



ENVIS

Newsletter

on State of Environment

Supported by Ministry of Environment and Forests, Government of India

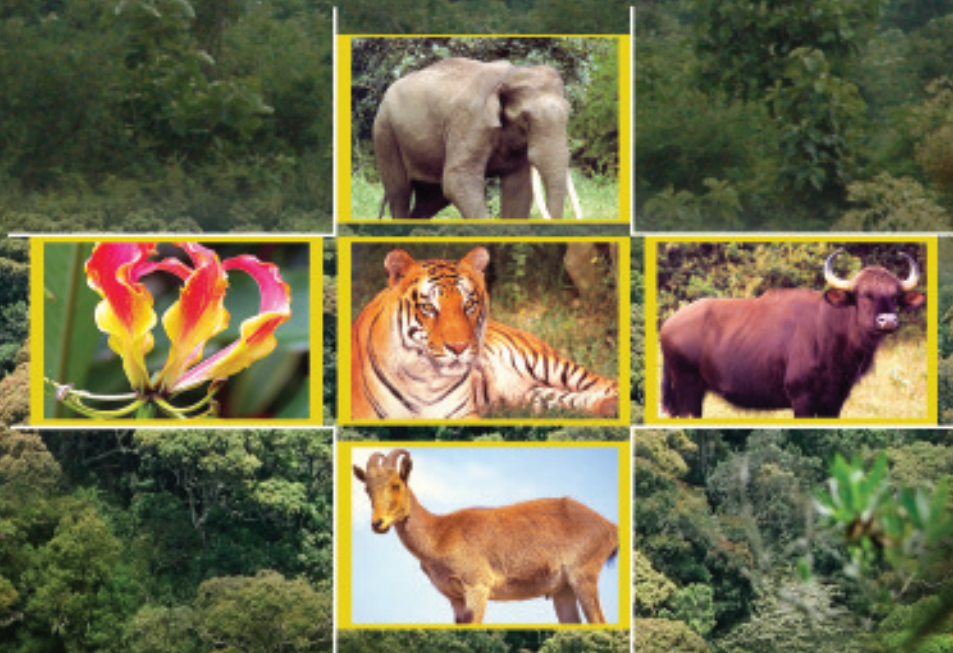


Dec 2006

A quarterly issue

Vol. 3 No.4

FOREST & Wildlife of Tamil Nadu



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Forest and Wildlife of Tamil Nadu

The Tamil Nadu State is spread over a geographical area of 1,30,058 sq.kms. The total length of its boundaries runs approximately 2190 kms. It has a recorded forest area of 22,877 sq.kms. Accounting for 17.59% of its total geographical area. The Recorded Forest comprises of 19,285 sq.kms. of Reserved Forests 2,254 sq.kms of Reserved lands and 1,306 sq. kms. of unclassified forests (TNFD, 2007).

I. Increasing green cover

The Union Planning Commission has recommended that the forest / tree cover in the country should be increased to 25% of the geographical area by 2007 and to 33.33% by 2012 as mandated in the National Forest Policy, 1988. Earnest efforts are being taken to increase the forest cover / tree cover in the State, by encouraging tree cultivation inside and outside reserved forest areas by extension activities, supported by research (Policy note 2006-07).

II. Biodiversity Conservation, Landscape and Protected Areas Management

Tamil Nadu has been a pioneer State in protected area management and development of wildlife. The State has set aside 16.03 % of its forest area i.e., 3669.18 sq. kms. under the network of protected areas in 8 sanctuaries, 5 national parks and 3 biosphere reserves namely Nilgiris Biosphere Reserve, Gulf of Mannar Biosphere Reserve and Agasthyamalai Biosphere

Reserve in the State. In addition, there are 12 bird sanctuaries outside the reserve forests for protecting the bird habitats. These protected areas of the State hold large samples of eco-system types and habitats containing viable population of wildlife, key stone species, endemic species and cover significant ecotones, landscapes and corridors. Tamil Nadu is unique as it is the meeting point for Eastern and Western Ghats which is a biodiversity hotspot rich in endemism.

Efforts are being made to increase the protected area upto 25% of the forest area of the State under the Wildlife Management as the proposals for declaration of Sathyamangalam Wildlife Sanctuary, Meghamalai Wildlife Sanctuary, Kodaikanal Wildlife Sanctuary and Nellai Wildlife Sanctuary are under consideration of the Government besides enlarging the extent of already proposed wildlife sanctuaries. Many medicinal plants and plants of genetic importance will also be conserved in these areas. Action is also being taken to resolve human-wildlife conflict through habitat improvement and prompt payment of compensation in problematic sites besides improving the marine eco-system through the Gulf of Mannar Biosphere Project. During the year 2005-06, 2000 hectares of shelterbelt and 700 hectares of mangrove plantations have been raised in the coastal districts of Tamil Nadu under ETRP project. Efforts have been taken to map all wildlife areas and habitats through Remote Sensing, Geographical Information System and Global Positioning Systems. (Policy note 2006-07).

Forest plays a vital role in safeguarding the environment and contributes much to economic development. Forests are generally considered *environmental capital* in that it directly relates to the environment. Conservation and preservation of forest is a pre-requisite for maintaining a healthy eco-system. Besides ensuring ecological stability, forest provides employment opportunities to rural and tribal folk and provides wood and minor forest products like honey, herbs, fruits, berries and materials for domestic use. (Economic Appraisal 2003-04).

III. Major forest types in Tamil Nadu: Tamil Nadu harbours diverse vegetation in nine different forest types (Champion & Seth, 1968). They are:

1. Tropical Wet Evergreen Forests: They occur at an altitude of 1500 m or above and are restricted to Southern Western Ghats. The vegetation is characterized by three-tier organization of species. Tall trees, many of which attain a height of more than 40 m, form the uppermost tier or top canopy. The forest floor supports rich herbaceous vegetation and the arborescent habitat provide a good niche for a number of epiphytic orchids and pteridophytic flora.

2. Tropical Semi Evergreen Forests: These forests form a bridge between Wet Evergreen and Moist deciduous forest. They usually occur between 800 – 1200 m altitudes in Southern Western Ghats of Tamil Nadu. Many of the tree species are common to Wet Evergreen Forests. This forest type supports a good number of epiphytic orchids and canes.

3. Tropical Moist Deciduous Forests: This forest type occurs between Semi Evergreen and Dry Deciduous forests. The arborescent flora is predominantly deciduous interspersed with evergreen elements at the lower tier.

4. Littoral and Swamp Forests (Mangroves) It mainly includes mangroves seen in intertidal zones. In Tamil Nadu mangrove vegetation is mainly seen in Pichavaram and Muthupet areas. Pichavaram covers an area of about 14 sq.km. of dense mangrove vegetation. They are also seen in Gulf of Mannar and backwater regions of Ennore. In Tamil Nadu there are 22 species of mangroves under 16 genera and 13 families.

5. Tropical Dry Deciduous Forests: They occur at altitudes between 400 – 600 m on well-drained shallow soils. This forest type supports a number of species of timber.

6. Tropical Thorn Forests: Southern Tropical Thorn Forests mostly occur in the dry plains and on low elevation hillocks as well as at the foothills of Eastern and Western Ghats.

7. Tropical Dry Evergreen Forests: Tropical Dry Evergreen forests are restricted to East Coast of Tamil Nadu running from Pulicat at the Northern point to the Vedaranyam at the south covering a width of 60 km from East to West. A good number of forest patches of this type are preserved in the form of sacred groves. Tropical Dry Evergreen Forests occur in three different habitats: i) along the sandy coast, ii) interior coastal plains with red laterite soils, iii) isolated hillocks scattered along the coast.

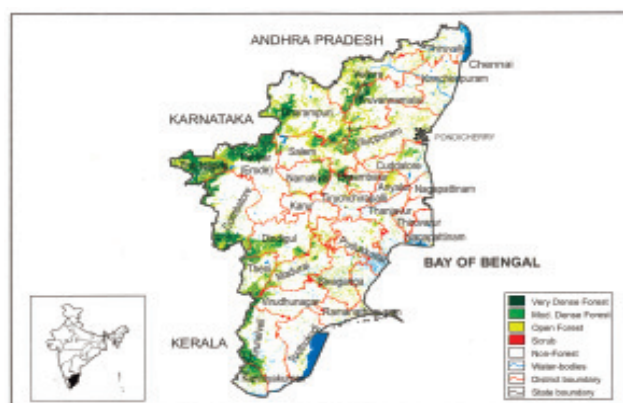
8. Subtropical broad leaved hill forests: This forest type consists of evergreen forest that has been described as “stunted rain forests”, similar to the tropical rain forest but not so luxuriant, the trees being smaller and with less shapely boles, are often festooned with herbaceous and cryptogenic epiphytes. These forests are found at an altitude of 1,200m to 1,750m.

9. Montane wet temperate forests: These forests are also called as “Hill shola forests”. The height of the forest is relatively low, rarely exceeding 6m. This forest is found at an altitude of about 1,500 m and upwards. This forest is usually found in patches (Sholas) in the more sheltered sites on rolling grasslands.



IV. Forest cover

The State of Forest Report 2003, of Forest Survey of India has assessed the forest cover of the State to be 22,643 sq.km in extent which is 17.41% of the geographical area of the State. The distribution of the forest in the State, its density, classification and tree cover are given in table below.



Map.1. Forest cover map of Tamilnadu

Table 1. Types of forest cover in Tamil Nadu

Forest Cover	
Very Dense Forest	2,440 km ²
Moderately Dense Forest	9,567 km ²
Open Forest	10,636 km ²
Total	22,643 km²
<i>Of State's Geographic Area</i>	17.41%
<i>Of Country's Forest Cover</i>	3.34%

Table 2. Tree cover in Tamil Nadu

Tree cover	
Culturable Non-Forest Area (CNFA)	98,851 km ²
No. of trees per ha of CNFA	13.7
Tree Cover	4,991 km²
<i>Of CNFA</i>	5.05%

V. Floral Diversity of Tamil Nadu

Tamil Nadu ranks 1st in Angiosperm diversity, which includes 5640 species. This includes 533 endemic species, 230 red-listed species, 1559 species of medicinal plants and 260 species of wild relatives of cultivated plants. The Gymnosperm diversity of the country is 64 species of which Tamil Nadu has 4 species of indigenous Gymnosperms and about 60 introduced species. Tamil Nadu has about 184 species of Pteridophytes. Tamil Nadu wild plant diversity also includes vast number of



Flame of the forest

Bryophytes, Lichens, Fungi, Algae and Bacteria (Wild Biodiversity of Tamil Nadu 2005).

VI. Faunal Diversity of Tamil Nadu

The faunal diversity of Tamil Nadu includes 165 species of fresh water pisces, 76 species of amphibians, 177 species of reptiles, 454 species of birds and 187 species of mammals. According to the CAMP reports the red-listed species include 126 species of pisces, 56 species of amphibians, 77 species of reptiles, 32 species of birds and 40 species of mammals. The endemic fauna includes 36 species of amphibians, 63 species of reptiles, 17 species of birds and 24 species of mammals. Schedule I animals include 22 species of mammals, 42 species of birds and 9 species of reptiles. Schedule II animals include 13 species of mammals. Schedule III animals include 5 species of mammals, 367 species of birds, 109 species of reptiles and 23 species of amphibians. Schedule V animals include 13 species of mammals and one species of bird. (Wild Biodiversity of Tamil Nadu, 2005).



Gaur

VII. Biosphere Reserves of Tamil Nadu

Biosphere Reserves are areas of terrestrial and coastal ecosystems, which are internationally recognized within the framework of UNESCO's Man and Biosphere (MAB) programme. These Reserves are required to meet a minimal set of criteria and adhere to a minimal set of conditions before being admitted to the World Network of Biosphere Reserves designated by UNESCO. The



world's major ecosystems types and landscapes are represented in this network, which is devoted to conserve biological diversity, promote research and monitoring as well as seek to provide models of sustainable development in the service of human kind. (MoEF Annual Report 2005-06).

Objectives: These Reserves are rich in biological and cultural diversity and encompass unique features of exceptionally pristine nature. The goal is to facilitate conservation of representative landscapes and their immense biological diversity and cultural heritage, foster economic and human development that is culturally and ecologically sustainable and to provide support for research, monitoring education and information exchange. The scheme is a pioneering effort at pursuing the increasingly difficult yet urgent task of conserving ecological diversity under mounting pressures. (MoEF Annual Report 2005-06).

A. Nilgiri Biosphere Reserve

The Nilgiri Biosphere Reserve (NBR) is the first biosphere reserve set up in India under the Indian National Man and Biosphere Programme. NBR embraces a complex of Protected Areas and reserved forests is known for its rich biodiversity. In the NBR there are 3238 species of angiosperms, 71 species of gymnosperms, 134 species of pteridophytes, 300 species of butterflies and 684 species of vertebrates. Of the 285 species of vertebrates endemic to the Western Ghats, 156 occur within the NBR (Daniels, 1992). Out of the estimated 2100 species of flowering plants endemic to peninsular India, 818 are to be found in the Nilgiris and adjoining areas (Mohanan & Balakrishnan, 1991). One hundred and thirty two species and 13 varieties of flowering plants are endemic to the NBR. About 200 species of medicinal plants have been reported from the NBR of which 24 species are commercially exploited.

A number of little known bats (Chiroptera) and smaller mammals including the clawless otter (*Aonyx cinerea*), Nilgiri marten (*Martes gwatkinsi*), civets (*Viverra sp.*) and the lesser cats (*Felis sp.*) exist within the reserve (Daniels, 1992). Over 300 species of birds are known from the NBR and of the 15 species endemic to the Western Ghats. Amongst the lower vertebrates 39 species of fish, 31 species of amphibians and 60 species of reptiles endemic to the Western Ghats also occur

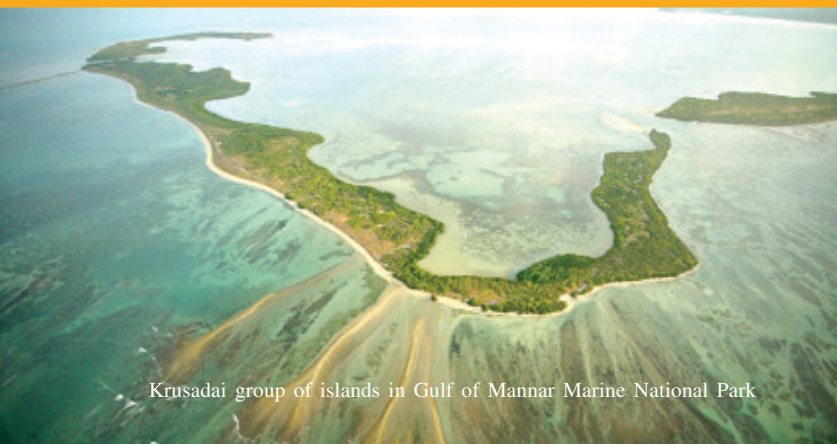
within the biosphere reserve. There are at least 300 marsh crocodiles (*Crocodylus palustris*) distributed in the major watercourses of the reserve. Other endangered reptiles viz., the Indian rock python (*Python molurus*) and king cobra (*Ophiophagus hannah*) are frequently sighted within the NBR. (Working Paper No 16,1665, UNESCO).

B. Gulf of Mannar Biosphere Reserve

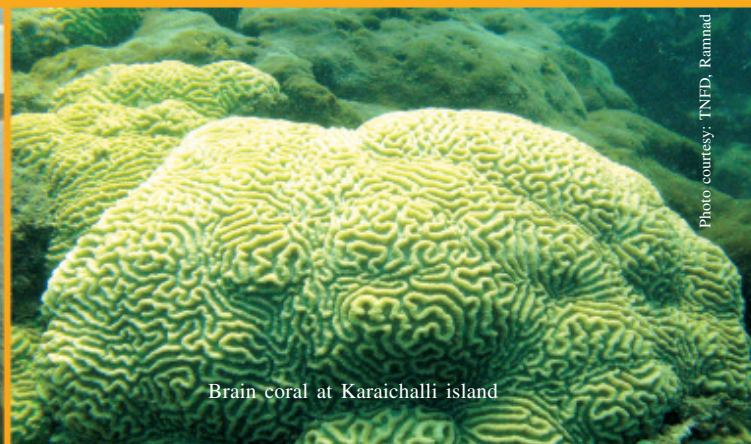
The Gulf of Mannar Biosphere Reserve (GOMBR) is located in the southeastern tip of Tamil Nadu extending from Rameswaram in the North to Kanyakumari in the south. The extent of GOMBR is 10,500 sq.km with the core area covering 560 km, having 3,600 species of fauna and flora. The area extending from Rameswaram to Tuticorin, comprises of 21 Islands of coralline origin and this is the first Indian Marine National Park which is internationally recognised under the UNESCO-MAB programme. The IUCN commission on national parks and WWF identified the reserve as an area of particular concern because of its richest biodiversity and multiple use of the area.

Gulf of Mannar has 6 genera and 11 species of sea-grass and 147 species of seaweeds. The angiosperm flora of Gulf of Mannar has a total of 784 taxa, which includes 764 species, and 20 intraspecific taxa. They belong to 433 genera and 113 families. Coral reefs are a special kind of shallow bottom marine habitat. It is a colony of tiny sea anemone like polyps living together

in thousands and secretes a calcareous skeleton of calcium carbonate. The sea fan is yet another colonial form and the branches may fuse with each other to form the fan. The Gulf of Mannar alone produces about 20% of the marine fish catch in Tamil Nadu. Of the 2200 fish species distributed in Indian water 450 species have so far been recorded in this area. Five species of marine turtles are known from this area, they are the Hawks bill turtle, Green turtle, Olive ridley, Leatherback turtle and Logger head turtle. Dolphins, Dugongs and whales represent the marine mammals are found here. The sea cow (*Dugong dugon*) and baleen whale are critically endangered living in this region.



Krusadai group of islands in Gulf of Mannar Marine National Park



Brain coral at Karaichalli island

C. Agasthyamalai Biosphere Reserve

Agasthyamalai and its environs, comprising an area of 1,701 sq km, were designated as the country's 13th biosphere reserve in November 2001. With the inclusion of areas of Tamil Nadu, the total area of the reserve would exceed 2,500 sq km, with the protected areas of Mudanthurai and Kalakkadu alone forming about 800 sq km. These areas harbour the most diverse eco-systems in Peninsular India. The forests, falling both in Tamil Nadu and Kerala, have many endemic species of plants unique to Peninsular India. As many as 35 of these plants are threatened or endangered species. Forests occur in the altitudinal range of less than 300 metres to more than 2,800 metres around Agasthyakoodam. The exposed rock faces of these mountains are 450 to 2,000 million years old. So far, 2000 sps of flowering plants have been reported (CPREEC).

VIII. Sacred groves of Tamil Nadu

Sacred groves comprise of patches of forests or natural vegetation from a few trees to forests of several acres that are usually dedicated to local folk deities or tree spirits. These spaces are protected by local communities because of their religious beliefs and traditional rituals that run through several generations. The sacred groves are important repositories of floral and faunal diversity that have been conserved by local communities in a sustainable manner. They are often the last refuge of endemic species in the geographical region. The groves are often associated with ponds, streams or springs, which help meet the water requirements of the local people. The vegetative cover also helps in the recharging the aquifers and improves the soil stability of the area and also prevents soil erosion. There are about 448 groves throughout Tamilnadu, out of which 6 groves (Benagudi Shola, Sittannavasal, Puthupet, Udaiyankudikadu, Tirukurungudi and Devadanam) were taken up for detailed, floristic and faunistic studies by C.P.R. Environmental Education Centre.

IX. Conservation and Management

Wildlife and wildlife habitats which are products of millions of years of evolution should be conserved and sustainably managed to meet the social, economic, ecological, cultural, recreational and spiritual needs of the present and future generations. Water, wilderness and wildlife are intimately and irrevocably linked. Wilderness areas and particularly forests, which are the repository of wildlife and biodiversity, have either shrunk or disappeared due to severe agricultural, natural and domestic pressures. They are also the repository and virtual pharmaceutical factories of an array of medicinal plants. These areas form the best underground water tank holding volumes of precious pure water which are released gradually into the streams, rivers and wells down

below. They form the carbon sink, sucking and storing the lethal carbon dioxide for the benefit of all living things. They are the most natural lungs providing the vital oxygen for all the living things to breathe and survive. They are also source of food, fodder, fuel and other products supplementing the sustenance of local communities. Conservation of biodiversity is directly linked with conservation of eco-systems and thus ensure water and food security. The ecological security of the State as a whole and economic well being of the people nearby through water and food security can only be achieved by conserving our biodiversity (Wild Biodiversity of Tamil Nadu, 2005).

X. Initiatives taken by the Forest department

The State has a spectrum of forest vegetation types ranging from wet evergreen forests to moist deciduous, dry deciduous, sholas, grass lands and scrub forests. Invaluable trees like Sandal, Teak and Rosewood and wildlife like tiger, elephant, lion-tailed macaque, grizzled giant squirrel and numerous rare species of fauna and innumerable species of flora including important medicinal plants are found in the forests of the State. Tamil Nadu, therefore, has adopted a compelling vision to inspire people to protect wilderness, the ecological diversity and species richness. The Tamil Nadu State Forest Act, 1882, The Wildlife Protection Act, 1972, Forest Conservation Act, 1980 and a host of rules formulated under these Acts are being implemented by the Forest Department. Adhering to the best scientific principles and incorporating traditional knowledge, new socio-economically and ecologically sound paradigms for managing forests and wildlife have been incorporated in the management strategies adopted by the Tamil Nadu Forest department. (Policy Note 2006-07).

Events

1. Youth for Conservation Education in Rural Schools (Wildlife Week Celebration)

The WWF-INDIA- Tamil Nadu State Office in collaboration with Madras School of Social Work launched a programme for youth in conservation education in rural schools from 4th -7th October 2006. The objective is to reach the rural tamil medium school students on conservation activities. Thiru K.S. Neelakantan, IFS, Director, DoE, launched the programme and said that the conservation of natural resources should be "Ecosystem based conservation" which lead to sustainable development. Mr. Mangalaraj Johnson, Chairman WWF India TNSO and Dr. V. Kalaiarasan, State Director, WWF-India TamilNadu State Office explained the objectives of this programme and the role of trained youth in conservation education.

2. Vatavaran Environment Film festival



C.P.R. Environmental Education Centre in collaboration with the Centre for Media Studies, New Delhi organized the CHENNAI CMS VATAVARAN 2006, Environment and Wildlife Traveling Film Festival, supported by the MoEF, GoI and Department of Environment, GoTN from October 5 to 7, 2006 at the Kalaivanar Arangam, Chennai. The festival was formally inaugurated by Ms. Revathy Menon, Actor, Director. Shri.Siddhartha Behura, I.A.S., Additional Secretary, MoEF, GoI, Shri. K.S. Neelakantan, I.F.S., Director, DoE. Dr. Nanditha Krishna, Hon. Director of CPREEC welcomed the gathering. Ms. P.N. Vasanti, Director, CMS introduced the film festival and briefed the participants. The eminent wildlife film makers Ms. Nutan Manmohan, Mr. Shekar Dattatri and Mr. Alphonse Roy were felicitated. The best films of Vatavaran 2005 “Point Calimere-Little Kingdom by the Coast” and Indian Leopards ‘The Killing Fields’ were screened immediately after the inaugural ceremony.

3. National Workshop of ENVIS Centres-2006

The National ENVIS workshop was organized by the ENVIS Secretariat, MoEF, GoI in collaboration with HP State Council of Science, Technology and Environment, Government of Himachal Pradesh at Shimla from 12-14th October, 2006. The workshop was inaugurated by Shri V.S. Kokje, Hon’ble Governor of Himachal Pradesh. Shri J.P. Negi, Principal Secretary, Ministry of Science and Technology, Government of Hamachal Pradesh delivered the welcome address and the special address was delivered by Shri Sudhir Mittal, Joint Secretary, MoEF. Dr. D. Bandyopadhyay, Director,



MoEF briefed the achievement of the ENVIS network in disseminating Environmental Information System to the user groups. Dr. C. Thomson Jacob, Senior Programme officer made a detailed presentation on the achievements of the ENVIS Centre of the Department of Environment, Government of Tamil Nadu. The expert committee has appreciated the effort taken by the ENVIS Centre, DoE in disseminating information and popularising the website through online chat and online quiz. The C.P.R. Environmental Education Centre, Chennai and Centre for Advanced Studies in Marine Biology have been jointly awarded the Best ENVIS Centre Award for the year 2006.

4. Workshop on Chennai waterways – past, present and future

A Workshop on Chennai waterways was organized by the Centre for Environmental Studies and the Institute for Ocean Management, Anna University in collaboration with the Department of Environment and the German Technical Cooperation and Centre for International Migration (GTZ-CIM) on 23rd November 2006. The objective of the workshop is to evolve methodologies for using modern tools in river water management. Thiru. K.S. Neelakantan, Director of Environment spoke about the initiatives taken by the Tamil Nadu Government towards conserving the six Chennai waterways. Prof. H.D. Olbrisch, University of Lueneburg, Germany explained the German model of river management and Dr. Ajay Pradhan, Water and Environment Pvt. Ltd presented the importance of modeling tools in river water management. Thiru. P.M. Belliappa, I.A.S., delivered a lecture on the history of Chennai Waterways and Dr. K.R.Ranganathan, Member Secretary, LoE spoke about the regulatory frameworks in managing the water resources.

5. ‘See Sea Environment’ - Poster cum quiz contest

ENVIS center in collaboration with Indian Coast Guard have organised a “Quiz cum Poster Contest” on Sea See Environ-ment



for the college students of Tamil Nadu on 12th and 13th Dec 06 at Loyola college. Thiru K.S. Neelakantan, IFS., Director. Department of Environment delivered the special address and Inspector General, Rajendra Singh, Indian Coast Guard delivered the inaugural address. Dr. C. Thomson Jacob, SPO ENVIS Centre highlighted the ENVIS objectives. Totally 33 colleges have participated in the quiz & poster contest. The Madras Veterinary College won the first prize for the quiz and Loyola College won the first prize for the poster contest. Dr. D. Sudarsanam and Commd. S. Venkatesh coordinated the event.

Book and Film on Point Calimere Wildlife and Bird Sanctuary - A Ramsar Site



The Point Calimere Wildlife Sanctuary was created on June 13, 1967. In the year 1988, the sanctuary was enlarged and renamed as Point Calimere Wildlife and Bird Sanctuary, with a total area of 377 km². This wildlife and bird sanctuary was also declared as a Ramsar site on August 2002. A book and film on Point Calimere was released by Thiru Viswanath Shegaonkar, I.A.S., Former Secretary, Environment and Forests during the wildlife week celebration on Oct 2nd 2006. The book was written by Thiru A. D. Baruah, I.F.S., Former Wildlife Warden, Nagapattinam and the film was directed and shot by Mr. Shekar Dattatri, a popular film maker from Tamil Nadu.



Projects

Photo credits Sanctuary Asia



Project Tiger

Project Tiger was launched in 1973 with an objective “to ensure maintenance of a viable population of Tigers in India for scientific, economic, aesthetic, cultural and ecological values, and to preserve areas of biological importance as a National heritage for the benefit of education and enjoyment of the people.” This Project has been successfully implemented and there are 28 Tiger Reserves in 17 states, covering an area of 37,761 sq.km. Kalakadu-Mundanthurai Tiger Reserve is the only tiger reserve under the Project Tiger in Tamil Nadu.

Project Elephant

Project Elephant was launched in February, 1992 to ensure long term survival of the Asian Elephants in their natural habitats. This project is being implemented in 25 Elephant Reserves (ERs) spreading across 13 States in our country covering an area of 58,000 sq.km. In Tamil Nadu it is implemented in 4 reserves namely Nilgiri ER, Coimbatore ER, Anamalai ER and Srivilliputtur ER (MoEF, 2005).

Weblinks on Forest and Wildlife

1. Forest Survey of India	www.fsiorg.net
2. Tamil Nadu Forest Department	www.forest.tn.nic.in
3. World Wildlife Fund (WWF)	www.worldwildlife.org
4. Sanctuary Asia	www.sanctuaryasia.com
5. Sacred Groves	www.cpreec.org
6. Wildlife Institute of India	www.wii.gov.in
7. wildlife Trust of India	ww.wildlifetrustofindia.org
8. Zoo Outreach Organisation	www.zooreach.org

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