, Larry Ogren, C. Tufts, E. Ramírez, Reinhard Kaufmann, and Jorge Hernández-Camacho were among the first to warn about the dire situation. In a study conducted in the mid-1980s to measure the socioeconomic value of sea turtles along Colombia's Caribbean coast, Roderic Mast reported commonly hearing the phrase "Tortuga vista es tortuga muerta" (a turtle we see is a turtle that dies) from fishermen and villagers, who prized the turtles for their eggs, meat, oil, and shell. Up until the early 1990s, it was common to find sea turtle on the menus of restaurants, and a sea turtle slaughterhouse operated in Riohacha, where the infamous Doña Fefa sold green turtle meat, oil, and *chicharrón* (deep fried fat) to individuals, markets, and restaurants up and down the coast. Hawksbills were also widely harvested for their shell, which was used for jewelry, trinkets, and even furniture. In addition to direct capture, turtles were—and still are—caught incidentally by fishers. The Colombian National Natural Parks Service (locally referred to as *Parques*) estimates that an average of 129 turtles were caught annually just in the Corales del Rosario and San Bernardo National Natural Park from 1998 to 2003.

Loggerheads in the coastal states of Magdalena and Guajira have been especially hard hit. In the 1970s, Reinhard Kaufmann estimated that about 200 females nested on those beaches each year. By 1997, a study done by Wider Caribbean Sea Turtle Conservation Network (WIDECAST) Colombia, Parques, and the Palomino Fishermen Association counted as few as 25 nests in the same area, representing fewer than 10 nesting females. And later, the Sea Turtle and Marine Mammal Conservation Program (ProCTMM) observed an average of only five loggerhead nests annually from 2014 to 2018. The 1997

study also showed only eight nesting leatherbacks and three hawksbills, a distinct drop from numbers reported in the 1970s. Moreover, green turtles, which once nested in all seven Colombian coastal departments (states), now nest in only three and have the lowest nesting density of any species in Caribbean Colombia. By the early 2000s, the Marine and Coastal Research Institute (INVEMAR) had generated maps showing all known and historic nesting beaches and at-sea turtle sightings on the Caribbean and Pacific coast of Colombia, and these declines became empirically clear.

## THE TIDE TURNS FOR SEA TURTLES

Despite centuries of pressure, four sea turtle species still thrive in Colombia's Caribbean waters and nest on the country's 1,626 kilometers (1,010 miles) of continental coasts and on adjacent islands: leatherback (known locally as *caná*, in reference to the deep canals between the carapace keels); hawksbill (called *carey*); green (*verde* or *blanca*); and loggerhead (*gogó*). All these species have been protected by law since the 1960s.

Today, many coastal residents whose parents or grandparents once may have killed "every turtle they saw" now actively protect nests, adults, and hatchlings in an unprecedented generational turnaround in attitudes and behaviors. Moreover, the use and commercialization of turtles in Colombia is far more controlled than it was just a few decades ago. Doña Fefa and her slaughterhouse have both passed on, sea turtle meat is seldom seen on restaurant menus, and trade in hawksbill shell has significantly dropped off thanks to decades of work done by Parques and many other institutions, including the Iniciativa Carey (Hawksbill Initiative), a program led by the World Wide Fund for Nature (WWF) and the Fundación Tortugas del Mar (Marine Turtle Foundation). Moreover, public aquariums serve an important role in the study of sea turtles in captivity, including the Research, Education, and Recreation Center (Centro de Investigación, Educación y Recreación, or CEINER), Mundo Marino at the Jorge Tadeo Lozano University, and the Rodadero Aquarium in Santa Marta. Parques monitors beaches and feeding grounds, enforces protection, and oversees broad education and outreach programs in nine federally protected areas that ensure critical habitat for sea turtles.

The Caribbean coast and surrounding islands also host important feeding grounds for green turtles in places such as the Guajira Peninsula and the San Bernardo Archipelago. Hawksbill nesting is sparse but widespread on dozens of Colombian beaches, and protected beaches in the Gulf of Darién form the core of what is considered the fourth-largest leatherback nesting population in the world. The San Bernardo Islands and coastal areas eastward to Cartagena and beyond have numerous active community-based groups dedicated to sea turtle protection. And all four sea turtle species found from Santa Marta eastward to Venezuela have conservation initiatives led by enthusiastic university students, government employees, ecotourism businesses, indigenous communities, and even the military.

## TOP-DOWN AND BOTTOM-UP CONSERVATION

Like politics, virtually all conservation is local. Yet for decades, sea turtle research and protection in Colombia were overseen by national and departmental agencies in capital cities, whose policies, programs, and support did not always reach the field. Most of Colombia's sea turtle nesting beaches are in remote areas that are regularly accessed only by local fishers, farmers, and indigenous people, and many of these residents have also shifted from being poachers to conservation leaders in the past generation. Colombian citizens are now taking charge of conservation at the local level, working hand-in-hand with national agencies such as Parques and Minambiente (the Ministry of Environment and Sustainable Development), as well as seven autonomous regional corporations, including those of La Guajira (Corpoguajira), Urabá (Corpourabá), and Magdalena (Corpamag).

In Caribbean Colombia's extreme west, where leatherback research in the Gulf of Darién was led by Bogotá-based agencies in the 1980s, conservation is now overseen by local residents and nongovernmental organizations (NGOs); community councils including Cocomasur, Cocomaseco, and Cocomanorte; and the Darién and Mamá Basilia Foundations. Experts from the latter monitor Colombia's most important leatherback beach, La Playona, and lead education and tourism activities with help from Parques. On the opposite side of the Gulf of Darién, in the Regional Integrated Management District of Ensenada de Río Negro, a group of enthusiastic farmers, Acaetur, monitors Bobalito Beach and other nearby sea turtle nesting sites. This community-based group works alongside Corpourabá and the NGO Fundación Conservación Ambiente Colombia (the Colombia Environment Conservation Foundation).

In the Corales del Rosario and San Bernardo National Natural Park, patrolling and outreach led by an engaged fisherman, Bernardo Medrano, with support from CEINER, have significantly advanced a dialogue about sea turtle conservation among the region's fishers that has resulted in greater egg protection and nest oversight for hawksbills. This effort has also provided environmental education for youth that is motivating permanent interest in turtle protection and conservation.

Continuing eastward, between Barranquilla and Santa Marta, the Acepex Association has rescued and released more than 50 hawksbill and green turtles in the towns of Tasajera, Pueblo Viejo, and Ciénaga. And at the foot of the Sierra Nevada de Santa Marta, Colombia's highest mountain range, monitoring of sea turtle nesting beaches has been led by several groups, including the Fundación

Tortugas Marinas de Santa Marta, WIDECAST Colombia, and ProCTMM, all of which have worked effectively alongside Corpamag and a local fishers' association. Similarly, in Dibulla and La Punta de los Remedios, fishers from the Asopamudi Association now voluntarily release sea turtles caught in their gillnets, while further to the east, another NGO, Campesina, has done similar work since 2015 in collaboration with ProCTMM and Corpoguajira.

The Guajira Peninsula, located in the far northeastern portion of the country, is also inhabited by the indigenous Wayuu people, whose ancestral territory overlaps the border between Colombia and Venezuela. Since 2009, members of this community, together with Conservation International–Colombia, Corpoguajira, and the international coal company Cerrejón, have participated in an effort to curtail turtle exploitation by helping the Wayuu to develop income alternatives through ecotourism and the sale of native products.

## COMMITMENTS FOR THE FUTURE OF COLOMBIA'S SEA TURTLES

Over the years, Colombian government agencies, NGOs, and universities have dedicated significant resources in sea turtle research. They are also investing in the training of a new generation of scientists who will be adept at understanding genetics, climate change, hatchling sex ratios, foraging area delineation, and an array of tools and techniques for effective marine turtle conservation. Many of these groups and individuals have actively partnered with SWOT to gather, update, and publish information on the biogeography of Colombia's sea turtles (*SWOT Report*, vol. XI, pp. 14–27), and several have received SWOT small grants since 2006.

The National Program for the Conservation of Marine and Continental Turtles (2002) and the National Plan for Migratory Species (2009) emphasize the need to produce up-to-date, accurate, and comprehensive data on sea turtles and to implement a system of data management and data sharing. In response to this need, Minambiente formed the National Working Group on Sea Turtles in 2017.

In December 2018, a meeting organized by SWOT and the JUSTSEA Foundation was held among a variety of interested parties and organizations at the Fifth Colombian Zoology Congress to discuss a path forward for Colombian sea turtle conservation. The main achievement of the meeting was an agreement among Minambiente, INVEMAR, and SWOT to pursue a platform for the standardization and sharing of Colombian data that can better conserve sea turtles. If all goes as planned, in early 2020 a joint Framework Agreement for Cooperation (Convenio Marco de Cooperación) will be ratified by Minambiente, INVEMAR, and the Oceanic Society—as the legal representative of SWOT—to promote a series of national and regional efforts that aim to establish a standardized sea turtle monitoring program for Colombia. This program will include all the relevant national actors in the gathering of data for sea turtle conservation planning and monitoring, and it will ensure that these data serve not only Colombia's conservation efforts, but also the efforts of other regional and global-scale sea turtle conservation programs.

All of Colombia's sea turtle researchers, conservationists, and enthusiasts see a brighter future for sea turtles and fervently hope that this new program will blossom, grow, and serve as an example to other countries that are equally passionate and committed to ensuring that sea turtles continue to thrive in healthy oceans everywhere. •