Turtle Islands Marine Park

A tumble, a tussle, a tangle – of turtles. These terms describe the flight of the fledglings scrambling across the sand. There is something incredibly cute about the miniature reptiles. Like children playing in their parents' clothing, with pants too long and shirt sleeves rolled up, the baby turtles are gangly, dressed in flippers too large for their carapaces, with heads too tiny for their bodies. Gently dumped from a bucket in the dark of the night, they sort themselves out and turn nose to the water. Their tiny flippers flail at the sand, struggling to pull their too-heavy shells toward the sea.

My first question is: "Since it's dark out, how do they know where the water is?" "They always head toward the light of the horizon," the ranger tells me. Testing his theory, I flick my flashlight toward a few stragglers, who turn and follow the beam. The rangers gather them up in buckets and carry them down to the sea. With a little help, their journey begins. I'm visiting Turtle Islands Marine Park, off the coast of Sabah, Malaysia, and getting a lesson in turtle-rearing. The park hastwo purposes: one, to collect data and study the local turtlepopulation; and two, to assist in the survival of these ancientreptiles.

To this end, the Malaysian government mandated that the islands of Selingaan, Gulisan and Bakkungan Kecil, off the northeast coast of Sabah, provide a sanctuary for the animals. I'm also learning that these islands are only a subset of a chain of islands that stretch from Sabah to the southern Philippines. In 1996, in a gesture of international cooperation, Malaysia and the Philippines joined together to protect this rookery of primarily green sea turtles (Chelonia mydas) by establishing the Turtle Islands Heritage Protected Area (TIHPA).

The egg hunt

About 10 p.m., the park ranger signals me and three other guests that it's time. He instructs us to be quiet and do nothing to disturb the nesting. Trailing behind the guide, we walk along the beach until we encounter tracks emerging from the sea: They look like they were made by a large vehicle. Following the tracks up the beach into the trees, we stop and listen. We can hear the subtle sound of a turtle's heavy breathing. Moving close behind the guide, we see a nesting turtle flicking sand aside, forming a shallow pit. For a moment, the mother turtle rests in the sand hollow. With what seems a sense of turtle urgency, her hind flippers begin to flip cupful after cupful of sand out as she excavates a vertical chamber nearly two feet (a half-meter) deep. Satisfied with the depth and without missing a beat, she begins dropping her eggs into the nest, one at a time at first, then more rapidly, two and three at a time.

The ranger reaches into the nest and pulls out what looks like a ping-pong ball; the egg is similar in size and color, with a thick parchment-like skin. Gently removing the eggs, the ranger places them in a bucket as the mother turtle continues her deposits; she seems oblivious to the theft. This female deposits 94 eggs in an hour and then rests for a couple of minutes. The ranger takes this opportunity to see that she has a numbered tag attached to her flipper and writes down the number. Resuming her work with her back flippers, Mom packs sand in the hole and, as a final touch, sweeps the nest area with her long front flippers, possibly to disguise it from predators.

For another minute, we watch in silent respect and then retreat as she finishes her work. In another two weeks, she may return and lay another clutch, as these egg deposits are called, then not return for several years.

Following our guide to the hatchery located some 50 feet (15 m) above the high-tide line, we watch him carefully place the eggs in a prepared nest. Each nest is roughly 30 inches (75 cm) deep and surrounded by wire mesh to keep out predators. A marker notes the date, the number of eggs and a unique identification number.

The clutch will begin hatching in 45 to 60 days. Early hatchers stay hidden under the sand until their siblings are ready. Then, as if on cue – perhaps from the cooling temperature of the sand after sunset – they all emerge simultaneously from the nest one night and race for the sea.

Facts – and Mysteries

The perils of being a turtle start even before it hatches. Monitor lizards unearth and eat the eggs, and ants can wreck a nest. Inadvertently, other turtles digging nests nearby disturb existing nests. Once the eggs are exposed, sea birds pick off the eggs, or the hot sun dehydrates them. And, of course, poachers can eradicate an entire nest in one visit. For all these reasons, the rangers remove the eggs and keep them in the protective safety of the hatchery.

A great deal about turtles is still unknown. I ask the ranger, "What's the ratio of males to females that are born?"
Temperature seems to play a large part of whether the turtle will turn out to be a male or a female, he says. "Nests under shade-providing trees or nests dug deeper in the sand tend to produce more males," he says. Even time of the year seems to have an effect; cooler months of the year produce significantly more males.
The ranger looks up the tag number of our turtle mom. "She was first tagged here on Pulau Selingaan on Oct. 10, 2003, and 16 days later she came back and laid another 114 eggs," he says. We wonder if she'll come back again this year.
Given the difficulty of studying turtles once they reach the open sea, lots of unanswe red questions remain. Tagging started about 50 years ago with the use of metal tags. Still used today, the tags are sometimes supplemented by radio transmitters and satellites. These tools provide scientists with much more extensive data about such things as migratory patterns and how long turtles can stay submerged. With the advent of DNA sampling, researchers can prove that mothers return to the place they were born to give birth. They also tell us that turtles migrate thousands of miles. So how do the female turtles remember where they were born? A beach is a beach, after all. Scientists don't agree on the answer, but theories include the possibility that turtles follow a certain signature smell, much like a pheromone that distinguishes one beach from another. Another theory is that they have built-in compasses and a magnetic mental map of their birthplace.

"Why do we only see full-grown turtles when we're diving?" I ask. Our guide says that scientists don't really know much about where baby turtles go. "They've been tracked swimming from the beach out to sea for more than 24 hours," he says. "But beyond that, we just don't know. "We do know that when they get to be a little larger than a dinner plate, they start to be seen closer to land." It is thought that turtles spend their childhood – some three to seven years – far out at sea. I've learned a lot tonight but have two final questions: "How old do turtles have to be before they reproduce? And what is their survival rate?" The answers to these questions are crucial to whether turtles survive as a species. Scientists' best guess is that, depending on the species, turtles do not begin reproducing until they are at least 10 to 25 years old. This means that a turtle has to survive a long time before it can even begin to contribute to the continuation of the species. Unfortunately, the answer to the question about survival rate is even more profound. Scientists believe that only one hatchling in a 1,000 reaches reproductive age.

The future

Six, some say seven, species of sea turtles populate the world's oceans. Except for the flatback turtle, they are all listed with conservation organizations, such as the World Wildlife Fund, as critically endangered or endangered.

International cooperation is important to turtles' survival, because turtles migrate across the waters of many countries. Local cooperation is important because these are the communities and organizations that can protect nesting sites and patrol for poaching. And finally, individuals can do simple things such as clean up trash from beaches, limit their use of products that produce harmful run-off into the oceans, and reject products that are harvested from turtles. These contributions can make a difference to whether turtles, which survived the extinction of the dinosaurs 65 million years ago, will survive the lack of knowledge or indifference of people today.

Marine turtles are reptiles found in every tropical destination around the world. Nearly all the world's species can be found in North American and Caribbean waters. They are the green (Chelonia mydas), hawksbill (Eretmochelys imbricata), Kemp's ridley (Lepidochelys kempii), leatherback (Dermochelys coriacea), loggerhead (Caretta caretta) and olive ridley (Lepidochelys olivacea). There is some scientific debate whether there is a seventh unique species. The black turtle, a.k.a., Eastern Pacific green turtle (Chelonia agassizii or Chelonia mydas agassizii) is sometimes recognized as a unique species, sometimes recognized as a subspecies of the green turtle and sometimes not recognized uniquely. Australia's flatback turtle, first discussed in the 1880s, is still debated as to its status as a separate or a subspecies.

Facilities at Turtle Islands Marine Park

Selingan Island is the only one of Malaysia's Turtle Islands that has been opened to the public for overnight stays. It is home to the park headquarters, a modest visitor center, the turtle hatchery and most recently, several chalets for overnight guests and a small place to dine. The closest mainland town is Sandakan about an hour away by speedboat and renowned for its Orangutan Rehabilitation Centre.

About the Team

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