



Pearls in shells

Much treasured but little understood, turtles are a key factor in attracting divers and scientists alike to eastern Sabah's waters

Story by **Kenneth Kassem** Photography by **Eric Madeja**

TURTLES ARE EVERYWHERE IN SEMPORNA. On nearly every boat trip to the islands around this town in the Malaysian state of Sabah, a distinctive nose will be glimpsed snatching a breath of air. Scientists surveying reefs here have to contend with turtles swimming between them and the schools of fish they are counting, or have to gently nudge a resting turtle out of the way while laying a measuring tape.

The waters around this part of northeastern Borneo are a global hotspot for the handful of modern-day marine turtle species, whose ancestors co-existed with the dinosaurs. The coral reefs and seagrass beds here provide ample foraging grounds for green and hawksbill turtles, and the undeveloped sandy beaches of small islands make ideal nesting grounds. In the Sulu Sea to the north of Semporna, the tiny Turtle Islands, shared between the Philippines and Sabah, are host to around 10,000 green and hawksbill nests every year.

But there are threats even here. While turtles here are not hunted for their meat or shells, the eggs are often poached, they drown in fishing nets or die in collisions with boats. Climate change

threatens their habitats and even the natural gender ratio of their hatchlings – determined by the temperature of the sand.

Of the six species found within the Coral Triangle – the world's apex of marine biodiversity that encompasses the Philippines, Indonesia, Malaysia, Timor Leste, Solomon Islands and Papua New Guinea – the leatherback and hawksbill are critically endangered while the green and loggerhead are listed as endangered. Olive ridley turtles are vulnerable and good data is not available for the flatback.

Closer to Semporna than the Turtle Islands, and much more commonly visited, is the famous dive area around Sipadan, another island favoured by turtles. Formerly, the Sultan of Sulu granted exclusive rights to residents of nearby islands to collect turtle eggs for human consumption here. In the 1930s the island was declared a bird sanctuary but the egg collection continued until Sabah formally protected all turtles in 1997 and a hatchery was built to protect all eggs laid there.

Today the island and hatchery are managed by Sabah Parks who protect the nests from introduced predator species, and from poachers

who still try to steal eggs from time to time. Visitors are only allowed to explore a tiny portion of the island, not including the hatchery, and the number of divers in the waters around it is capped at 120 per day.

Only certain resorts in Semporna have permits that allow them to take visitors to Sipadan, but there are other islands close by that offer opportunities to see turtles. Nearest to Sipadan is Mabul, once a quiet anchorage for the boat-dwelling Bajau people, now a tourism hub and home to 2,000 residents. The island is not protected, but the proliferation of resorts and the presence of tourists has stopped many of the most destructive practices that plague Semporna itself – particularly the fish bombing. This has allowed corals and fish populations to rebound around the island and turtles can now be spotted on almost every dive.

According to Borneo Marine Research Institute's marine turtle expert, Dr Pushpa Panaliappan, the turtles of Mabul and Sipadan are unusually accustomed to people and not as shy as they are in other places. But while all structures have been removed from Sipadan, the beaches

of Mabul are teeming with resorts and the stilt houses of local communities. That leaves very few options for turtles to nest at Mabul.

Approximately 50 kilometres north of Mabul, the islands of Pom Pom and Matakang have no local villages and only one or two resorts each. The lack of people and lights makes them preferred habitats for nesting turtles. WWF-Malaysia and The Reef Dive Resort on Matakang Island recorded 58 green turtle nests and 16 hawksbill nests in 2010. But, despite laws against egg collection, there are reports that nests are raided by hungry locals, or people who want to sell them on the black market within minutes of being laid. The resorts on the two islands have teamed up with WWF-Malaysia and the Sabah Wildlife Department to move the eggs to hatcheries for safe keeping.

Turtles matter because they are keystone species in their respective habitats. Green turtles are one of the few animals to graze on seagrasses. Many species of fish and invertebrates find shelter in seagrass beds as juveniles. They have evolved to thrive in the well-trimmed and dense seagrasses provided by healthy populations of turtles. Without turtles, the seagrasses grow longer and less dense and become poorer habitat for the next generation of reef dwellers. Hawksbills are similarly critical for coral reefs by controlling soft coral and sponge populations that can compete with hard corals for space on the reef. Without hard corals, the reef loses its structure and becomes a poorer habitat for hundreds of species.

Turtles are even important in maintaining the shape and size of the islands they nest upon.

Atolls are topped with sand derived from the reef underneath them. Containing little of nutritional value, the sand supports very few plants and so, not being bound in place, may travel back and forth across the reef top over the years. A 2012 study in Costa Rica showed that unhatched turtle eggs introduce nutrients that feed plants which in turn stabilise the sand. Without it the islands themselves are at risk. So, while moving eggs to a hatchery is a short-term solution for the turtles, it may cause other problems in the long run.

Despite our growing appreciation of the importance of turtles to healthy marine ecosystems, there is much that we still don't know about them. Sabah Parks' manager for Sipadan, Maureen Jane, wants to know where the hatchlings go when they are released: "It's a mystery where they go. We find turtles that are a few years old, or 30 years old, but the hatchlings just disappear," she says.

We also don't know what populations were like historically. There is evidence from the Caribbean that current levels are a tiny fraction of what they were before humans showed up there. So even as nesting population declines are reversed, the role turtles play in the ecosystem is still likely to be much smaller than what it once was. Does this matter? We have no idea.

As more tourists visit Semporna to see turtles, there will be more incentive for resorts and locals to protect them. WWF-Malaysia, Sabah Parks and others are working hard for the cause but they need more support from local government and the tourism industry. Without that support, the turtles face a grim future. **AA**



SHELL GAMES
After the female deposits her eggs in a shallow burrow in the sand, conservation workers carefully collect them to ensure a higher percentage of them make it through to hatching.

PRACTICALITIES When to go

December-February and June-August are the rainy seasons while the best weather is March-May and September-October.

How to get there

The closest airport is Tawau, with flights from Kuala Lumpur and Kota Kinabalu on Air Asia and Malaysia Airlines. Direct flights from Singapore also sometimes available on Air Asia or Silk Air.

Contacts

For more on conservation projects see: Sabah Parks, www.sabahparks.org.my/eng/public/default.asp
WWF-Malaysia, www.wwf.org.my/about_wwf/what_we_do/marine/sulu_sulawesi_marine_ecoregion_programme/sempona_priority_conservation_area/
MCS-UK, www.semponaislandsproject.com

To visit and dive in the area try:
Matakang Island, www.matakang.com
Borneo Divers, www.borneodivers.net