

Habitat

Sea turtles belong to the unique group of ancient reptiles which evolved with the dinosaurs and lived through many forms of exploitations over the centuries, writes Kartik Shanker

Survival of the ancient mariners

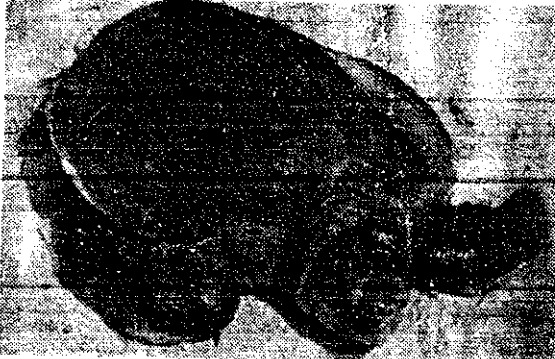
The moon lingers over a night-washed sea, a living fossil lumbers slowly onto a wave-lashed shore. Crawling with difficulty onto the dry sand, she

boat, the head and flippers are cut-off and the blood is sold to the public. Most of the other species — the ubiquitous Olive Ridley its cousin, the Kemp's

incubated by the heat of the sun and their own metabolism. They hatch after about 50 days, the little hatchlings breaking out with the help of an 'egg tooth'. After hatching they move about in juvenile frenzy and as the nest collapses, they move up out of the nest, all at once. They usually emerge at night to avoid predators and desiccation in the heat.

Ridleys, the Olive and the Kemp's. The arribada is essentially a mass nesting where hundreds of thousands of turtles migrate and nest simultaneously. There is an arribada in Gahirmatha in Orissa every year. During this nesting, as many as 800,000 turtles may nest over the course of 10 days on a 10 km beach. As many as 50,000 turtles may nest on a single night. Walking on the beach during an arribada is a unique experience; there are turtles all over the beach, many of them are digging up the older nests and eggs are flying all over; it is truly one of nature's extravaganzas.

Adverse factors here have been habitat loss and poaching of eggs. There are fishing villages dotting the coastline; here and in other parts of India, the adult was not harmed as it was revered. Only the eggs were poached and this too by a particular group. Of late, though, the fisherfolk have taken to poaching as a supplementary source of income as their own catches of fish have been rapidly deteriorating.



The Olive Ridley turtle

looks for a suitable site.

Having found one, she begins to dig with her hind flippers. Slowly scooping the sand out, she builds a flask-shaped nest, about one and-a-half feet deep. She lays 100 to 150 eggs in the nest — soft, round eggs, the size of ping pong balls. The nest is filled with sand thumped down with laboured movements of her body, and sand flung around to confuse any predators. She then returns to the sea.

Ridley, the Loggerhead — have been exploited for meat and eggs.

Though the sea turtles live their whole life in the sea, they are forced to come onto land because of the nature of the eggs they lay. Sea turtles have different feeding grounds and breeding grounds and they often migrate thousands of kilometres from one to the other. For instance, the Green turtles from the Brazilian coast migrate to the Ascension Islands in the middle of the Atlantic to nest. The mechanisms by which turtles locate these small islands in the middle of the ocean are still largely unknown. However, they are believed to have compass sense and map sense. They may use the geomagnetic field, ocean swells and chemo-sensory cues.

Sea turtles are magnificent swimmers; leatherbacks, amongst the deepest diving vertebrates, may dive more than 1000 feet below the sea and stay underwater for hours in their quest for food. Sea turtles are even known to hibernate underwater.

After nesting, they return to their feeding grounds until the next year. There is a myth that the female waits offshore, gathers her hatchlings on her back and takes them back, but in fact there is no parental care. The eggs are

Once out of the nest, they locate the sea by a number of cues, the brighter horizon (the reflection of moonlight on the water) being a primary one. In the water, they use their stored resources and swim frantically



The Green Sea turtle

past the breakers. Till recently, scientists had no idea what happened to these hatchlings — they were only seen again when about the size of dinnerplates. However, recently, young hatchlings have been seen floating along in seaweed rafts. The survival rate of hatchlings in the wild is extremely low and just one in a thousand may survive. Those that do survive are believed to return to the same beach, where they hatched, to lay their eggs.

The Kemp's Ridley nearly went extinct due to its arribada mode of nesting and the fact that it nests during the day. Poachers would simply walk down the beach cutting off the flippers — the edible part — leaving the turtles to rot. Only a massive conservation effort has revived the population.

Several factors have hit sea turtles in India and elsewhere. One of the main factors has been poaching of eggs. Habitat destruction due to sand mining and erosion is another. The human population on the coastline has increased and this has further reduced nesting area.

The Students Sea Turtle Conservation Network (SSTCN) is a small student's organisation which has attempted to conserve the Olive Ridley on the Madras coast. Here, the turtles nest between December and March

SSTCN volunteers walk the beach at night in competition with the poachers — to collect nests and relocate them in a hatchery further down. The eggs are incubated in the sand naturally and hatchlings released into the sea.

They have released more than 50,000 hatchlings since 1988, when the group was formed. The programme also includes educating the residents of Madras about conservation in general and involving them in the conservation of the Ridley.

A problem with hatcheries is the peculiar mode of sex determination in sea turtles. In turtles and some other reptiles, the sex of the offspring is determined by the temperature of incubation. In turtles, there is a critical temperature, above which all hatchlings develop as females and below which all develop as males. Since one has no control over this, and sex ratios in the wild should not be altered by human interference, the best method of conservation would be to protect the nests in their natural habitat.

Technically, all species of sea turtles are protected by law. They are classified as 'Endangered' by the Red Data Book of CITES (Convention on International Trade in Endangered Species) and under Schedule I (highly endangered) of the Indian Wildlife (Protection) Act. However, the turtles are still being affected adversely, directly and indirectly. And while people the world over are helping or hindering the survival of the sea turtles, these ancient mariners continue their cross-oceanic journeys as they have been.

Sea turtles, a unique group, are ancient reptiles which evolved with the dinosaurs. Today there are eight species in the world. Over the centuries, they have all been systematically exploited. There is the Leatherback, the biggest of the world's turtles, growing up to seven or eight feet in length, and weighing upto a tonne. The Green Turtle, long exploited for its meat, is known as the "soup turtle". The Hawksbill — the prettiest of the turtles, has been killed indiscriminately for its carapace (shell) which is used to make tortoise-shell articles. In fact in some places, the turtles were heated alive over a fire and the shell peeled off, because it was believed that it would grow back. In parts of south India, the blood of the Hawksbill is believed to have medicinal value; as soon as the turtles are unloaded from the