



**A SURVEY OF NESTING OLIVE RIDLEY SEA TURTLE
IN CHENNAI COAST**

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Introduction

Sea turtles are large marine reptiles that have survived for at least 120 million years. Having evolved from land based ancestors these large reptiles need to complete their breeding cycle on land. The olive ridley (*Lepidochelys olivacea*) is the smallest of sea turtles off the coast of India and is the sea turtle most often found in Chennai. In the month of December the adult turtles migrate large distances and assemble near the coast of Chennai to breed. After fertilization the gravid female crawls ashore to dig a flask shaped nest in the sand with her back flippers. Close to a hundred eggs are laid in the nest before the female covers the nest and returns to sea. The eggs are incubated by the sun's heat and hatchlings emerge after 54 to 56 days. They immediately dash towards the sea in the cool of the night to escape predators like feral dogs, crabs and owls. There are predators in the sea also and very few hatchlings attain maturity. This is nature's way of maintaining a balance in the adult population since a greater survival rate will lead to over population.



Had everything gone by nature's way in Chennai the beach could have been an ideal nesting ground for the olive ridley. But due to destruction of habitat by vegetation accelerated by human and natural factors, construction of concrete structures close to the high tide line, beach front lighting, poaching of eggs and drowning of adult turtles in trawler nets, the olive ridley of Chennai is in real danger of becoming locally extinct. Conservation measures were taken in early seventies by the Madras Snake Park Trust by collection, relocation and incubation of eggs in a hatchery. The hatchlings that emerged were safely released into the sea. Over the years this initiative was followed up by the Central Marine Fisheries Research Institute (C.M.F.R.I), Tamil Nadu Forest Department and now by Student's Sea Turtle Conservation Network (S.S.T.C.N).

Objective

The present study intends to identify the existing threats to the sea turtle population of Chennai coast, after all these years of conservation work.

Study area

South Chennai is an important nesting ground of the olive ridley recognised worldwide. A 60 km stretch of beach south of Besant nagar extending up to Mammallapuram was surveyed to determine the status of the habitat and the adult population. The ground vegetation consists of *Pandanas*, *Spinifex* and *Ipomea*. Lots of fishing hamlets are present at frequent intervals. *Casuarina* and cocunut plantations are present. There is a lagoon at Muttukadu. Development activities in the form of residential areas and small-scale industries are observed.

Study period

Peak nesting is related to the phase of the moon and hence the study was done between new moon on January 24th to full moon on February 8th in the year 2001. The nesting period in Chennai starts in late December and ends in March.



Method

Starting from Besant Nagar beach, a 5 km trail was surveyed every day in the morning during the study period. Dragmarks left by the nesting turtle was taken as an indication of the presence of a nest. A nesting site that had a human disturbance and a flask shaped depression was considered a poached nest. No nests were collected during the study period. Morphometrics of adult turtles that drown in fishing nets and get washed ashore were recorded in a data sheet.

Results

S.no	Sector	Number of dead turtles	Number of nests
1	BesantNagar to Neelankarai	5	1
2	Neelankarai to V.G.P. Golden beach	3	1
3	V.G.P. Golden beach to Uthandy	-	-
4	Uthandy to Kanathur	1	-
5	Kanathur to Muttukadu	-	-
6	Kovalam to Crocodile Bank	2	6
7	Crocodile Bank to Nemily kuppan	4	4
8	Nemily Kuppan to Pattipulam	4	-
9	Pattipulam to Mammalapuram	-	1

Discussion

Life in the seashore is dynamic. The Chennai coast is no exception and is continuously in the process of change. The overgrowth of ground vegetation, and increase in residential areas are some of the major changes observed. Traditional fishermen who were previously satisfied with their catch are turning to other professions. This change in the socioeconomic structure has made fishermen take to poaching of sea turtle eggs which otherwise would enjoy traditional protection. Thirteen nests were sighted during the study period and all of them vulnerable to poaching. The nests



are located from the dragmark left by the lower shell (plastron) and the back flippers. Nests were found 10-50 m away from the high tide line. Maximum number of nests was sighted in the Kovalam-Crocodile Bank sector. This sector was devoid of any human disturbance. Besant Nagar – Neelankarai sector was regularly monitored by volunteers of S.S.T.C.N. and close to a hundred nests were collected during this season. Nineteen dead turtles that had drowned in fishing nets were washed ashore. All the factors detrimental to sea turtle population that were observed in the study are listed as follows.

1. Opportunistic poaching of eggs for local consumption.
2. Drowning of adult turtles in fishing nets.
3. Chemical pollution from small-scale industries.
4. Beach front lighting which disorients nesting turtles and hatchlings.
5. Overgrowth of vegetation like *Ipomea*.
6. Sand mining.

There are some places past Kovalam where wild nesting and hatching take place due to the remoteness of these areas. A dead juvenile hawksbill sea turtle (*Eretmochelys imbricata*) was found near Kovalam, which is rare sighting in this part of the beach.

Conclusion

All the detrimental factors that existed in the early seventies are existing even today and it is only through commitment and dedication that the olive ridley can be saved from extinction.

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PRELIMINARY SURVEY OF THE REPTILIAN FAUNA OF MOUNT ABU WILDLIFE SANCTUARY AND SNAKE CONSERVATION EFFORTS IN MOUNT ABU TOWN

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The Mount Abu Wildlife Sanctuary adjoins Gujarat border, situated in the Sirohi districts in southern Aravallis of Rajasthan State. It is situated between 24° 30' N and 24° 43' N and between 72° 34' E and 72° 52' E. The area is covered by pre-Aravallian gneiss. These rock formations are of igneous origin. The Abu hills are almost entirely made up of hard Erinpura granite.

Upper reaches of Abu consists of semi-evergreen forests while foot-hills possess deciduous type of forests. It is the only sanctuary in Rajasthan, which possesses semi-evergreen type of forests. Mt. Abu town is the only hill station in the state of Rajasthan.

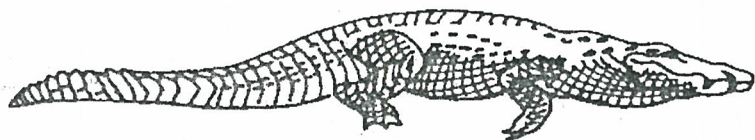


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OBSERVATIONS ON SNAKES IN THE SUBURBS OF CHENNAI

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My first encounter with a snake during my school days was when Nanganallur was a slowly developing countryside. A friend of mine and I were watching large pied wagtails (*Motacilla maderaspatensis*) foraging for insects in an open ground when a large snake appeared. The birds got excited and started pecking the snake. The snake later entered a burrow. The snake was identified as a rat snake (*Ptyas mucosus*) from a picture in a poster in the Chennai Snake Park. Over the years, Nanganallur had changed from a rural countryside to a large residential area. Man and snake encounters, became inevitable resulting in the death of several snakes. We are silent spectators to the massacre that was happening around us. There is an urgent need for protecting snake habitats on the outskirts of Chennai that are being endangered by urbanisation.

Observation

Observations were made in representative habitats in four localities in the outskirts of Chennai to determine the snake populations that will be endangered by urbanisation. Observations were made in the evenings after the monsoon rains in November, 2000. The places studied were Perungalathur, Mudichur, Manimangalam and Kovilapakkam. These areas have similar topography. The topography consisted of lakes surrounded by paddy fields. Water is available from the wells and the lake. The level of water in the wells is maintained at a constant level by the nearby lakes. The various representative habitats that were observed were



1. Periphery of lakes
2. Vegetation on the bunds of lakes
3. Paddy fields
4. Wells
5. Vegetation around the wells and
6. Water on the side of the roads.

The olive keelback (*Atrietium schistosum*) was the only snake found in the periphery of lakes. The other water snake that was common was the checkered keelback (*Xenochrophis piscator*) which was often seen basking on the footsteps of wells. Striped keelback (*Amphiesma stolata*) is normally seen hunting for prey late in the evening. Rat snake (*Ptyas mucosus*) is frequently seen in the vegetation at the center of the fields.

Unlike the rat snake, the Indian cobra (*Naja naja*), the saw-scaled viper (*Echis carinatus*), the Russell's viper (*Daboia russelli*) and the common krait (*Bungarus caeruleus*) are not only venomous snakes but are seldom seen during the day since they are nocturnal. The Indian cobra could be seen on its burrow in the various habitats. The saw-scaled viper and the Russell's viper could not be seen on any of the visits. There were two sightings of the common krait in the study area. One was in a burrow in Perungalathur and the other was near a well in Manimangalam. Both these sightings are indicators of an ecosystem rich in biodiversity and hence the need to protect such habitats. Some non-venomous snakes like the common sand boa (*Eryx conicus*), banded kukri (*Oligodon arnensis*) and the vine snake (*Ahaetulla nasutus*) were observed to have specific habitat preferences. Young ones of vine snake and cobra were seen after the monsoon rains. There was only one sighting of the bronze back tree snake (*Dendrelaphis tristis*).

Conclusion

Urbanisation leads to the slow but steady transformation of a rural countryside into an urban locale. Urbanisation could be seen all places in



the study area. Habitats that were once paddy fields are marked for construction of houses. The snakes that are present there will be forced to encounter humans. This will result in the extinction of local population of snakes similar to what was seen in Nanganallur ten years back. There is no immediate solution to this problem since the root cause of this lies in the attitude of the society. Unless there is a change in the priorities of the society there will always be a conflict between development and nature. Real estate development does not happen in the entire place but only in selective areas. The remaining areas could be protected from real estate development by careful monitoring. Traditional communities should be made to play an active role in the conservation of the agro-ecosystem.

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