

ITAPUÃ, BRAZIL

A Case Study for Urban Engagement in Turtle Conservation

by EDUARDO C. SALIÉS, NATHALIA BERCHIERI, LILIANA P. COLMAN, MANUELA R. B. BOSQUIROLI, ALEXSANDRO SANTOS, FREDERICO TOGNIN, MARIA A. MARCOVALDI, VALÉRIA ROCHA, and PAULO H. LARA

For 37 years, Projeto TAMAR (the Brazilian Sea Turtle Conservation Program) has been monitoring and protecting the five sea turtle species that occur along the Brazilian coast: loggerhead, hawksbill, green, olive ridley, and leatherback. During this time, the number of protected nests has risen from 62 (in 1982–83) to approximately 30,000 (in 2016–17) thanks to an array of successful conservation programs, from hatchery management and beach protection, to training and environmental education with local communities. Brazilians living near TAMAR project sites have become increasingly aware of and involved with marine conservation and are now TAMAR's closest allies in turtle protection. Currently, 97 percent of turtle nests each year are left in situ in Brazil; only those found in areas of extremely high urbanization or intense beach use are relocated to open-air hatcheries.

The city of Salvador in the northeastern state of Bahia was established in 1549 as Brazil's first capital, but it was not until the 1950s that it began to expand vastly to house a growing human population. Unregulated expansion of tourism was most significant near the beaches, and that development degraded habitats because of coastal armoring, intense beach use, and artificial lights. An excellent illustration of the degradation can be found in the turtle nesting area at Itapuã, a coastal neighborhood of Salvador with high-density housing, hotels, and businesses along a five-kilometer stretch of beach that remains important for turtle nesting.

During the 1990s, the strategy adopted by TAMAR in Itapuã was to relocate all nests to a safer beach farther north. However, more recently TAMAR has been mapping the entire coastal zone, identifying areas where nests could safely remain on the beach (in situ) and areas where natural nests would face threats, including intense beach use during the day, poaching and artificial lights by night, vehicle traffic, and more. At the same time, researchers identified community stakeholders from public, private, and civil society institutions, focusing on those who could be potential partners in protecting sea

turtles. Members of the municipal government—the military and environmental police, public sanitation, lifeguards, and zoonotic control—were identified as possible partners. Hotels and resorts, schools, and local businesses were among private sector partners, and among civil society organizations, TAMAR identified local neighborhood and surfing associations.

Meetings were held with all stakeholders, and monitoring strategies were developed to ensure that nests could be safely left in situ. The long-term, early-morning daily patrols conducted during the nesting season by TAMAR would continue to identify and mark natural nests, and their daily protection would fall to other stakeholders. Responsible parties were subsequently trained by TAMAR staff in the proper protocols and procedures for managing the nests and hatchlings, recording nest predation by domestic animals, and helping females and hatchlings who are disoriented by artificial lights as well as females coming ashore to nest during the day at moments of intense beach use.

During the daily monitoring of the beach, the local TAMAR employee (or *tartarugueiro*) erased all signs of turtle

presence on the sand to ensure that turtle activities remain unnoticed by beach users who might potentially disturb the nests. Clutches that were deemed to be at risk of tidal flooding or damage by beach erosion, or that were in areas with intense beach use, were relocated by TAMAR to safer beaches nearby. Turtle disorientation and anthropogenic disturbances such as poaching were meticulously recorded by TAMAR and the partner network for use as a metric for evaluating the effectiveness of the strategy. The use of instant chat apps as a tool to involve citizens in exchanging information with the local stakeholders kept citizens involved throughout the nesting season and beyond.

Simultaneously with fieldwork, TAMAR launched environmental awareness campaigns in the study area, called TAMAR na Escola (TAMAR in the school) and Nossa Praia é a Vida (our beach is life). The first of these campaigns promotes activities for schoolchildren related to sea turtle biology and threats, and the latter led actions on the beaches during the nesting season, including exhibitions, beach cleanups, and hatchling releases. The programs did a great deal to raise the awareness of local residents,

tourists, and beach users. These types of activities and other communications and outreach work have brought the local community together in mitigating the potential impacts and conflicts related to sea turtle nest management.

Through a social media network coordinated by TAMAR, all stakeholders receive regular updates on nesting numbers, environmental awareness activities, and hatchling releases, along with information on disoriented hatchlings and other topics. Local news media have also been critically important for sharing the conservation message with a broader national and international audience. To avoid potential damage to nests from curious beachgoers, at no time was information about a nest's exact location shared publicly.

The attention drawn to this project by the media, along with the school and public

outreach activities, strengthened the team. It was clear for those in TAMAR that this new panorama of activities brought feelings of happiness and responsibility toward marine conservation among the partners and the local community members. The live coverage of the hatchling releases and beach exhibitions reached local and state media as well, being broadcast to thousands of people across Bahia state. The high visibility contributed to an even greater empathy toward sea turtles and a public understanding of the broader marine conservation message.

When TAMAR started monitoring Itapuã beach in 1990, because of the intense human pressures at that time, staff had to relocate nearly all nests to ensure that hatchlings would survive. In the ensuing years, enhanced local participation in the protection efforts made it possible to increase in situ protection of nests from only 3 nests in

1990 to more than 140 nests in 2016–17, and in the past year only three anthropogenic disturbances of turtles were reported.

TAMAR has learned through its nearly 40 years of experience that local community involvement is the only way that long-term conservation of species can be effectively achieved. During the next phase of work at Itapuã—to achieve sustainable coexistence between sea turtles and urban nesting beaches—TAMAR will no longer conduct daily monitoring patrols, thereby reducing costs and allowing the program to focus its efforts on monitoring priority areas only. The strong relationship with the local stakeholders will help to ensure that turtles will be cared for and their nests protected. When TAMAR encourages the involvement of local communities in conservation, as it has done at Itapuã, it is ultimately promoting awareness for the future generations. ■



Hatchlings return to sea as part of environmental awareness activities with local communities. © PROJETO TAMAR / FUNDAÇÃO PRO TAMAR BRASIL