

Little Olives, coming alive...

On the 25th of December, we RHATC fellows got an opportunity to visit and observe the turtle hatchery near Kadaladi-Mundal village at 9.1416° N, 78.5913° E in Tamil Nadu at noon. The forest guard from Ervadi village, Ramnathpuram District, Mr. Somu Prasad, navigated us to reach there. The hatchery is managed by the local forest department, and well-managed and taken care of by staff Mr. Selvam and Mr. Murugavel, they are officially appointed by the forest department as the Anti-poaching wardens (APW). They contribute to the conservation of the Olive Ridley *Lepidochelys olivacea* species also commonly known as the Pacific Ridley Sea turtle which is one out of five turtle species in India.

Background

The smallest and most prevalent marine turtle is the Olive Ridley (*Lepidochelys olivacea*). Its shell has an olive-green shade, which gave rise to this name. This turtle can reach a length of 80 cm and weighs less than 50 kg. Females have a little more rounded carapace than males, although they both reach the same size as adults. The Olive Ridley Turtle has five to nine pairs of

costal scutes and a pair of claws may be seen on each flipper. Males have a pair of curved claws in their fore flippers, helps them to hold the females while mating. Compared to those found in the Pacific and the Atlantic, Olive Ridley Turtles in the Indian Ocean are typically smaller.

Right now, they are the most common sea turtles in India. Mass nesting of Olive Ridley Sea turtles are found in Odisha from three places of the river mouth region, namely Gahirmatha, Devi, and Rushikulya along the coast of the Bay of Bengal. This mass nesting event known as “arribada” occurs when thousands of these sea turtles move to their breeding grounds at once to mate and lay their eggs. The largest turtle rookery in the world is Gahirmatha. Every year, between 100,000 and 500,000 turtles lay their eggs there, but after the 1990, there hasn’t been a significant mass nesting.

Sea turtles face a lot of threats ranging from accidentals catches to illegal poaching. They are caught in trawl fishing nets, near-shore mechanized fishing and suffer accidental drowning. In the past turtles were caught and





meat was consumed, eggs were harvested for consumption as well but since 1990's sea turtle harvest is banned. The nests are also destroyed by domestic animals like dogs and feral pigs. Another threat is ghost gear wherein sea turtles get entangled in it resulting in amputation of limbs, severe injuries and even death.

Owing to the drop in nesting in the 1990's many researchers have conducted studies on the Olive Ridley turtle nesting in Odisha and this has resulted in this species becoming more popular among the general public as well with an increase in awareness towards the plight of this species. Still a lot more work needs to be done to build a strong conservation strategy for this beautiful species similar to other charismatic species such as terrestrial large mammals.

Due to the restricted number

of locations where they nest, any disruption to even one of those beaches might have a significant impact on the overall population. As prey, consumers, competitors, and hosts, sea turtles play a variety of known functions in the development and maintenance of the structure and dynamics of marine ecosystems. They are also a crucial component of interspecific interactions in marine ecosystems. Additionally, they play a vital role in the movement of nutrients and energy both

within and across habitats, and they have the power to significantly alter the physical makeup of marine ecosystems. They are a fundamental link in marine ecosystems and help maintaining the health of coral reefs and sea grass beds.

So, the conservation of this species is very important. In India, forest departments, organizations and communities have come forward to protect the Olive Ridley Turtle. And one such initiative is the setting up of turtle hatcheries. Since 1992, Sahyadri Nisarga Mitra





(SNM) has operated in Konkan as a recognised organisation dedicated to nature study, education, and protection. And since 2002, they are maintaining hatcheries in Velas, Mandangad taluka, Ratnagiri District, Maharashtra. Nesting beaches at Cuthbert Bay Sanctuary, Middle Andman Island, and other locations are moved to permanent hatcheries placed periodically along the coastline. Olive Ridley Turtle conservation activities are also seen along the Nagapattinam coast, Tamil Nadu, India. Local conservationists move eggs to a protected location or hatchery due to the significant anthropogenic and animal impact occurring on the Chennai coastline. East and west coastlines of India are home to *Lepidochelys olivacea* nests, with the state of Odisha hosting most of them. Olive Ridley Turtles sometimes lay their eggs along the coast of Andhra Pradesh, the state located directly south of Odisha, and it is thought that this area is in the turtles' migratory path. All these efforts are resulting in the conservation of Olive Ridley Turtles and hatcheries play crucial role in doing so.

Generally, Olive Ridley starts migrating toward shore from the month of December to March. Here, March will be the peak point of migration. Now that you have a good understanding of the status of the Olive Ridley turtles in India let me get back to our story!

During our visit to Kadaladi, as part of the Ram Hattikudur Advanced Training in Conservation, we also had the unique opportunity to observe a turtle hatchery. The staff recorded 30 turtles crawled to shore in last year. The transfer of the turtle's eggs from the nesting site to the hatchery must be done while they are still in their fresh, jelly-like form. Eggs must only be moved within a few hours of being laid (some studies recommend just two hours). After this time, there is a risk that membranes will be ruptured and the embryos will die.

The total area of the hatchery was approx. 16*16 sq. ft. It was barricaded with a green coloured fence made up of palm tree twigs of height 4–5 feet. They have made the row

by tying rope, in that row each artificial nest is 2 x 2 x 1½ cubic feet and will be separated by 2 feet between each of them. On our visit, we got to see one artificial nest enclosing 128 eggs. Also, we got to know amazing facts about the behaviour of an Olive Ridley Turtle. After laying eggs, the mother turtle dug out 3 to 4 more nests to fool the predator. They locate the turtle's mount in the sand by following its footprints. By softly poking the nesting site they will check whether the eggs are there or not. Then they take out eggs and within half an hour, shift them to artificial nests at the hatchery. We were of the understanding that while shifting to an artificial nest, it's important to maintain the order of eggs found in their original natural nest. And from our interaction with the staff, we realized that they too are aware of these intricate matters and ensure to keep up with it. They attempt to duplicate the nest as closely as they can by taking measurements of the depth, breadth, and length of the original site. In the nest, they also gather sand to fill it up in the hatchery. Until now the Gulf of Mannar reserve forest department has contributed to the successful hatching of 50,000 eggs in the past 9 years from different ranges of the reserve.

The hatchery is also covered by tarpaulin to provide extra care from dogs and to increase the survival rate of hatchlings. From our conversation with the staff we got to know that they have witnessed 90% survival rate. After creating artificial nests, the turtles would hatch between 45–50 days. The natural nests made by the turtles on beaches are unprotected since they are out in the open for easy extraction of eggs from local communities for consumption, predation by domestic animals like dogs, and other activities on the beaches. They made several more points regarding how humans and dogs are currently a hazard to turtle hatchlings. So, the staff ensures to guard the hatchery all the time. Around the hatching period, they stay

more vigilant. They make sure that one should be present at the site. The hatchlings hatch around 3–4 am in the early morning. If it rains during the hatching period, then it affects and spoils the eggs.

They are doing a great job and besides that, they had also arranged a community awareness program, for the last 10 years, and now they have educated people. From all this conversation we got to learn so many things.

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