

African Journal

of Sea Turtle Biology & Conservation



Atelier Kitabanga Rossana is a community center of Project Kitabanga in Angola, developed with women from the Hogiua community at the mouth of the Longa River, supporting livelihoods and sea turtle conservation.



2025 - Number 5
ISSN 2833-4035

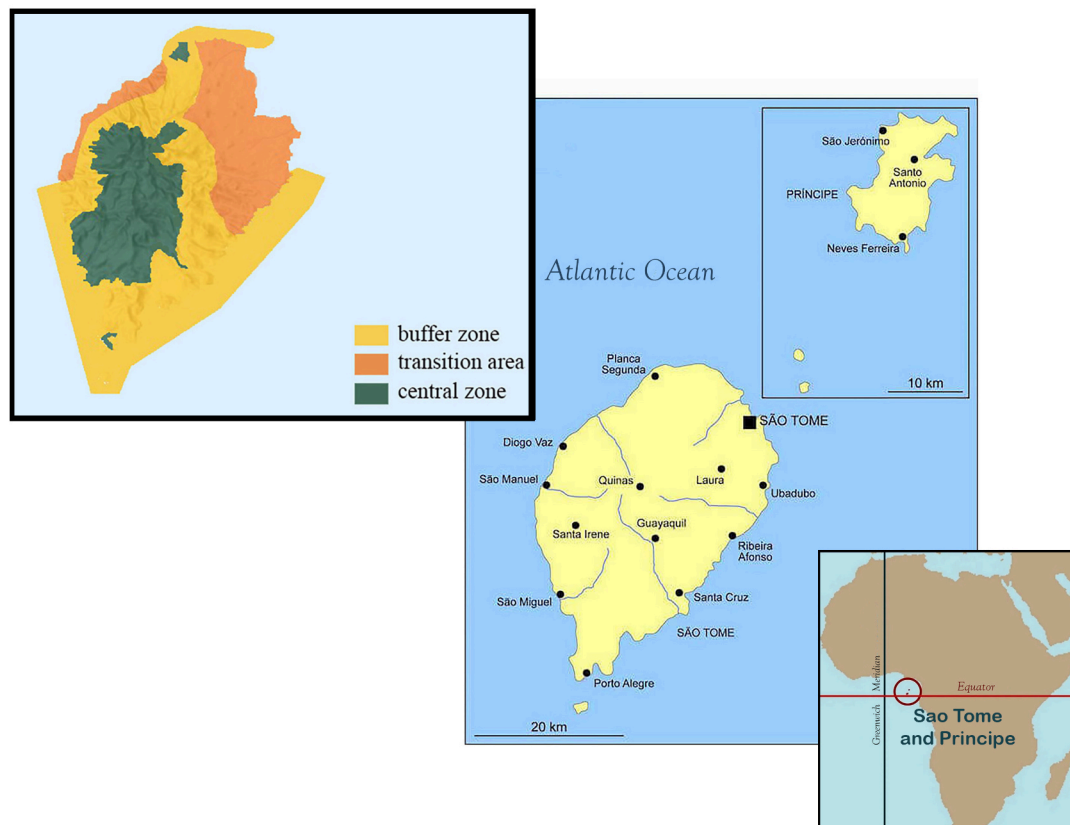
Good News: The Classification of all the Islands and Islets of the Republic of São Tomé and Príncipe as a UNESCO Biosphere Reserve

Jacques Fretey

Center for Sea Turtle Research – Chélonée, Mas du Ringué, 46260, Beauregard, France (email: jfretey@imatech.fr)

Since July 2012, the island of Príncipe as well as the nearby islets (Pedras Tinhosas, Boné do Jóquei and Bom Bom) and a marine area of approximately 71,592 hectares have benefited from the classification as a Biosphere Reserve. However, during the 37th session of the International Coordinating Council for the Man and the Biosphere Programme of UNESCO, which was held at the end of September 2025 in China, São Tomé and Príncipe became the first State in the world to have its entire territory, terrestrial and marine, classified as a Biosphere Reserve. The reserve covers 112,897 hectares, of which 80,964 hectares are terrestrial, and 31,933 hectares are marine.

By definition, a Biosphere Reserve is a tool intended to promote the well-being of human beings and nature; it promotes sustainable development through participatory dialogue, poverty reduction, and by improving society's ability to cope with climate change. A Biosphere Reserve is theoretically divided into 3 zones: one or several central zones where landscapes, ecosystems and species are strictly protected; a buffer or intermediate zone where human activities such as education and ecotourism can be developed if they are compatible with environmentally sustainable practices; and a so-called "transition" area where communities are encouraged to have sustainable economic and human activities from a socio-cultural and ecological point of view. Therefore, this is good news for biodiversity in general in São Tomé and Príncipe but also good news for sea turtles because the beaches and the marine environment now have an international classification of protection that is almost irreversible.



Map of the Sao Tome Biosphere Reserve with the delimitation of its 3 categories.

The São Tomé and Príncipe archipelago is an important breeding and feeding area for four species of sea turtles: Mão Branca (green turtle; *Chelonia mydas*), Tatô (olive ridley; *Lepidochelys olivacea*), Sada (hawksbill; *Eretmochelys imbricata*) and Ambulância (leatherback; *Dermochelys coriacea*). Historically, there are only a few recorded sightings of Cabeça Grande (loggerhead; *Caretta caretta*) nests. It is not known whether this species once nested frequently on these islands (Fretey 2001). Since the sea turtle research project began, only one nesting event has been recorded, in January 2017, at Praia Inhame, southern São Tomé Island (Porto Alegre region). In addition to these isolated nesting events, loggerhead turtles are sometimes observed at sea (Ferreira-Airaud *et al.* 2022). The archipelago is also home to the largest colony of hawksbill sea turtles in the eastern Atlantic and is one of the 11 global priorities for sea turtle conservation (Wallace *et al.* 2011).

Additionally, on March 19, 1999, three juvenile leatherback turtles were caught with nets by fishermen in the vicinity of the island of Boné de Jóquei. The length of their carapaces was 17, 19 and 21 cm. A fourth turtle of an identical size had already been captured in the same place a week earlier. Then on March 26, a fifth 14 cm leatherback turtle was captured towards the island of Cabras, northeast of Sao Tome (Fretey *et al.* 1999). Ferreira *et al.* (2024) also reported the occasional presence of leatherback turtles and juvenile loggerhead turtles around Príncipe. However, no targeted research has been conducted since that time (Ferreira-Airaud *et al.* 2022), and fishermen have not reported any more sightings.

In recent years, this region has been the subject of interesting studies. One example is research aimed at determining the levels of contaminants (metals and metalloids) accumulated by the Santomean populations of green turtles and hawksbills to ascertain possible genotoxicity in the blood of females and their potential effects on their eggs and embryo development (Morão *et al.* 2024; Morão *et al.* 2025). Additionally, a nine-year study has been conducted which describes the morphological parameters of the turtles, the main nesting beaches with the preferences of each species, the diving patterns, etc. These studies show that populations of green and hawksbill turtles appear to be recovering in São Tomé, certainly due to sustained conservation efforts over the years, but caution is still necessary (Ferreira-Airaud *et al.* 2024).

Until recently, the meat and eggs were consumed, and the carapace of the hawksbill turtle was used by around forty specialized artisans (J. Fretey, pers. comm.). Coastal erosion and sea level rise due to global warming threaten the beaches of this country. The archipelago, in a few years, has lost 4% of its coastal area. In the 1990s the ECOFAC program was fighting against the significant theft of sand from beaches to build houses (J. Fretey, pers. comm.), but today the threat of erosion is greater than ever, and in recent years, several local organizations and initiatives have been actively working to combat sand extraction and mitigate coastal erosion (Ferreira-Airaud *et al.* 2022).



Praia Banana, Príncipe.

In 2010, the government of the Autonomous Region of Príncipe approved the creation of a Comissão Tartaruga Marinha (Sea Turtle Commission) by the Príncipe Natural Park, whose main objective was to strengthen the protection of sea turtles (Ferreira-Airaud *et al.* 2022). In April 2014, the government of São Tomé published its national legislation (Decreto-Lei n. 8/2014) prohibiting the possession, trade, and transport of sea turtles (Vieira *et al.* 2024). National legislation and ratified conventions have changed attitudes. Current conservation initiatives are helping reverse the trend and increase the populations of green turtles, olive ridleys, leatherbacks, and hawksbills (Ferreira-Airaud *et al.* 2022).

In São Tomé, Programa Tatô now has more than 80 people, including 51 rangers responsible for monitoring feeding areas and 80 nesting beaches. On Príncipe, Fundação Príncipe has a team of around 62 people, including 32 forest rangers who monitor feeding areas and 36 beaches. Everything is now well under control, even if there are still a few holdouts.

Starting in 2017, Programa Tatô supported the creation of an organization called "Queremos ter um futuro com destino" ("We want a future with a destiny"). The goal of this organization was to help the main sea turtle traders in the capital's municipal market to start an alternative and legal business. This aims at the application of the law, the involvement of former key actors in sea turtle conservation activities, and the strengthening of monitoring efforts for the protection of biodiversity (Thomas-Walters *et al.* 2020; Ferreira-Airaud *et al.* 2022). Today, these women have their own microbusiness, an initiative supported by Programa Tatô as part of their program of creating alternative livelihoods for those directly or indirectly once dependent on sea turtles.



A village in the south of São Tomé Island. The new status should offer opportunities for improvement in the medium to long term.

Reconciling social progress and environmental protection is one of the major challenges facing São Tomé. Coastal communities face numerous problems, including socio-economic vulnerability, unemployment, low levels of education and gender inequality. Sustainable sea turtle conservation strategies must therefore be designed as part of an integrated development plan for the country (Ferreira-Airaud *et al.* 2022). The Biosphere Reserve status for the entire archipelago is now a major step towards a future combining the elimination of poverty of inhabitants and the preservation of exceptional biodiversity. It is therefore now necessary that the government of São Tomé and Príncipe seeks technical and financial partners to strengthen environmental monitoring and education. While this UNESCO classification is a step in the right direction for biodiversity, poverty reduction will depend on collective actions by institutions, non-governmental organizations and communities working together.

Finally, the classification of the Quiçama region in Angola and the island of Bioko in Equatorial Guinea as Biosphere Reserves in September 2025 raise greater hope for the future of sea turtles in Atlantic Africa.

Map and photos © Jacques Fretey

Literature Cited

- Ferreira, R., I. Prazeres, I., M. Silva, L. Bentes, F. Leitão, T. Borges, and A. Bolten 2024. Sea turtle snorkeling survey at Príncipe Island, West Africa. Pp: 121. *In*: Y. Kaska, B. Sönmez, O. Türkecan, Ç. Sezgin, and L. Belski (Compilers) Proceedings of the Thirty-Fifth Annual Symposium on Sea Turtle Biology and Conservation. NOAA Technical Memorandum NOAA NMFS-SEFSC-782. 187pp.
- Ferreira-Airaud, B., V. Schmitt, S. Vieira, M.J. de Carvalho do Rio, E. Neto, and J. Pereira. 2022. The Sea Turtles of São Tomé and Príncipe: Diversity, Distribution, and Conservation Status. Pp. 535-553. *In*: L. M. P. Ceriaco, R.F. de Lima, M. Melo, and R. C. Bell (Eds.) Biodiversity of the Gulf of Guinea Oceanic Islands, Science and Conservation. Springer. 707 pp.
- Ferreira-Airaud, B., S. Vieira, M., Branco, A. Pina, V. Soares, M. Tiwari, M. Witt, R. Castilho, A. Teodósio, and L.A. Hawkes. 2024. Green and hawksbill sea turtles of Eastern Atlantic: New insights into a globally important rookery in the Gulf of Guinea. *Ecology and Evolution* 14:11133.
- Fretey, J. 2001. Biogeography and Conservation of Marine Turtles of the Atlantic Coast of Africa / Biogéographie et conservation des tortues marines de la côte atlantique de l'Afrique. CMS Technical Series Publication, n° 6, UNEP/CMS Secretariat, Bonn, Germany. 429 pp.
- Fretey, J., J.F. Dontaine, and O. Neves. 1999. São Tomé et Príncipe: Zone de croissance pour les tortues-luths? *Canopée* 15: i—ii.
- Morão, I.F.C., T. Simões, R.B. Casado, S. Vieira, B. Ferreira-Airaud, I. Caliani, A. Di Noi, S. Casini, M.C. Fossi, M.F.L. Lemos, and S.C. Novais. 2024. Metal accumulation in female green sea turtles (*Chelonia mydas*) from Eastern Atlantic affects their egg quality with potential implications for embryonic development. *Science of the Total Environment* 931: 172710.

Morão, I.F.C., T. Simões, R.B. Casado, S. Vieira, B. Ferreira-Airaud, I. Caliani, A. Di Noi, S. Casini, M.C. Fossi, M.F.L. Lemos, and S.C. Novais. 2025. Correlation between trace element concentrations in the blood of female hawksbill (*Eretmochelys imbricata*) and egg quality in nesting populations of São Tomé Island. *Environnement Research* 279: 121594.

Thomas-Walters, L., S. Vieira, V. Jiménez, D. Monteiro, B. Ferreira, R.J. Smith, and D. Veríssimo. 2020. Challenges in the impact evaluation of behaviour change interventions: the case of sea turtle meat and eggs in São Tomé. *People and Nature* 2: 913–922.

Vieira, S., V. Jiménez, B. Ferreira-Airaud, A. Pina, V. Soares, M. Tiwari, M.A. Teodósio, R. Castilho, and A. Nuno. 2024. Perceived social benefits and drawbacks of sea turtle conservation efforts in a globally important sea turtle rookery. *Biodiversity and Conservation* 33:1185–1205.

Wallace B.P., A.D. DiMatteo, A.B. Bolten, M.Y. Chaloupka, B.J. Hutchinson et al. 2011. Global conservation priorities for marine turtles. *PLoS ONE* 6: e24510. doi:10.1371/journal.pone.0024510.

