

Marine Turtle Protected Area Network in the Sulu-Sulawesi Seascape

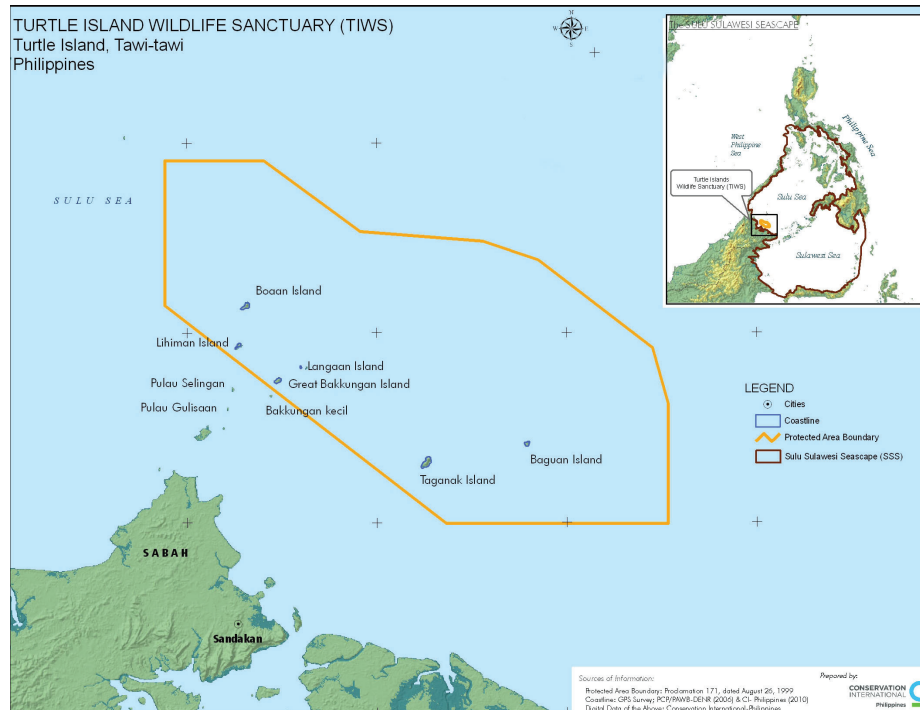


TURTLE ISLANDS WILDLIFE SANCTUARY

At a Glance

The Turtle Islands Wildlife Sanctuary (TIWS) is composed of six small islands at the southwestern tip of the Philippines: Taganak, Baguan, Langaan, Boan, Lihiman, and Great Bakkungan. The entire protected area (PA) has a total area of 242,967 hectares (2,429.67 square kilometers or km²), of which 318 hectares (3.18 km²) are land areas. The six islands also comprise the Turtle Islands municipality of Tawi-Tawi province.

The islands have long been known as important nesting areas for marine turtles; one of the islands, Baguan, was declared a marine turtle sanctuary in 1982 (DENR MNR AO 8, s. 1982). In 1999, the other islands were also declared protected through Presidential Proclamation No. 171, which established the TIWS as part of the Philippines' National Integrated Protected Areas System (NIPAS).



Location and boundaries of Turtle Islands Wildlife Sanctuary

Conservation Importance

Despite the small size of the TIWS' islands, thousands of marine turtles visit its beaches each year to lay their eggs. The TIWS is among the major nesting grounds for the green turtle (*Chelonia mydas*). The hawksbill turtle (*Eretmochelys imbricata*) is also known to nest in the area, but less frequently. During the peak nesting season (July to August), as many as 150–200 turtles emerge from the waters each night to lay their eggs in the sand. Most of these nesting incidences (approximately 80 percent) occur on Baguan Island, the 29-hectare (0.29 km²) uninhabited island designated as the MPA's strict protection zone. Records from the Department of Environment and Natural Resources (DENR) showed an average of over a million turtle eggs laid annually from 2010 to 2012. This period also saw the highest nesting figures recorded in the area in almost 30 years, since monitoring began in 1984.

This fact sheet is part of a series of profiles of the marine protected areas (MPAs) that make up the planned Marine Turtle Protected Area Network (MTPAN) of the Sulu-Sulawesi Seascape. These MPAs, found in Indonesia, Malaysia, and the Philippines, are coastal and marine habitats that have been deemed critical to the sustainability of marine turtle populations in the region.



Regional Importance

Located near the TIWS is Sabah's Turtle Islands Park (TIP), whose islands are also important marine turtle nesting grounds. Together, the TIP and the TIWS are known as the Turtle Islands Heritage Protected Area (TIHPA), a one-of-a-kind marine protected area (MPA) jointly established by two countries, the Philippines and Malaysia, for the conservation of marine turtles, and the first trans-boundary marine park for turtle conservation ever established. Both MPAs are part of the Sea Turtle MPA Network of the Sulu-Sulawesi Marine Ecoregion (SSME).

The TIHPA's islands are globally important areas for green sea turtles. They are considered one of Southeast Asia's few remaining major nesting grounds for green turtles (TIWS Management Plan, 2008) and a prime example of conservation success.

“The combined turtle stocks from the Philippine and Malaysian Turtle Islands, which share genetic similarities, are the single largest and most stable population of green turtles in all of Southeast Asia, and are of paramount importance in ensuring the long-term survival of the population.”

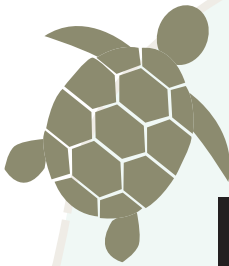
Dr. Nicolas Pilcher, Director, Marine Research Foundation
Co-Chair of the International Union for the Conservation of Nature (IUCN)
Marine Turtle Specialist Group

Turtles that have been previously tagged in the TIP are also regularly recorded in the TIWS, and vice-versa. Genetic testing and mark-recapture studies of turtle populations have also shown that the TIHPA population is linked to that of the Berau Marine Conservation Area in Indonesia, another member of the Sulu-Sulawesi Seascape Sea Turtle MPA Network. Berau has been identified as a key foraging site for marine turtles.

Marine turtles link these sites together. They cross international boundaries as part of their timeless, tireless life journey, and have been doing so long before these boundaries were identified. The recognition of this fact prompted the countries involved to work together and manage their respective marine turtle habitats not just as individual sites, but as part of a life-giving network.



The Marine Turtle Protected Area Network (MTPAN)



In 2009, the Tri-National Committee for the Sulu-Sulawesi Marine Ecoregion (SSME) approved the design of a Sea Turtle MPA Network, after scientific studies showed the **connectivity of the marine turtle populations in the three SSME countries** (Indonesia, Malaysia, and the Philippines).

The SSME Tri-National Committee recognized the **need to jointly manage shared marine resources**, and identified the establishment of the Marine Turtle Protected Area Network (MTPAN) as among the key programs through which transboundary cooperation could take place.

Following the expiration of the SSME Memorandum of Understanding (2006–2016), this initiative has continued under the Coral Triangle Initiative for Coral Reefs, Fisheries, and Food Security (CTI-CFF), given that the Sulu-Sulawesi is recognized as a priority seascape in the CTI Regional Plan of Action. The **marine protected area (MPA) managers of the network shall agree on the modalities for cooperation** to actively support each other's MPA management efforts, and collectively contribute to regional initiatives.

The importance of marine turtles

Marine turtles are important for conservation because they play a number of ecologically important roles. They are described as “gardeners of the ocean” because they help keep coral reefs and seagrass meadows healthy as they feed and graze. They need various habitats as they go through their life cycles, such as nesting beaches, coral reefs, open sea, and seagrass meadows. A healthy marine turtle population, therefore, serves as an indicator of the health of these different habitats, and conserving marine turtles also means conserving a wide range of ecosystems and ecosystem services that benefit human communities.



Communities

The TIWS municipality has an estimated population of 5,251, according to the 2012 Survey and Registration of Protected Area Occupants, and a total population of 5,889 as per the 2016 National Statistics Office (NSO) report. Communities in the islands are composed mainly of people from the Jama Mapun, Sama, and Tausug indigenous cultural groups, plus others (mainly Bisaya) who began migrating to the Turtle Islands in the 1940s to escape the conflict-ridden areas of Mindanao.

Tawi-Tawi is one of the poorest provinces in the Philippines, and the TIWS is its most remote municipality. The great distance of the TIWS from the population and economic centers of Tawi-Tawi and Zamboanga peninsula renders the islands relatively isolated. Access to social services is inadequate, and basic supplies like school textbooks and medicine can take years to reach them, if at all.

This situation also makes the province largely dependent on marine and coastal resources. Fishing is the main source of livelihood of the islands' inhabitants. There is also a history of dependence on turtle egg collection for traditional and commercial purposes, with nearby Sandakan, Malaysia serving as the main trade outlet. Collection of turtle eggs is still practiced in the islands through a limited, locally regulated system, except in the Baguan Island strict protection zone.

The TIWS' fisheries resources attract illegal fishers from Malaysia, China, and other parts of the Philippines. The destructive fishing practices (e.g., trawl, purse seine) of these commercial fishers, combined with the blast fishing practiced by local small-scale fishers, have taken their toll on the coastal and marine habitats of the MPA, leading to a decline in the once abundant fisheries of the Turtle Islands.

In April 2016, DENR Region 9 Director Felix Mirasol met with the Taganak community to explain the importance of coastal and marine resources, and to emphasize the community's role in the protection and conservation of these resources

The six people's organizations of Taganak were federated, with the name Sinag Sin Turtle Islands.

The following May, stakeholders from the four POs of Great Bakkungan, Boan, Langaan, and Lihiman were organized by the Kabasalan City Environment and Natural Resources Office's (CENRO) Michael Cruz.

Top: DENR Dir. Felix Mirasol meeting with the local community in TIWS.

Bottom: One of the turtle egg hatcheries in TIWS (Photos: DENR Region 9)



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Management Aspects

The destructive and uncontrolled exploitation and extraction of marine resources, especially turtle eggs, are the most pressing threats currently being faced in the TIWS. The remote location of the islands and limited technical and financial resources hinder conservation and protection efforts. Personnel from the DENR, Philippine Navy, and Philippine Coast Guard are deployed to patrol the area, but their operations are also difficult to sustain, logistically and financially. In recent years, enforcers were able to conduct regular seaborne patrols only because of donor funding from conservation partners. The patrols stopped when the funding ended.



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The TIWS is also negatively affected by climate change, which may compromise the integrity of the area as a marine turtle nesting ground. A report on the TIWS vulnerability assessment exercise in 2015 found that all the islands have high exposure to climate stressors such as waves and sea level rise. The integrated assessment of coastal systems—fisheries, coastal integrity, and biodiversity—showed high vulnerability of the TIWS. All islands have high overall vulnerability scores for fisheries, which indicate fisheries depletion, except in Baguan (which has a low vulnerability score). The vulnerability assessment exercise enabled stakeholders to prioritize and rank strategies for TIWS management. However, the exercise also pointed out data limitations and gaps, and the need for program assessment and monitoring to identify climate change adaptation measures.



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Possible climate change impacts such as sea level rise, increased rainfall, and storm surges can flood or damage nesting beaches. Higher temperatures in the nesting beaches can lead to a predominantly female marine turtle population, as the sex of marine turtle hatchlings is determined by incubation temperature. Beach erosion has also been observed in parts of the TIWS. Turtle egg hatcheries in three islands (Taganak, Lihiman, and Langaan) had to be reestablished further inland because seawater had reached the old hatchery sites, damaging some nests.



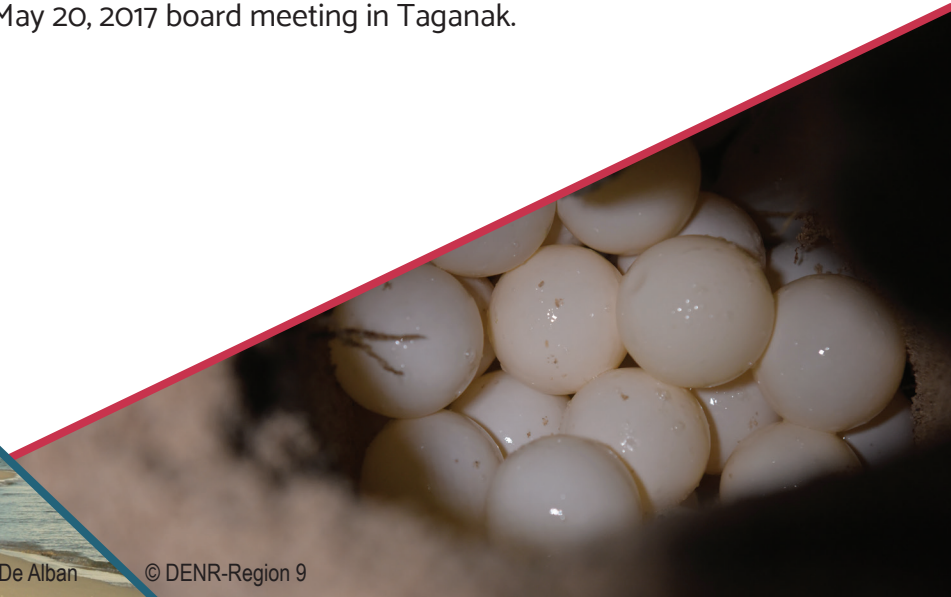


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In 2014, assessments were made on management effectiveness in the TIWS MPA using two tools: the Management Effectiveness Tracking Tool (METT) and the Management Effectiveness Assessment Tool (MEAT). TIWS achieved a 51 percent METT score and a Level 1 (of four levels) MEAT score—the same MEAT score after the first assessment in 2011. These results indicate that while there are essential elements of MPA management in place in the TIWS, such as a management plan, a management body, legal instruments and protection, and community involvement, there is still a lot to be done to promote the long-term effectiveness of management efforts. Law enforcement, protected area financing, monitoring and evaluation, and research are some of the most important activities that need to be sustained.

In 2016, a SWOT (strengths, weaknesses, opportunities, and threats) analysis was conducted in Cebu City by Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), to help determine medium- and long-term programs, projects, and activities to address issues facing the TIWS. Plans covered ecological and environmental resource management; human health and community hygiene; governance and political issues; community organizing, capacity building, and training and education; information, education, and communication (IEC); networking and linkages; and monitoring and evaluation.

These plans were presented to and approved by the Protected Area Management Board (PAMB) members during the May 20, 2017 board meeting in Taganak.



Prospects for Conservation

As part of the MTPAN, the TIWS is increasingly gaining the attention of government agencies, development assistance partners, nongovernment organizations, and other stakeholders willing to contribute to conservation efforts. Several important initiatives are already underway to address certain management gaps. A law enforcement center, linked to similar centers in other important marine turtle areas like the Balabac Strait, is being constructed in Taganak to house and train personnel, part of a technical assistance package from the United States Department of Justice. Ecotourism facilities are being planned; the TIWS PAMB recently approved a proposal by the Tourism Infrastructure and Enterprise Zone Authority (TIEZA) to build cottages and turtle watching boardwalks in Taganak. Tawi-Tawi is one of DENR's 29 Convergence Sites for Sustainable Integrated Area Development, based on its six-year management plan.

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Conservation projects supported by the Asian Development Bank and GIZ seek to strengthen the TIWS' role in the Sulu-Sulawesi MTPAN, in cooperation with the DENR Biodiversity Management Bureau (BMB) and the Department of Agriculture's Bureau of Fisheries and Aquatic Resources (DA-BFAR), with technical support from Conservation International Philippines.

In the long term, these efforts are envisioned to create healthier marine turtle populations, more prosperous and active local communities, and more effective MPA managers and government officials across the Sulu-Sulawesi countries—Indonesia, Malaysia, and the Philippines.

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With additional inputs from discussion during the TIWS Protected Area Management Board Meeting, June 2, 2014, Pagadian City.

With additional inputs from Dr. Nicholas J. Pilcher, Marine Research Foundation and IUCN Marine Turtle Specialist Group

Project in Focus

The Sulu-Sulawesi Seascape Project (2012–2018)

The Sulu-Sulawesi Seascape, shared by Indonesia, Malaysia, and the Philippines, ranks among the most diverse and productive marine ecosystems in the world. It is also home to the largest nesting populations of green sea turtles in Southeast Asia. The marine resources in the Sulu-Sulawesi Seascape face major threats such as overfishing, destructive fishing practices, rapid population growth, unsustainable coastal development, and pollution. As a consequence, valuable coastal habitats like mangrove forests, coral reefs, and seagrass beds are at risk of losing their function as breeding and nursery grounds for marine organisms. This situation is exacerbated by the effects of climate change.

Indonesia, Malaysia, and the Philippines see the need for transboundary cooperation to address these threats. This is being carried out under the umbrella of the Coral Triangle Initiative on Coral Reefs, Fisheries, and Food Security (CTI-CFF). Designated as a priority seascape under CTI-CFF by the six member countries of the CT (Indonesia, Malaysia, the Philippines, Papua New Guinea, the Solomon Islands, and Timor-Leste), the Sulu-Sulawesi Seascape serves as a geographic focus of investments, action, conservation, and climate change-related results under the CTI-CFF Regional Plan of Action (RPOA).

Funded by the German Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB), the project focuses on effective management of MPAs and the establishment of a regional MPA network for marine turtles; an Ecosystem Approach to Fisheries Management in selected areas; and climate change adaptation planning. Included in the approach are scientific research to establish connectivity of marine turtle populations, institutional strengthening, and knowledge sharing through regional exchanges, cross visits, and publication and dissemination of lessons learned.

The project is jointly implemented by Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH and Conservation International (CI), with the Ministry of Marine Affairs and Fisheries (MMAF) of Indonesia; the Ministry of Science, Technology, and Innovation (MOSTI), the Department of Fisheries Sabah (DOFS), and Sabah Parks in Malaysia; and the Department of Environment and Natural Resources-Biodiversity Management Bureau (DENR-BMB) and the Department of Agriculture-Bureau of Fisheries and Aquatic Resources (DA-BFAR) in the Philippines.

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Environment, Nature Conservation,
Building and Nuclear Safety

of the Federal Republic of Germany