



# REPORT ON THE FIRST NATIONAL CONFERENCE ON MARINE TURTLE CONSERVATION, KADMAT, LAKSHADWEEP, INDIA, 2<sup>ND</sup> AND 3<sup>RD</sup> DECEMBER, 2019

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## INTRODUCTION

The 1<sup>st</sup> National Conference on Marine Turtle Conservation was held on the 2<sup>nd</sup> and 3<sup>rd</sup> December, 2019, in Kadmat, Lakshadweep. The conference covered two primary themes, namely:

1. Research and Monitoring; and,
2. Conservation Management and Conflict Mitigation

The aim of the conference was to bring together research and scientific knowledge pertaining to sea turtle conservation across the country to synthesise new policies and strategies for the conservation and management of marine turtles and their respective habitats. The themes were to be explored through a combination of plenary speeches, panel discussions, as well as presentations from the participants. The presentations included talks from representatives from NGOs and members of the Forest Department for each coastal state of the country on their specific conservation programs. This was followed by studies being carried out by research bodies in the form of presentations and posters.

Invitations for the conference were sent out to the Chief Wildlife Wardens of all coastal states, representatives from NGOs, research scholars, and delegates across the country. However, due to unforeseen weather conditions, many members of the Forest Department as well as senior experts and scientists were unable to reach the venue. Though their presence and contributions were greatly missed, this gave the participants more time to discuss the specifics of their projects in greater detail.

## INAUGURAL SESSION

The first National Conference on Marine Turtle Conservation (SAVE TURTLE-2019) was inaugurated by Shri. Dineshwar Sharma, Hon'ble Administrator, Union Territory of Lakshadweep Administration at Kadmat Island on behalf of the Union Minister for Environment, Forest & Climate Change, Shri. Prakash Javadekar. The Member of Parliament Shri. P.P Mohammed Faizal, following the ceremonial lighting of the lamp, proceeded over the inauguration programme in the presence of Shri. Damodhar A.T., IFS, Secretary Environment & Forest and Chief Wildlife Warden, Union Territory of Lakshadweep Administration and Shri. Hassan Badumukkagothi, the President cum Chief Counsellor of Lakshadweep, and other dignitaries. Following this, the First Annual Report of (2018-2019) of the Department of Environment & Forest, was released by the Hon'ble Administrator. The inauguration ceremony highlighted the importance and need for the conference.

## DAY 1: TECHNICAL SESSION

After the inauguration, the scheduled presentations began with the focus on the West coast of India as well as the islands. Presentations were made by representatives from the states of Gujarat, Maharashtra, Goa, Kerala, Karnataka, and the Andaman & Nicobar Islands.

### Gujarat

**Speakers: Mr. Senthil Kumar, IFS, Forest department representative & Mr. Dinesh Goswami and Mr. Jignesh Gohil, Prakruti Nature Club.**

For the state of Gujarat, Mr. Senthil Kumar, IFS, spoke

about relocation of nests, with an emphasis on the Okhamadi and the Madhavpur and the threats that they faced. Mr. Goswami provided an overview of the work conducted by Prakruti Nature Club with respect to the relocation of nests and protection of nesting grounds of sea turtles as well as their recognized and acclaimed conservation efforts with respect to whale sharks.

## **Maharashtra**

**Speakers: Mr. Mohan D Upadhye, The Mangrove Cell Foundation & Ms. Sumedha Korgaonkar, Wildlife Institute of India**

Mr. Mohan D Upadhye, representing the Mangrove Cell Foundation highlighted the various threats that turtles face along the Maharashtra coast, two of the most significant being the poaching of eggs and the entanglement of turtles in ghost nets. The Foundation along with the forest department has also launched joint efforts to include locally trained divers employed for the removal of ghost nets. They have also collaborated with the State Fisheries Department to start a compensation scheme for the conservation of marine protected species in the state. Under this scheme, a few olive ridley turtles and green turtles were rescued and released by fishermen. Another key aspect of turtle conservation in Maharashtra is the Velas turtle festival. This ecotourism venture is run locally and, thus, provides an opportunity for local communities to become involved with the conservation efforts while providing them with some monetary benefits.

Ms. Sumedha Korgaonkar from the Wildlife Institute of India spoke about the importance of nesting temperatures in determining hatching success as well as the shift in nesting seasons. To understand this effect, in Maharashtra, a low cost, indigenously-developed, temperature data logger was installed inside hatcheries on seven nesting sites. These data loggers collected data from nests simultaneously using thermo-sensors at regular time intervals. Moreover, the data loggers could be paired with an advanced GSM system and thus provide new opportunities for wider application in hatchery management.

## **Goa**

**Speaker: Ms. Marishia Rodrigues, Terra Conscious**

Marishia Rodrigues represented the organization Terra Conscious and focused on the Marine Wildlife Stranding Network, Ocean Watch- Goa project, in collaboration with the Forest Department and other agencies. Initially, the focus of the project was to provide communities

with training on marine mammal strandings. However, this went on to include turtles due to the high number of turtle strandings that were documented. Veterinarians trained in necropsy also assist the teams while trying to rescue stranded marine wildlife. Terra Conscious also engaged with the Forest Department to assist with conservation initiatives, such as the implementation of capacity building programmes as well as discussing the creation of a specific marine division to provide logistic support for the conservation of marine organisms.

## **Karnataka**

**Speakers: Mr. C. Doreswamy, Oasis Foundation & Mr. Ravi Pandit, Canara Green Academy**

In Karnataka the Forest department primarily implements most of the turtle conservation projects in the state. They carry out awareness activities, construction of hatcheries and coastal cleaning programmes. To this end, the outreach activities conducted in school and colleges comprise teaching students, faculty, etc. about the life cycle of turtles, the need for conservation, etc. In 2015 and 2016, no nesting was reported in the Karnataka region due to harbour construction that started taking place. Since this period, there has been an increase in pollution across the coastal areas. Furthermore, there has also been an increase in the number of injured turtles due to an increase in the number of trawlers. These aspects of turtle conservation were highlighted by Mr. C. Doreswamy from the Oasis Foundation. Apart from this, the Canara Green Academy identified local poachers and conducted a series of meetings and community-workshops for handling of nests, hatcheries etc. Many of the poachers now serve as informants and grassroot-level workers in turtle conservation activities. Mr. Ravi Pandit also presented a poster highlighting the effectiveness of this system at the conference.

## **Kerala**

**Speakers: Mr. Sudheer Kumar, Naythal**

Mr. Sudheer Kumar, from the organization Naythal, touched upon the various activities undertaken by the organization. Naythal operates in the region of Thaikadapuram and focuses on habitat protection through the conservation of beaches and the protection of shoreline biodiversity. They conduct biodiversity assessments every month as well as coastline and pelagic surveys with the help of vehicles and vessels.

## Andaman and Nicobar Islands

### Speaker: Mr. Adhith Swaminathan

The Andaman and Nicobar archipelago currently supports the only nesting populations of leatherback turtles in India. An overview of the discovery of nesting beaches and initial surveys by Satish Bhaskar, the threats faced by turtles, as well as the discovery of new mass nesting sites in the islands was provided. A long-term monitoring camp has been established in Little Andaman Island with a focus on tagging, habitat monitoring, satellite telemetry and population genetics. The findings of this programme indicate a healthy nesting population of leatherbacks. The findings also included the post-migratory routes of leatherback turtles from the Andaman Islands spanning the entire Indian Ocean. Increased pollution, depredation by water monitors, feral pigs, etc., and the practice of line fishing were cited as some of the biggest threats to turtles. The population, which was once thought to be declining, has shown a stable trend in the nest numbers with some annual variation in recent years. With respect to this, hatchery management and monitoring protocol training programmes are also conducted for certain members of staff of the Andaman and Nicobar Islands Forest Department.

## Lakshadweep Islands

### Speakers: Dr. Rohan Arthur, Nature Conservation Foundation & Dr. Syed Ali, Department of Environment & Forests, Lakshadweep.

The final presentation of the day was made by Dr. Rohan Arthur of Nature Conservation Foundation concerning the association of green turtles, seagrass communities as well as the lagoon health in the Lakshadweep Islands. The green turtle populations in Lakshadweep provide an interesting case for conservation. While populations in Lakshadweep had greatly reduced in the past, the implementation of a hunting ban allowed the populations to recover. Consequently, the feeding behaviour of green turtles has placed the seagrass meadows of the ecosystem at risk. The nature in which green turtles systematically deplete seagrass meadows and cause significant changes in their compositions at one island before moving to the next island as the resource collapses was showcased. Sustained grazing was found to affect the seagrass growth rates, density of shoots, and shifts in species dominance amongst seagrass competitors. Thus, green turtles were identified as being responsible for the modification of not only habitat structure but also community compositions.

In order to mitigate this conflict, the Department of

Environment and Forests, Lakshadweep presented the activities covering conservation and management projects and rescue and awareness programmes that are conducted. Apart from this, GIS is also being used for the mapping of seagrass meadows. The use of tetrapods placed along the beach to prevent erosion was shown as a barrier to nesting females and alternate measures to prevent this were discussed.

### DAY 1: EVENING SESSION

The evening session gave the participants the opportunity to engage with the posters and the artwork that was prepared as part of a painting competition for the conference. The day ended with the screening of six short documentaries by members of the Prakruti Nature Club, TREE Foundation, Visakha Society for Protection and Care of Animals, and Dusty Foot Productions.

### DAY 2: CONSERVATION MANAGEMENT AND CONFLICT MITIGATION SESSION

The second day of the conference began with presentations by State representatives from Tamil Nadu, Andhra Pradesh and Odisha followed by research presentations by individual participants.

## Tamil Nadu

### Speaker: Mr. V. Arun, Students' Sea Turtle Conservation Network

In Chennai, conservation of turtles is largely undertaken by the Students' Sea Turtle Conservation Network (SSTCN) which has operated in the region for over 30 years. The organization was founded in 1988 and operates across a 14km stretch of the coast. Its key function is to spread awareness about turtle conservation through the use of public walks. At the conference, the organization was represented by one of its core members V Arun. While the number of turtle nests have shown a gradual increase over time, there has been a spike in the number of dead turtles found in the last five years. Following the Indian Ocean tsunami of 2004, the hatching success of the nests also dropped to 21%. However, through various techniques, such as using jute to shade hatcheries, etc. the hatching success has slowly improved. Apart from this, illegal take in the region was also reported to have decreased.

## Andhra Pradesh

### **Speaker: Hari Krishna, Visakha Society for Protection and Care of Animals.**

The state of Andhra Pradesh was represented by Hari Krishna from the Visakha Society for Protection and Care of Animals. Hari Krishna provided information pertaining to the documentation of dead turtles, presence of plantations along the coast, as well as the awareness campaigns and clean-up drives undertaken by the organization. Most importantly, the organization has worked closely with various stakeholders in the region to significantly reduce cases of illegal take, where turtles were often consumed or sold in local markets for their meat, shells, etc. The organisation has also set up five hatcheries along the 100km coast, where they practiced *ex situ* conservation till 2010 and are currently in the process of building a sixth hatchery.

## Odisha

### **Speakers: Mr. Ashis Senapati, Project Swarajya & Dr. Sudhakar Kar, Odisha Forest Department**

Mr. Ashis Senapati from Project Swarajya and Dr. Sudhakar Kar from the Odisha Forest Department provided overviews of conservation in Odisha. The mass nesting populations (also known as *arribadas*) of olive ridley turtles in the rookeries of Odisha are primarily observed at beaches in two parts of the state: one in the north (Gahirmatha- the world's largest rookery for the olive ridley sea turtle) and the other in the south (Rushikulya). While Dr. Kar provided details pertaining to the historic nature of *arribadas* in Gahirmatha and Rushikulya as well as the numbers associated with each mass nesting event; Mr. Ashis Senapati highlighted a significant concern about the *arribada* in Odisha causing conflict with traditional marine fishers. Many fishers lost their traditional occupation as a result of Gahirmatha being declared a marine sanctuary. More recently, an annual seven-month fishing ban (November 1<sup>st</sup> to May 31<sup>st</sup>) has been imposed across a 20km stretch of Gahirmatha coastline. This has caused widespread resentment amongst fishers as it is seen as a threat to their fishing rights. Poor weather conditions also affect the nature of the catch and fishers do not receive adequate compensation for the same; the 7,500-8,000 INR yearly compensation for the loss during the fishing ban is not adequate. This has also caused tension between the local fishers and environmentalists who support the implementation of the ban.

## Research

### **Supraja Dharini, TREE Foundation**

The representative from TREE Foundation, Ms. Supraja Dharini, presented her work covering the states of Odisha, Andhra Pradesh and Tamil Nadu. Apart from conducting training workshops for members of the Forest Department and the Coast Guard, she also stressed the usefulness of art when conducting awareness programmes. Ms. Supraja also highlighted the importance of the work being conducted by the recently formed Marine Mammal Stranding Network. In Andhra Pradesh, members of the Sea Turtle Protection Force work closely with the various stakeholders, including the Fisheries Department, to encourage enforcement of laws on trawl boats. Those who survive often need to have a limb amputated to be released. In order to mitigate this, trawl fishers are now being encouraged to implement sustainable fishing practices, including the Turtle Excluder Devices, to reduce the capture of sea turtles. Ms. Supraja also presented a poster containing some of these findings.

### **Chetan Rao, Dakshin Foundation**

Mr. Chetan Rao from Dakshin Foundation covered the offshore monitoring of turtles in Rushikulya and the Devi river mouth in Odisha. Turtles begin to appear from early December and remain nearshore till February/ March throughout the 480km long Odisha coastline. He provided details of the nature of *arribadas* in the region as well as preparation of transects for offshore monitoring. In order to better understand the offshore biology of these populations, surveys were conducted in the offshore waters of Rushikulya where turtles and mating pairs formed congregations around the Rushikulya mass nesting beach. Turtles were monitored during the breeding season using a line-transect approach and breeding congregations were found from late January to March. These reproductive patches increased in density from December till March (the maximum number of turtles was observed in Rushikulya). Such assessments are extremely valuable as they help identify key areas where the turtles congregate and, hence, can be used to reduce the risk of turtles being caught as bycatch.

### **Al Badush, Nature Conservation Foundation**

Representing the Nature Conservation Foundation, Mr. Al Badush further expanded on the conflict that is taking place between fishers and green turtles in the Lakshadweep Islands. When fishers started fishing on the reef in 2005, depletion of seagrass increased conflict with

the turtles. In the initial years, green turtles were viewed negatively, with many fishers believing that culling the turtles was the only way to solve issues relating to the loss of livelihood and decline in fish catch. However, more recently, as the green turtle populations have evened out among meadows across the Lakshadweep atolls, other factors have been identified as being the main reasons for the decline in fish catch. These include cyclones and fishing boats from the mainland. In general, perceptions of change were found to depend on the most proximate drivers in the eyes of fishers.

#### **Mr. Sumanth Bindhumadhav, Humane Society International**

Mr. Sumanth Bindhumadhav presented work that the organisation carries out in Odisha in collaboration with the organization Action for Protection of Wild Animals. The two organisations work hand in hand to engage with local communities at the nesting sites of Astarang, Siali,

and Pir Jahania. Many members of these communities become part-time staff, engaging with activities such as setting up of hatcheries, cleaning up the nesting site pre-season, and intensive patrolling and regular monitoring of natural nests to prevent predation. Many are now increasingly engaged with the *in situ* protection of nests. The organisation also assisted with setting up the annual Odisha Turtle Festival, which was reported to have overwhelming public participation. At the end of the presentation, Mr. Bindhumadhav emphasised that while the current conservation activities must be continued and strengthened, there is also a need to re-focus conservation efforts beyond hatcheries and other relocation of eggs.

#### **POSTER PRESENTATIONS: DAY 1 and 2**

The posters covered a wide range of topics, ranging from the effect of hatchery nest environments on hatchling phenotype to green turtle seagrass interactions in the Lakshadweep archipelago. Participants

Poster Title	Author	Organisation
Andaman and Nicobar Islands – Last refuge for leatherback sea turtles	Adhith Swaminathan	Dakshin Foundation
Overview of APOWA's turtle conservation activities	Bijaya Kabi	APOWA
Effects of nest environment on olive ridley ( <i>Lepidochelys olivacea</i> ) hatchling performance	Chandana Pusapati	Dakshin Foundation
Green turtle-seagrass interactions over space and time in the Lakshadweep Archipelago	Mayuresh Gangal	NCF
Same or Different? Foraging and nesting habitat of eastern Indian olive ridley sea turtle populations	Mohit Mudliar	Dakshin Foundation
Engaging local and visiting divers in monitoring marine turtles in the Lakshadweep Islands	Nupur Kale	Dakshin Foundation
Overview of Wildlife Trust of India's turtle conservation activities	Shakthi Sritharan	WTI
Overview of UAA's turtle conservation activities	Mangaraj Panda	UAA
Overview of STAP's turtle conservation activities	Bichitrananda Biswal	STAP
Green Habitat, an NGO dedicated to conservation	Abdul Saleem	Green Habitat
Overview of TREE Foundation's turtle conservation activities	Supraja Dharini	TREE
Overview of VSPCA's turtle conservation activities	Dandu Hari	VSPCA

were provided the opportunity to interact with the posters, as well as the individuals who had prepared them, at their leisure throughout the conference.

## **DAY 2: PANEL DISCUSSION**

The conference was concluded with a panel discussion moderated by Mr. Muralidharan of Dakshin Foundation. Panellists included Dr. Madhuri Ramesh from Azim Premji University, Dr. Rohan Arthur from Nature Conservation Foundation, Mr. Damodhar A.T., IFS, Secretary & Chief Wildlife Warden from the Lakshadweep Forest Department, Mr. Senthil Kumar from the Gujarat Forest Department, Elsie Gabriel founder of the Young Environmentalists Programme, and Dr. Bragadeeswaran from Annamalai University. The discussion covered a wide range of topics, including the cultural and historic significance of consumption of turtles as a food source. In India, the consumption of turtle eggs and meat has been ongoing for several decades. Turtle meat was (and, in many cases, still is) considered as an aphrodisiac and the shells of turtles were sold extensively in local markets across the country. The consumption of turtle eggs and adults has drastically reduced in recent times, but conservationists globally have also been discussing

the potential for sustainable consumption/use of turtles. Apart from this topic, the potential benefits of tourism as well as measures for the mitigation of conflict between turtles and fishers were also covered.

## **CLOSING CEREMONY**

For the closing ceremony, members were awarded for their poster presentations and paintings, as well as provided with tokens of appreciation. A cultural event that showcased the local talent groups, in the form of local music and dance forms of Lakshadweep, was enjoyed by all.

In conclusion, the 1<sup>st</sup> National Conference on Marine Turtle Conservation provided the participants with the opportunity to get a glimpse of the work undertaken with respect to turtle conservation across the country. It brought to light several key issues faced by marine turtles across the coast of India and, through the discussions, participants were able to consider how such issues could be mitigated in their state and region. Thus, the conference allowed for the successful exchange and dissipation of ideas among attendees and increased awareness about the work being carried out in different parts of the country.