

Background and Scope of the GOI–UNDP Sea Turtle Project

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In the early 1970s, following a survey of the Orissa coast (FAO 1974) and the report that Gahirmatha might be the ‘world’s largest sea turtle rookery’ (Bustard 1976), sea turtles were brought into the conservation agenda of the Government of India (GOI). The Madras Snake Park Trust in Tamil Nadu (led by Romulus Whitaker) was then conducting regular surveys along the Indian coast, including the offshore islands of Andaman and Nicobar and Lakshadweep. It had set up the country’s first sea turtle hatchery in Madras and was creating a great deal of awareness on sea turtles (Valliappan and Whitaker 1974, Whitaker 1977, see Shanker 2003 for a review). The recommendations of the Indian Board for Wild Life (IBWL) in 1969 and Bustard (1976) culminated in the 1976 inclusion of all five species of sea turtles that occur in India in Schedule I of the Indian Wildlife (Protection) Act, 1972.

The newly created Ministry of Environment and Forests (MoEF) in the GOI realised that the Orissa coast was a major olive ridley nesting site and supported the annual sea turtle census and nest protection programme of the wildlife wing of the Orissa forest department. It also constituted the Indian Sea Turtle Specialist Group to look into problems associated with the conservation of sea turtles. Surveys of the Indian coastline by the Madras Crocodile Bank Trust provided information on the status of sea turtles in India (Bhaskar 1984). Much of this information was synthesised in 1984 during a workshop conducted by the Central Marine Fisheries Research Institute (CMFRI) in Chennai (Silas 1984).

In the early eighties, concerned at reports of increasing mortality of olive ridleys in Gahirmatha (Kar and Dash 1984), the MoEF took the support of the navy and the coast guard to conduct offshore patrols for the protection of breeding congregations

(Patnaik and Kar 2000). In spite of the legal protection offered in the Act of 1972, large-scale mortality of breeding adults along the Indian coastline continued to be a major concern for the MoEF, and numerous publications emphasised the need to initiate a project for the conservation of sea turtles in India (Silas 1984, Pandav et al 1994, Choudhury et al 2000).

This large-scale mortality of a globally migratory species had its repercussions at the World Trade Organisation (WTO),¹ where India had to contest a ban on the export of marine products harvested with fishing gear that had no safeguard against sea turtle mortality. The IUCN Marine Turtle Specialist Group organised the Northern Indian Ocean Sea Turtle Workshop in Bhubaneswar in January 1997, which resulted in the Orissa Declaration and the Marine Turtle Conservation Action Plan for the Northern Indian Ocean. This was further impetus to the MoEF to develop India's sea turtle conservation agenda (Choudhury et al 2000) and the ministry launched Project Sea Turtle, at a national level, in 1999. The primary focus of this project was:

- (i) To identify important sea turtle nesting sites along the Indian coastline and place them under CRZ (Coastal Regulation Zone) category I.
- (ii) To safeguard offshore breeding congregations from incidental capture in marine fishing operations.
- (iii) To identify and protect migratory routes of sea turtles in territorial waters.
- (iv) To develop the human resources and infrastructure required to build sea turtle conservation.
- (v) To develop a network for regional, national and international cooperation on sea turtle conservation, and
- (vi) To develop awareness programmes for sea turtle conservation.

An integrated project on the conservation and management of sea turtles along the Indian coast was proposed to the United Nations Development Programme (UNDP) in the same year. The project envisaged the development of a sustainable model for the protection and restoration of sea turtle habitats with the participation of various stakeholders.

The GOI–UNDP Sea Turtle Project

The MoEF vested the responsibility of implementing this UNDP-funded project to the Wildlife Institute of India (WII) in Dehradun in 1999, and project activities were initiated in 2000. The project prioritised the olive ridley as the species in focus but also expanded its scope to include the four other species of sea turtles. The project also envisaged the participation of numerous stakeholders—various ministries of the Government of India, the state governments of Orissa, West Bengal, Andhra Pradesh, Tamil Nadu, Kerala, Karnataka, Maharashtra, Gujarat, the union territories of Andaman and Nicobar and Lakshadweep, non government organisations (NGOs), research organisations, local communities, fisher folk, trawler associations and other interested groups.

¹ see Chapter 25 for a more detailed report on the turtle–shrimp case.



GOALS AND OBJECTIVES

The overall goal of this project was to develop a sustainable model for the conservation of olive ridley sea turtles and restoration/conservation of their habitats along the Indian coastline, through a holistic and people-centred approach (Anon 1999, Mukherjee 2001). The objectives of the project were:

- (i) To conduct a comprehensive threat analysis and log-frame analysis for olive ridleys and their habitats, and collate this data to design management plans for the conservation and restoration of degraded and threatened habitats.
- (ii) To create comprehensive, time-based, spatial databases of olive ridley nesting sites, feeding populations and foraging sites.
- (iii) To build the capacities of major stakeholders—like the central government, state governments, NGOs, community-based organisations (CBOs), etc—in olive ridley habitat management; and to generate awareness among these identified stakeholders of the need to protect coastal ecosystems in general and the olive ridley in specific.
- (iv) To develop and implement a participatory management plan for sea turtle habitats.

PROJECT MONITORING

The executing agency for this project was the wildlife wing of the MoEF, and the project was guided and governed by a national steering committee headed by the inspector general of forests, MoEF. The committee comprised the deputy inspector general of forests (WL) from the MoEF, state chief wildlife wardens, representatives from the Ministries of Commerce and Agriculture, UNDP, WII, the Indian coast guard, Department of Ocean Development, and various NGOs. The additional inspector general (WL)—also national project director, GOI–UNDP Sea Turtle Project—served as member secretary. The WII acted as the implementing agency, whose primary role was to coordinate, monitor and report the activities of the project to the steering committee. Twice a year, a core committee within the steering committee reviewed the progress of the project and approved the implementing agency's proposals. In the annual meeting of the steering committee, all activities of the project were ratified.

ACTIVITIES AND OUTPUT

Assessment of sea turtles and their habitats, and the threats they face along the Indian coast

While there was some literature available on sea turtle nesting along the Indian coastline, many areas had been ignored and no systematic surveys had been carried out. One of the objectives of this programme was to extensively survey the entire coast to get nesting and mortality data, with intensive sampling of key areas. Another objective of the survey was to build a network of coastal organisations and involve individuals interested in marine conservation, who would serve to collect and disseminate information on sea turtles and related coastal issues. Surveys were carried out in all the coastal states, including the two archipelagos, by the following organisations:

West Bengal

Nature, Environment and Wildlife Society (NEWS), Kolkata

Orissa

Forest Department, Government of Orissa, Bhubaneswar



Andhra Pradesh	Wildlife Institute of India (WII), Dehradun
Tamil Nadu	Salim Ali Centre for Ornithology and Natural History (SACON), Coimbatore
Kerala	THANAL Conservation Action Network, Thiruvananthapuram
Karnataka	University of Mysore, Hassan
Maharashtra and Goa	Bombay Natural History Society (BNHS), Mumbai
Gujarat	Gujarat Institute of Desert Ecology (GUIDE), Bhuj
Andaman and Nicobar Islands	Andaman and Nicobar Environmental Team (ANET), Port Blair
Lakshadweep Islands	Wildlife Institute of India (WII), Dehradun

Capacity Building and Training Workshops

National workshop: On 9–10 April 2001, a National Sea Turtle Workshop was conducted in Bhubaneswar, with the participation of stakeholder-agencies. Over 125 participants reviewed sea turtle conservation in India and recommendations were made for consideration by various ministries. The proceedings of the workshop were published in March 2002 (Shanker and Choudhury 2002).

Conducted by WII and the Orissa forest department.

Satellite telemetry study in Orissa: A satellite telemetry study on olive ridleys was initiated in April 2001 by WII, in collaboration with the Orissa forest department and the Smithsonian Institution, USA. Turtles were tracked till mid-August 2001, when the last transmissions were received. Post-nesting migratory routes of four turtles were traced, with one turtle migrating to Sri Lanka (see <http://www.wii.gov.in> for details).

Conducted by WII, Orissa forest department and Smithsonian Institution, USA.

Education and awareness workshop: The Centre for Environmental Education (CEE), Ahmedabad conducted a national workshop in August 2001 to assess sea turtle conservation awareness and education needs. The workshop aimed to create a model for environmental education, with reference to sea turtle conservation, along the Indian coast. A handout and poster on sea turtles of India was prepared by CEE and distributed to state agencies.

Conducted by CEE, Ahmedabad.

Study tour and training: In September 2001, a group of 16 officials (from various state wildlife and fisheries departments) were taken on a training and study tour to obtain first-hand experience of sea turtle conservation and management methods in Malaysia and Australia.

Conducted by WII, Dehradun.

TED demonstration-cum-workshop in Orissa: In February 2002, the Orissa fisheries department and Project Swarajya, Cuttack conducted a demonstration-cum-workshop on turtle excluder devices (TEDs) at Paradeep (see Anon 2003a).

Conducted by the Orissa fisheries department and Project Swarajya, a non government organisation in Cuttack.



TED demonstration and workshop in Andhra Pradesh: The State Institute of Fisheries Technology (SIFT), Kakinada conducted TED demonstrations and workshops between 2001–02. It also set up TED information and demonstration centres at Kakinada, which provide information on the use of TEDs. In collaboration with the Marine Products Export Development Authority (MPEDA), the centres distribute free TEDs to trawler operators. The Central Institute of Fisheries Technology (CIFT), Kochi worked on the design of an indigenous TED, which will be appropriate for Indian conditions. Conducted by SIFT, Andhra Pradesh.

Workshop to review TED promotion: A workshop on networking and coordination of TED manufacture and promotion along the Indian coast was conducted in December 2002 to review TED promotion in India. The workshop aimed to share research information among the three major officiating agencies—the Ministry of Commerce, Ministry of Agriculture and MoEF—and also with fisheries organisations and NGOs (see Anon 2003b).

Conducted by MPEDA, Kochi and WII, Dehradun.

Workshop on developing an eco-friendly coastal development plan: While the greatest threat to sea turtles in the sea is from fishing, threats on land occur primarily from developmental activities by agencies that destroy or contribute to the shrinking of nesting beaches. In December 2002, a workshop on Eco-(sea turtle)friendly Coastal Development was conducted in Visakhapatnam, Andhra Pradesh. Based on interaction during the workshop, a sustainable eco-friendly coastal development plan, with special focus on sea turtles, was formulated (see Anon 2003c).

Conducted by the Andhra Pradesh forest department and WII.

Stakeholders workshop for protection measures and training workshop for frontline staff: In November 2001, the Orissa forest department conducted a workshop, in which more than 60 participants from forest and fisheries departments, the coast guard, NGOs and the media participated. Overall training on sea turtle conservation and management was imparted during the two-day workshop.

Conducted by the Orissa forest department.

Training workshop on sea turtles for frontline staff from the east coast states: In June 2002, a workshop was conducted in Chilika, Orissa and was attended by 38 frontline staff from the east coast states of West Bengal, Orissa and Andhra Pradesh. The participants were from the coast guard and the state forest and fisheries departments. Training on different aspects of conservation and management of sea turtles was given to the participants (Pandav 2002).

Conducted by WII and the Orissa forest department.

Training workshop on sea turtles for frontline staff from the west coast states: In June 2002, a workshop conducted in Kochi, Kerala was attended by 80 frontline staff from the west coast states of Kerala, Karnataka, Maharashtra, Goa and Gujarat. The frontline staff were from the CMFRI, CIFT, MPEDA, the coast guard and state forest and fisheries departments (Rajagopalan 2002).

Conducted by CMFRI, Kochi and WII.

Training workshop on sea turtles for frontline staff of the Andaman and Nicobar Islands: A capacity-building workshop for various agencies in the Andaman and Nicobar Islands was conducted in Port Blair in June 2003 to offer training on various aspects of sea turtle conservation and management (Singh et al 2003).

Conducted by the Andaman and Nicobar Environmental Team (ANET) and the A&N forest department, Port Blair.

Other Activities

Supercyclone impact survey: In 1999, the WII conducted a rapid assessment survey (with special reference to sea turtle nesting habitats) on the impact of the supercyclone that hit Orissa in October 1999 (Pandav 2000).

Review of legislation: Five sea turtles are listed under Schedule I of the Indian Wildlife (Protection) Act, 1972. Apart from this, several laws and acts pertain to maintenance of the coast and offshore waters, the regulation of fishing activities and protection of endangered species in India. Enviro-Law, New Delhi provided a review of legislations pertaining to sea turtles and their habitats, with an evaluation of the implications for conservation.

Using GIS and satellite imagery to characterise sea turtle nesting habitats in Orissa: The nesting beaches at two sites in Orissa—Gahirmatha and the mouth of the Devi River—are narrow sand bars which vary substantially in size, shape and location from year to year. The Orissa Remote Sensing Applications Centre (ORSAC), Bhubaneswar carried out a study on the characteristics and dynamics of the nesting beaches along the Orissa coast.

Community-based conservation: Kalpavriksh, Pune documented two community-based conservation programmes in Kerala and Goa. In both instances, local fisher folk have taken the initiative to protect nesting turtles and their eggs, with support from the forest department. The project also examined the nesting site at Rushikulya, Orissa to evaluate whether similar programmes could be initiated there.

Survey of marine pollution in West Bengal: A pilot survey on marine pollution at the micro-layer level, with special reference to its impact on the migration and nesting of olive ridleys along the West Bengal coast, was carried out by the West Bengal fisheries department.

Sea turtle database unit: A sea turtle database unit was set up in Bhubaneswar by the Orissa forest department, to collect information on sea turtle conservation and management along its coast.

Production of manuals on sea turtle conservation and management techniques: The Madras Crocodile Bank Trust (MCBT) prepared four manuals on monitoring, census and research methods, beach and hatchery management, and coastal development (Andrews 2003).

Production of a documentary film on TEDs: A film to promote awareness of TEDs (and dubbed in Telugu, Oriya and English) was prepared by the State Institute of Fisheries Technology, Kakinada and a professional filmmaker from Eco-Media, Chennai.



Agenda for the future

The central government is committed to give high priority to, and fund efforts in, sea turtle conservation. The activities of the GOI-UNDP Sea Turtle Project have brought many government and non government organisations and individuals together to improve the status of sea turtles along the Indian coast. It is particularly satisfying that this project has facilitated a large number of stakeholders, across many sectors, to work for the cause of sea turtle conservation. The capacity-building component of the project has enabled many individuals and organisations along the Indian coast to initiate and implement conservation programmes.

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