Olive ridley turtle conservation activities along the Nagapattinam coast, Tamil Nadu, India

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Introduction

Nagapattinam district in Tamil Nadu has a coastline of 161 km. Coastal characteristics vary along this stretch. For example, the 40 km coastal stretch from Point Calimere to Voimedu is primarily swampy and there are no sandy beaches. Northwards from Point Calimere up to Kollidam, a distance of 120 km, the stretch is predominantly sandy with a few swampy patches in Thirumullaivasal and Palaiyar. Results of surveys carried out reveal that sporadic nesting of olive ridley turtles occurs in the sandy stretches along this coastline from Point Calimere in the south up to Chennai in the north during the nesting season between December and March. The Government of India through its Ministry of Environment and Forests and the Wetland and Wildlife Management Division funds various olive ridley conservation projects every year along this coast. A description of various activities carried out along the Nagapattinam coast is given below.

Establishment of Olive Ridley Protection Camps:

Every year Olive Ridley Protection Camps are established in important nesting sites during the nesting season from December to March. Two 'protection watchers' are stationed at each of these camps and the camps are equipped with tents, cots, torches and other accessories (Figure 1). The camps are set up for the following purposes:

- To protect nesting sites and nests from disturbance by humans and animals,
- To protect the eggs from illegal take for consumption by humans,
- To protect the eggs and hatchlings from predation by domestic and wild animals, and
- For collection of eggs and translocation to hatcheries.

Figure 1: An olive ridley protection camp with 'Protection Watchers' at Nagapattinam, Tamil Nadu. Photo: V. Thirunavukarasu, 2008.

Watchers in these camps are on duty round the clock and ensure protection to turtles that visit these sites. During the 2009 nesting season, nine such protection camps were established. The locations of the camps were selected based on established records and local knowledge of fishermen. The camps were set up in the following locations (Figure 2):

1. Point Calimere
2. Keechan Odai
3. Manian Theevu
4. Arukatuthurai
5. Pushpavanam
6. Tharangambadi
7. Vanagiri
8. Koolaiyar
9. Madavamedu

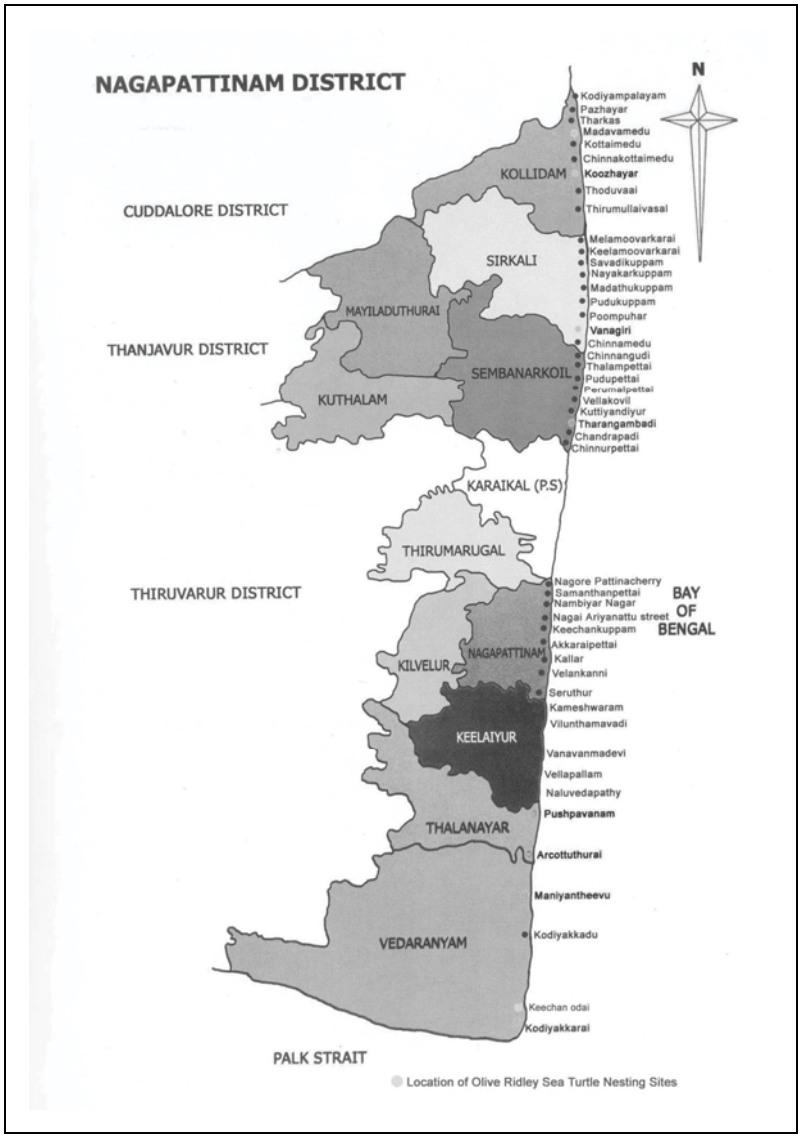

Figure 2: Location of olive ridley turtle nesting sites in Nagapattinam
Courtesy: Asst. Director, Survey and Settlements, Nagapattinam

Turtle egg collection and hatchery management:

The turtle watchers perambulate the coast for a distance of 5-8 km on both sides of the protection camp and are trained to collect turtle eggs. The collected eggs are immediately translocated to a hatchery for incubation. During the 2009 nesting season, hatcheries were established in five important sites:

1. Point Calimere
2. Tharangambadi
3. Vanagiri
4. Koolaiyar
5. Madavamedu

The collected eggs are incubated for 45-52 days and after the hatchlings emerge, they are released safely back into the sea. This activity has been carried out for the last four years. The details of eggs collected and hatching success is given in the table below (Table 1).

Table 1. Collection of eggs and hatching success during 2005 – 2009

Sl. No.	Year	No. of eggs collected	No. of eggs hatched	No. of young ones
1.	2005-06	680	452	452
2.	2006-07	487	292	292
3.	2007-08	1755	1149	1149
4.	2008-09	5224	5100	5100

Figure 3: An olive ridley turtle hatchery in Nagapattinam
Photos: V. Thirunavukarasu, 2008.

Olive ridley turtle nesting site management:

The tsunami that struck the coast in December 2004 left more than 6500 people dead along the Nagapattinam coast alone and caused enormous damage to property. Many post-tsunami assessment studies claimed that the existing coastal shelterbelt plantations and bio-shields had protected life and property in certain areas. Hence, large scale coastal afforestation activities were carried out from 2005 onwards by raising coastal shelterbelt plantations with *Casuarina equisetifolia.* Later however, it was found that some of the trees, having been planted near the high tide line, were hindering the movement of the olive ridley turtles that had come ashore to nest. In October 2008, three important nesting locations were identified and the grown up *Casuarina equisetifolia* trees were removed to facilitate turtle nesting. A minimum distance of 25 m from the high tide line was ensured for turtle nesting. The details of this activity are given below (Table 2):

Table 2. Details of removal of *Casuarina equisetifolia* from the three important nesting sites

Sl. No.	Name of the location	No. of trees removed
1.	Arukatuthurai	48
2.	Pushpavanam	61
3.	Naluvedapathi	204

Awareness activities:

The Tamil Nadu Forest Department has produced a VCD on olive ridley turtles which has been put up for sale at the Point Calimere Wildlife Sanctuary. This VCD has also been screened on many occasions to school and college students, fisherfolk and tourists, as part of the State Forest Department's conservation awareness and education activities.

On the rescue operations and rehabilitation carried out on three olive ridley turtles from Mumbai, Maharashtra, India

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Sea turtles are found all along the coast of India, including the Lakshadweep and Andaman & Nicobar Islands. Five species inhabit the Indian seas; *Dermochelys coriacea* (leatherback turtle), *Eretmochelys imbricata* (hawksbill turtle), *Chelonia mydas* (green turtle), *Lepidochelys olivacea* (olive ridley turtle) and *Caretta caretta* (loggerhead turtle) (Rajagopalan *et al*., 1996). These five species of sea turtles, distributed widely all over the world, are highly endangered (Chhapgar, 2005). There are four listed species of sea turtles that occur in Maharashtra, India; hawksbill turtle, green turtle, loggerhead turtle and olive ridley turtle (Daniel, 1983; Bhaskar, 1984; Das, 1985). Giri (2001) has made a detailed survey of the various species of sea turtles found in Maharashtra. Katkar (1991) has reported nesting site of olive ridley observed on the beach of Palshet, Ratnagiri, Maharashtra. Green and olive ridley turtles are known to nest along parts of the coast of Maharashtra such as Alibag, Dahanu, etc., and in Ratnagiri (Gole, 1997; Kar & Bhaskar, 1981; Shaikh, 1984; Giri & Chaturvedi, 2006). In Mumbai they usually nest at Backbay, Juhu Chowpati, Girgoan Chowpati, Governor's Gate, Shivaji Park to Mahim, Juhu to Versova Mud Island, Gorai, Marve, Manori, Worli and Vashi Creek (Chhapghar, 2005; Kar & Bhaskar, 1981; Giri & Chaturvedi, 2006).

Olive ridley turtles are categorized as *Vulnerable* on the IUCN Red List (IUCN, 2002) and are included in Schedule I of the Indian Wild Life (Protection) Act, 1972.

During the months of June – July 2008, three olive ridley turtles (*Lepidochelys olivacea*) were found stranded on the Mumbai coast in Maharashtra. These turtles are locally called '*Kasav'* (Karbari *et al*., 1986). Details of these turtles such as morphometric measurements, type of capture, etc. are given in Table 1. There are reports of accidental stranding and inadvertent landings of marine turtles along the Maharashtra coast (e.g. Katdare & Mone, 2005), but a majority of such instances have not been properly documented. Some of the documented instances of turtles landed in Maharashtra are provided in Table 2.

The first turtle, measuring 50.5 cm in carapace length and weighing 20 kg, was found stranded at Juhu Chowpati beach on 29th June 2008 at around 9 pm (Figure 1). A passerby informed the Bombay Society for the Prevention of Cruelty to Animals (BSPCA) of the stranded turtle. The BSPCA immediately arrived at the spot and administered first aid to the turtle. They then took it to the Sakarbai Dinshaw Petit Hospital for Animals (SDPHA) situated at Parel, which is a 127 year old veterinary hospital in the heart of Mumbai city dedicated to the cause of selfless service towards the welfare of abandoned and injured animals. The right fore flipper was cut off completely and it was observed that the turtle was very weak and could barely move its body. The turtle was treated with antibiotics and food supplements at the hospital.