

Cabo Verde

Sea Turtles “In Abundance”

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Situated approximately 600 km (373 mi) off the western coast of mainland Africa, the nation of Cabo Verde is a volcanic archipelago composed of 10 islands and several islets encompassing 4,033 sq km (1,557 sq mi) of land and 35,963 sq km (13,885 sq mi) of maritime territory. First discovered in 1456 and subsequently colonized by the Portuguese, the country became known for its role in the slave trade throughout the 16th and 17th centuries; it served as a stopover for ships traveling between Africa, the Americas, and Europe. The Venetian merchant Alvise da Cadamosto first reported the presence of sea turtles in Cabo Verde in 1460, noting that they occurred “in abundance.”

Of the five species of sea turtles found there, the loggerhead is the only one that regularly nests in the archipelago, along with sporadic nesting of greens and olive ridleys. Records indicate that green turtles were once Cabo Verde’s most abundant nesters, specifically on the island of Boa Vista, though these may have been misidentified loggerheads. Juvenile greens that nest elsewhere in the Atlantic are indeed abundant year-round foragers in local waters, and leatherbacks, locally called “strongby,” can also be found in deeper waters. Leatherbacks have historically nested in Cabo Verde, though the last known nest on Santiago island was documented in a 1997 photograph.

Sea turtles have been protected by law in Cabo Verde since 1987, but they were initially protected only on beaches and during nesting season. Over time, new decrees protecting all sea turtles were approved, though those laws remained weak and unenforced for almost 40 years. Year-round protections were enacted in 2018, including prohibitions on possessing sea turtle meat and products as well as habitat and nesting site protections, with strong penalties for those who violate the laws.

The plight of Cabo Verde’s sea turtles was brought to global attention in a 2000 paper authored by Dr. Luis Felipe López Jurado; it marked the start of the country’s modern sea turtle conservation efforts. Soon thereafter, Dr. Sonia Merino, who is another Cabo Verdean biologist and is from the National Institute for the Development of Fisheries, led the first community-based

sea turtle conservation initiative in fishing communities of the island of São Vicente. In 2003, Dr. Jurado established Cabo Verde Natura 2000 on the island of Boa Vista—the country’s first sea turtle conservation nongovernmental organization (NGO). It was followed by the emergence of several other NGOs and community-based sea turtle conservation efforts across the archipelago. Importantly, Cabo Verde’s National Environment Directorate (Direção Nacional do Ambiente), in coordination with island councils, led a number of important national awareness campaigns. Sónia Araújo (the agency’s sea turtle campaign coordinator) spearheaded those hugely successful efforts, which brought global attention to the plight of Cabo Verde’s sea turtles.

Today, each of Cabo Verde’s islands has at least one NGO or community group working to conserve loggerheads. Boa Vista’s Fundação Tartaruga Cabo Verde, BIOS Cabo Verde (BIOS.CV), and the Varandinha Community Association work with Cabo Verde Natura 2000 to protect the country’s main nesting loggerhead rookery, which comprises 60–70 percent of Cabo Verde’s sea turtle nesting population. The second-largest rookery is on Sal Island, where Projeto Biodiversidade operates, followed by the rookery on Maio Island, which is monitored by Fundação Maio Biodiversidade. Santa Luzia, the only uninhabited island of the archipelago, supports the fourth-largest nesting aggregation, which is monitored by Biosfera I.

Other islands that host smaller nesting populations and sea turtle projects are (a) São Nicolau, monitored by the Associação

de Biólogos e Investigadores de Cabo Verde; (b) Santo Antão, where TerriMar and the community of Cruzinha work together to monitor sea turtles; (c) São Vicente, monitored by the Marine Research Institute (Instituto do Mar); (d) the islets of Rombo and Fogo island, monitored by Projecto Vitó; (e) Santiago, the country’s largest and most populous island, monitored by the organizations Lantuna, Associação Ambiental Caretta Caretta, and Flora and Fauna de São Francisco working together with the National Directorate of Environment; and (f) the small and steep island of Brava, monitored by Biflores (though sea turtle nesting is rare at this location).

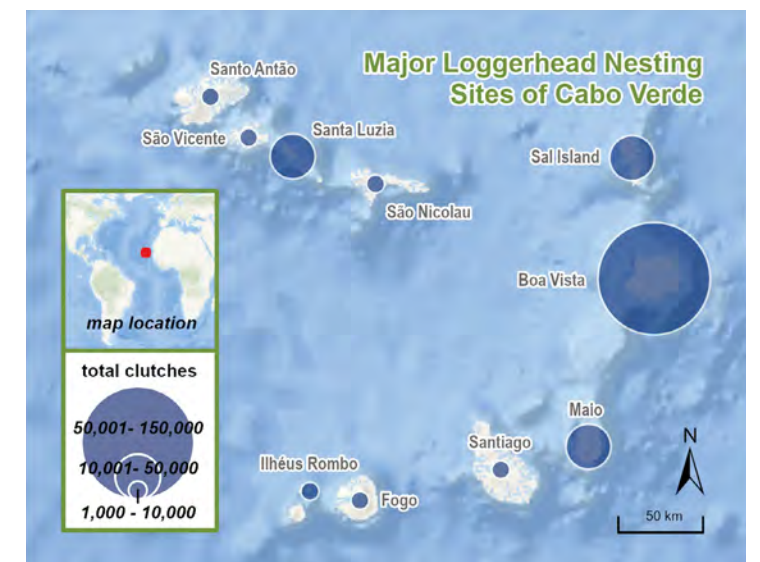
The expansion of sea turtle conservation initiatives around Cabo Verde came in parallel with the birth of TAOLA, Cabo Verde’s national network for sea turtle conservation. The name TAOLA came from the Creole words *tartaruga crioula* (Creole turtle). This network has been supported and promoted by the Marine Turtle Conservation Fund of the U.S. Fish and Wildlife Service since 2009, when Dr. Manjula Tiwari brought together representatives of all the aforementioned entities involved in Cabo Verde’s sea turtle conservation efforts. Since then, TAOLA has met annually to achieve national milestones, including standardized data collection protocols, awareness campaigns, social research, and training, as well as preparation of the first national overview of Cabo Verde’s sea turtle abundance. But, unquestionably, TAOLA’s greatest achievement to date has been the 2018 governmental approval of a new decree to protect sea turtles in Cabo Verde.

Many research projects are also under way throughout Cabo Verde, some of which have sparked new local initiatives and helped to build a better understanding of the North East Atlantic loggerhead subpopulation. Research groups and universities (such as the Estación Biológica de Doñana—Consejo Superior de Investigaciones Científicas in Spain, Queen Mary University of London, the University of Cabo Verde, and Universidad de las Palmas de Gran Canaria, among others) have supported local NGOs and the Cabo Verde government.

Tracking of male and female loggerheads has revealed migration patterns between nesting seasons to the West African coast between Senegal and Sierra Leone. Other telemetry studies have shed light on the distribution and movements of females during the nesting season. Moreover, the use of drones has helped to document the abundance of both female and male loggerheads in the archipelago.

A nationwide genetic sampling initiative launched in 2010 revealed the complex genetic makeup of the Cabo Verde loggerhead population, thereby underscoring the importance of conserving all of the country’s nesting aggregations. Those findings added to the previous recognition of Cabo Verde’s loggerheads as a genetically unique population, which is considered a distinct regional management unit by the IUCN-SSC Marine Turtle Specialist Group. In recent years, research has focused on understanding hatchling sex ratios in relation to increasing incubation temperatures and their potential implications for conservation practices such as the use of hatcheries, which is a common tool on some islands.

Persistent threats such as poaching and coastal development continue to drive the need for loggerhead conservation in Cabo Verde. The killing of sea turtles for the consumption of their meat, organs, fat, blood, and eggs has been recorded since the discovery of the country, and documented historical use is associated with the belief that



Map showing major loggerhead nesting sites in Cabo Verde. Data are presented by island and may consist of multiple nesting beaches per island. For complete data sources, see p. 54.

consuming sea turtle products can cure ailments such as yellow fever, leprosy, and syphilis.

Collecting sea turtles was a staple practice for ships passing through Cabo Verde, because the turtles could survive for extended periods outside the water and thus provide a continuous source of fresh meat at sea. Consumption of turtles also helped save Cabo Verde’s inhabitants from hunger during times of drought or isolation, such as during World War II. Sea turtle recipes can be found in the first Cabo Verdean cookbooks; as recently as 1990, tourist brochures advertised pickled sea turtle eggs. Although illicit, the poaching of sea turtles for consumption, especially loggerhead females during nesting, persists in all of Cabo Verde’s islands.

Coastal development, especially on the islands of Sal and Boa Vista, is drastically reducing loggerhead nesting habitat. The tourism industry of Cabo Verde has grown rapidly, with more than 820,000 tourists recorded in 2019. With such growth has come an increase in beachfront construction that impacts nesting habitats directly, as well as additional light pollution (learn more about this threat on p. 38). Conversely, low-impact ecotourism activities such as turtle watching provide an income source for local people and give tangible value to protecting the sea turtles.

Feral dogs that attack nesting females and depredate nests are a major threat on the islands of Maio, São Vicente, Santiago, and especially Sal, where tourists feed feral dogs near the nesting beaches. This problem has intensified under COVID-19 travel restrictions. With fewer tourists feeding the dogs, dog predation of turtles increased, severely injuring and killing many turtles.

Despite some persistent threats, what once appeared to be a doomed future for the sea turtles of Cabo Verde has now brightened after 20 years of conservation efforts throughout the archipelago. Populations are recovering, and current numbers suggest that this tiny island nation may indeed host the largest loggerhead aggregation worldwide, followed by the United States (Florida) and Oman. Nevertheless, as this population is one of the 11 most threatened populations of sea turtles worldwide (see *SWOT Report*, vol. VII, pp. 22–33), conservation must continue without pause. The past decade has shown a vastly increased consolidation of local, national, and international partners working together to ensure that Cabo Verde’s sea turtles remain in abundance for the future. •

BELOW: A thermal image taken by drone reveals feral dogs near a nesting loggerhead. © Project Biodiversity; **PREVIOUS SPREAD:** A loggerhead turtle in Cabo Verde. Loggerheads are the most abundant turtle species found in Cabo Verde and the focus of a wide range of conservation programs. © Adilson Ramos / Project Biodiversity



A Community Affair

The success of sea turtle research and conservation in Cabo Verde derives largely from the hard work of numerous local NGOs and community groups located throughout the archipelago. Many of those groups have received awards, grants, and international recognition for their leadership and innovation, including five SWOT grants since 2008 (learn more at www.seaturtlestatus.org/swot-grantees).

Since 2006, the community of Cruzinha on the island of Santo Antão has led a program to convene youth volunteers for sea turtle beach patrols; similar efforts are under way on São Vicente. On the islands of Maio and Sal, a homestay program tied to turtle conservation provides an alternative income to families that host student and international volunteers in their homes; the students experience local customs while participating in educational activities. On Maio, Sal, and Boa Vista, the nonprofit Guardians of the Sea works with local fishers on marine megafauna research and engages them in reporting illegal activities in marine protected areas. In return, fishers receive education, technical support, and safety and monitoring equipment. The strengthened connection between NGOs and fishers has also expanded into turtle protection. Many watermen help report and release turtles caught in ghost fishing nets, and they volunteer to support night patrols during the nesting season.

Innovative conservation research led by Fundação Tartaruga Cabo Verde and Projeto Biodiversidade uses thermal imaging drones to monitor vast stretches of beach to detect poachers, to find lost turtles, and to control feral dogs. On Boa Vista, researchers combine the use of drones with trained tracking dogs to better manage feral animals. This group has recently been awarded a SWOT grant that will allow members to lead swimming lessons integrated with environmental education for the children of Boa Vista, with the goal of deepening the children’s connections to endangered sea turtles and their habitats (see p. 41).