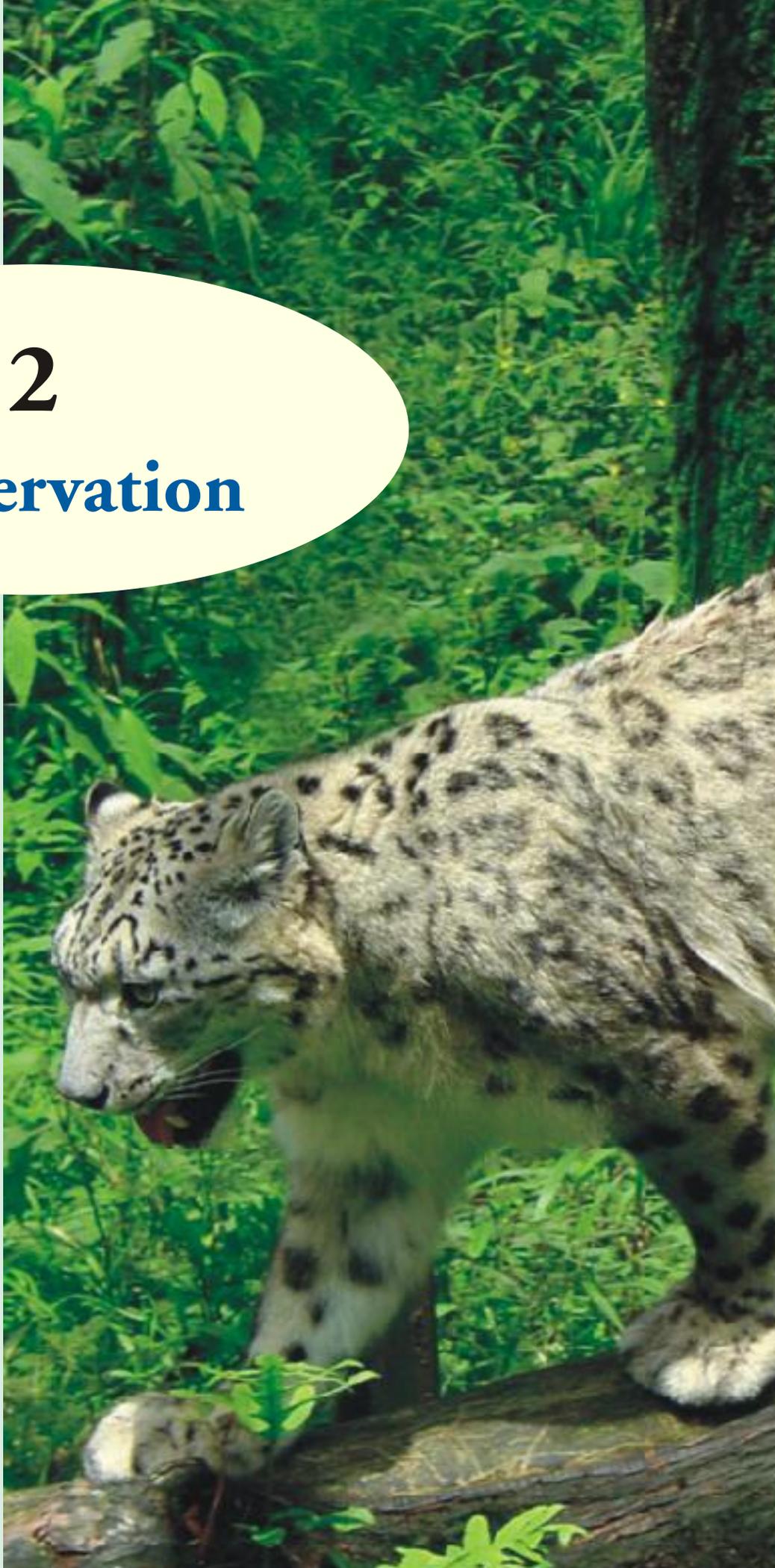


2

Conservation



Biosphere Reserves

Introduction

- ◆ 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 ecosystem types and landscapes are represented in this network, which is devoted to conserving biological diversity, promoting research and monitoring as well as seeking to provide models of sustainable development in the service of human kind.
- ◆ India has been divided into ten Biogeographic Zones namely i) Trans Himalayan, ii) Himalayan, iii) Indian Desert, iv) Semi-Arid, v) Western Ghats, vi) Deccan Peninsula, vii) Gangetic Plain, viii) North-East India, ix) Islands and x) Coasts and these zones together consist of twenty five Biogeographic provinces. The aim is to designate one representative site as Biosphere Reserve in each Biogeographic province for long term conservation.

Objective

- ◆ These Biosphere 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 which 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.

Progress of activities undertaken

- ◆ The Ministry has provided financial assistance to the respective State Governments for conservation and management of fourteen Biosphere Reserves designated so far. In addition, a number of potential sites are under consideration out of which Runn of Kutchch in Gujarat and Cold Desert Biosphere Reserve in Jammu & Kashmir and Himachal Pradesh are at an advanced stage. Research and development projects are also supported in these designated Reserves and potential sites.
- ◆ Four Biosphere Reserves namely Sunderbans (West Bengal), Gulf of Mannar (Tamil Nadu), Nilgiri (Tamil Nadu, Kerala and Karnataka) and Nanda Devi, Uttarakhand have been included in the World Network of Biosphere Reserves so far. Efforts are on for getting remaining Biosphere Reserves included in the World Network of Biosphere Reserves.
- ◆ A list of Biosphere Reserves set up so far along with their area and location is given in Table-2.
- ◆ Regulatory Framework in Biosphere Reserves was discussed in detail by a group of experts during the year. While the Core areas of the Biosphere Reserves will continue to be protected under the Wild Life (Protection) Act, 1972 and Indian Forest Act, 1927 and Forest Conservation Act, 1980, a separate Regulation within the framework of existing Environment (Protection) Act, 1986 is being firmed up to regulate activities within Buffer Zone of the Biosphere Reserves. It is necessary to do so in order to harmonise a system for identification, constitution, rationalisation and Management of Entities of Incomparable Value (EIVs) within Buffer Zones, as defined in the National Environmental Policy, 2006. The group of Experts have identified and defined the criteria for identification of EIV, implication of overlapping legal provisions, the process for identification of EIVs, documentation required for the designation of EIVs, approval process and regulatory

Table-2. List of Biosphere Reserves

S.No.	Name of the biosphere reserve & total geographical area (km ²)	Date of Notification	Location (State)
1.	Nilgiri*(5520)	1.8.86	Part of Wynad, Nagarhole, Bandipur and Madumalai, Nilambur, Silent Valley and Siruvani hills (Tamil Nadu, Kerala and Karnataka)
2.	Nanda Devi*(6497.03)	18.1.88	Part of Chamoli, Pithoragarh & Almora Districts and Valley of Flowers (Uttarakhand)
3.	Nokrek (820)	1.9.88	Part of Garo Hills (Meghalaya)
4.	Manas(2837)	14.3.89	Part of Kokrajhar, Bongaigaon, Barpeta, Nalbari, Kamrup and Darang Districts (Assam)
5.	Sunderbans*(9630)	29.3.89	Part of delta of Ganges & Brahamaputra river system (West Bengal)
6.	Gulf of Mannar*(10500)	18.2.89	Indian part of Gulf of Mannar between India and Sri Lanka (Tamil Nadu)
7.	Great Nicobar(885)	6.1.89	Southern most islands of Andaman and Nicobar (A&N Islands)
8.	Similipal (4374)	21.6.94	Part of Mayurbhanj district (Orissa)
9.	Dibru-Saikhowa(765)	28.7.97	Part of Dibrugarh and Tinsukia districts (Assam)
10	Dehang Debang(5111.5)	02.09.98	Part of Siang and Debang valley in Arunachal Pradesh
11	Kanchanjunga (2619.92)	07.02.2000	Parts of North and West Sikkim.
12.	Pachmari (4926.28)	03.03.99	Parts of Betur, Hoshangabad and Chindwara Distt. of Madhya Pradesh
13.	Agasthyamalai (3500.36)	12.11.2001 (area expanded on 30.3.2005)	Parts of Thirunelveli and Kanya Kumari Districts in Tamil Nadu and Thiruvanthapuram, Kollam and Pathanmthitta of Kerala
14.	Achanakmar-Amarkantak (3835.51)	30.3.2005	Parts of Anuppur and Dindori districts of Madhya Pradesh and Parts of Bilaspur district of Chattisgarh State

* Sites with '*' have been recognized by UNESCO on World Network of Biosphere Reserves.

structure at Central and State Level. In the vast majority of the countries of the world, there is no specific Regulation for Buffer Zone of the Biosphere Reserves and India is one of the few countries to undertake this kind of exercise.

Conservation and Management of Mangroves and Coral Reefs

Introduction and Objectives

- ◆ The Ministry accords high priority to the conservation and management of mangroves and coral reefs in the country. The Coastal Regulation Zone Notification (1991) under the Environmental Protection Act (1986) recognizes the mangrove and coral reefs areas as ecologically sensitive and categorizes them as CRZ-I (i) which implies that these areas are afforded protection of the highest order. Under the promotional measures, the Government has identified 38 mangrove areas and four coral reefs areas (Table-3 & 4) on a country-wide basis for intensive conservation and management.
- ◆ The National Policy, 2006 recognizes that mangroves and coral reefs are important coastal environmental resources. They provide habitats for marine species, protection from extreme weather events; and a resource base for sustainable tourism. The National Environment Policy also recognizes that mangroves, as indeed the other coastal resources like coral reefs & coastal forests, face threats from following quarters:
 - ◇ poorly planned human settlements;
 - ◇ improper location of industries and infrastructure;
 - ◇ pollution from industries and settlements;
 - ◇ over exploitation of living natural resources;
 - ◇ inadequate institutional capacities for, and participation of local communities in, formulation and implementation of coastal management plans;

- ◇ lack of consensus on means of provision of sanitation & waste treatment; and
- ◇ the open access nature of many coastal resources.

- ◆ In view of above, the National Environment Policy underlines the need to mainstream the sustainable management of mangroves into the forestry sector regulatory regime and adopt a comprehensive approach to Integrated Coastal Zone Management.

Conservation of Mangroves

- ◆ The objectives of the Scheme are to help the Coastal State Governments/Union Territories in rehabilitation of degraded Mangrove Areas and enhance Mangrove cover by replantation in the open mud flats etc. Financial assistance is given to coastal State Governments/Union Territories for implementation of Management Action Plan on Mangroves under the Scheme. Hundred percentage assistance is given on grant basis to Coastal States / Union Territories for activities like survey and demarcation, afforestation, restoration, alternative / supplementary livelihoods, protection measures and education & awareness.
- ◆ Based on an average of an annual target of 3,000 hectares on a country wide basis, the areas supported under the scheme are among the 38 areas as already identified by Ministry for intensive conservation. New areas are added to the existing list of the 38 ones on the basis of recommendation by the National Mangrove Committee.
- ◆ Mangroves in India account for about five

Table-4. Coral Reef Sites in India

State/Union Territories	Coral Reef Sites
Gujarat	i) Gulf of Kutch
Tamil Nadu	ii) Gulf of Mannar
A&N Islands	iii) A&N Islands
Lakshadweep	iv) Lakshadweep

Table-3. Mangroves Sites in India

State/Union Territories	Mangrove Sites
West Bengal	1. Sunderbans
Orissa	2. Bhaitarkanika
	3. Mahanadi
	4. Subernarekha
	5. Devi
	6. Dhamra
	7. Mangrove Genetic Resources Centre
	8. Chilka
Andhra Pradesh	9. Coringa
	10. East Godavari
	11. Krishna
Tamil Nadu	12. Pichavaram
	13. Muthupet
	14. Ramnad
	15. Pulicat
	16. Kazhuveli
Andaman & Nicobar	17. North Andamans
	18. Nicobar
Kerala	19. Vembanad
	20. Kannur (Northern Kerala)
Karnataka	21. Coondapur
	22. Dakshin Kannada/Honnavar
	23. Karwar
	24. Manglore Forest Division
Goa	25. Goa
Maharashtra	26. Achra-Ratnagiri
	27. Devgarh-Vijay Durg
	28. Veldur
	29. Kundalika-Revdanda
	30. Mumbra-Diva
	31. Vikroli
	32. Shreevardhan
	33. Vaitarna
	34. Vasai-Manori
	35. Malvan
Gujarat	36. Gulf of Kutchh
	37. Gulf of Khambhat
	38. Dumas-Ubhrat



Fig 23. Mangroves front at Pitchavaram

percent of the World's mangrove vegetation and are spread over an area of about 4500 square kilometre along the coastal States/UTs of the country. Sunderbans in West Bengal account for a little less than half of the total area under mangroves in India. The Forest Survey of India is assessing the vegetation cover of the country including mangroves using remote sensing since 1987. West Bengal has maximum of mangrove cover in the country followed by Gujarat and Andaman & Nicobar Islands. India is home to some of the best mangroves in the world. The Ministry has established a National Mangrove Genetic Resources Centre in Orissa.

Conservation of Coral reefs

- ◆ The four major coral reefs areas identified for intensive conservation and management are: i) Gulf of Mannar, ii) Gulf of Kutchch, iii) Lakshadweep and iv) Andaman and Nicobar

Islands. The emphasis is on preventive aspects through monitoring and surveillance as the restoration work is both costly and time consuming. The Ministry provides financial assistance to the State Forest Departments of all the four identified coral reefs areas in the country for activities like monitoring, surveillance, education and awareness. Besides, the Ministry also supports R&D activities with emphasis on targeted research on coral biodiversity, its management including various aspects of pollution in these areas.

- ◆ The Indian reef area is estimated to be 2,375 sq. km. For encouraging targeted research on both hard and soft corals in the country, the Ministry has established a National Coral Reef Research Centre at Port Blair. The Ministry has a National Committee and a Research Sub-Committee on Mangroves and



Fig 24. Corals – needs intensive conservation

Coral Reefs. In order to further focus attention on all aspects/issues related to corals in India, a Working Group of expert scientists on Strategy for Conservation and Management of Coral Reefs has also been constituted.

Achievements

Increase in number of National Mangrove Sites

- ◆ Number of National Mangrove Sites under Mangrove & Coral Reefs Conservation Programme increased from 32 since 2001-02 to 38 in 2005-06, More areas are being identified. Mangrove plantation is to be perceived as one of the important components of Integrated Coastal Zone Management. However, not all coastal areas are suitable for mangrove plantation as mangroves require an appropriate mixture of saline and freshwater, and soft substrate like mudflats to be able to grow and perpetuate.

Developing Guidelines for Coastal States/UTs to elicit their structured response

- ◆ Detailed guidelines for the preparation of comprehensive Management Action Plans for identified mangroves have been formulated by way of augmentation of existing guidelines.
- ◆ Detailed Guidelines for the preparation of comprehensive Management Action Plans for identified coral reefs have also been



Fig 25. Mangroves at Vallarpadam, Kerala

formulated by way of augmentation of existing guidelines.

Implementation Strategies

- ◆ Synergies and linkages with State Forest Departments and Coast Guards have been strengthened during X Five Year Plan for effective implementation of Management Action Plans on Mangroves & Coral Reefs.

Garnering International Recognition

- ◆ RAMSAR recognition for Bhitarkanika and UNESCO-MAB recognition for Sunderbans. Both Bhitarkanika and Sunderbans are rich in mangrove forests and the recognition is based on this richness of biodiversity.

Effective R&D as a backbone support for Management Action Plans

- ◆ The Research, Conservation & Management of Mangroves & Coral Reefs are supported under Schemes specifically designed to promote conservation of these two marine

resources. Thirty two research projects have been sanctioned and implemented to supplement the management action plans on mangroves & coral reefs.

Training & Education for Capacity Building and Awareness

- ◆ Over 100 researchers and officers of the Coastal States have been trained in the taxonomy of marine flora & fauna, snorkeling, scuba diving and coral bio-monitoring methodologies.
- ◆ Two National Workshops on Mangroves have been organized in Andhra Pradesh and Kerala respectively to sensitize people about values and functions of mangroves to make them aware why there is need to conserve them, and above all to involve communities in conservation efforts along with policy planners, govt. officials, academicians, research organizations, non-governmental organizations, stakeholders etc.



Fig 26. Soft Corals at Button Islands, Andaman Islands

Monitoring mechanism

- ◆ Two tier system at National and State level are in operation for effective coordination to implement the Mangrove Conservation Programme.
 - ◇ National level
 - ★ Met on 6th Oct, 2006 at Nagapattinam near the site of Muthupet & Pitchavaram Mangroves.
 - ★ Research Sub-Committee on Mangroves has been constituted to supplement base line information on priority areas of research in form of research projects through Universities and research institutes for effective execution of Management Action Plan. A meeting of the Research Sub-Committee was also held on June 2, 2006.
 - ◇ State Level
 - ★ State level Steering Committee have been constituted under the Chairmanship of Chief Secretaries/Additional Chief secretaries/Principal Secretaries of Department concerned having members from subject matter departments/academicians/stakeholders/representative from Central Government to discuss Management Action Plans and review conservation activities under taken from time to time.
 - ★ In addition, the concept of Independent Evaluation by the State Government has also been invoked by introducing a special clause in the presidential sanction order itself and a modest budget is also being earmarked for the same. The Ministry is also contemplating independent evaluation of the Scheme during.
- ◇ National Mangrove Committee has been constituted for giving advice on appropriate policies, research and training, identification of mangroves, review of progress of Management Action Plans. The National Committee on Mangroves & Coral Reefs last met on October 6, 2006 in Nagapattinam, Tamil Nadu. The Committee, among other things:
 - ★ Reviewed the outputs and outcomes from works done under this centrally sponsored scheme on mangroves and coral reefs in Tamil Nadu, Karnataka, Andhra Pradesh and Maharashtra.
 - ★ Took stock of significant research findings in the field of mangroves and coral reefs,
 - ★ Discussed synergy & linkages with other partner departments, reviewed the status of regulatory regimes for protection of mangroves and coral reefs in various states/UTs,
 - ★ Deliberated on supplementary livelihood supports local people in the villages surrounding ecologically fragile mangrove and coral reefs areas,
 - ★ Took note of role of education and awareness in promoting conservation and management of mangroves and coral reefs,
 - ★ Discussed enabling activities and training requirements of the State/UTs Government for conservation and management of Mangroves and Coral Reefs,
 - ★ appraised Costing Norms for implementation of Management Action Plan on Mangroves, and
 - ★ Invited the States/UTs to submit Action Plans for XI Five Year Plan

including identification of potential new mangroves and coral reefs sites.

- ✦ By November, 2006 the Conservation and Survey (CS-I) division had spent the entire BE of Rs.4.30 /-crores under the Scheme and had requested an additional amount of Rs. 2.5/- crores at RE-Stage to cater to the imminent requirements under the Scheme.

Biodiversity Conservation

Introduction and Objective

Biodiversity is the variability among living organisms and ecological complexes of which they are part, including diversity within and between species and ecosystems. Biodiversity has direct consumptive value in food, agriculture, medicine and in industry.

A scheme on biodiversity conservation was initiated earlier to ensure coordination among various agencies dealing with the issues related to conservation of biodiversity and to review, monitor and evolve adequate policy instruments for the same.

Activities undertaken

Convention on Biological Diversity

- ✦ The Convention on Biological Diversity (CBD), one of the key agreements adopted during the Earth Summit held in Rio de Janeiro in 1992, is the first comprehensive global agreement which addresses all aspects relating to biodiversity. The CBD, which has near universal membership with 189 countries as its Parties, sets out commitments for maintaining the world's ecological underpinnings, while pursuing economic development. The Convention, while reaffirming sovereign rights of nations over their biological resources, establishes three main goals: the conservation of biological diversity, the sustainable use of its components, and the fair and equitable sharing of the benefits from the use of genetic resources. India is a Party to the CBD.
- ✦ Eight meetings of the Conference of the Parties (CoP) to the CBD have been held so far. The eighth meeting of CoP was held in Curitiba, Brazil from 20-31 March, 2006, in which an Indian delegation with representatives from Ministry of Environment & Forests, Ministry of Commerce, Ministry of Agriculture, and Wildlife Institute of India participated actively. Follow-up work on decisions taken by CoP-8 has been initiated.
- ✦ Pursuant to CoP-8, India has sent several submissions on various issues in response to requests by CBD Secretariat to the Parties. These interalia relate to: meeting on international certificate, information on liability and redress under CBD, laws dealing with biodiversity, dryland biodiversity, access and benefit sharing, NBSAP, technology transfer, forest biodiversity, Global Biodiversity Outlook, Article 8j on traditional knowledge, and Protected Areas,
- ✦ During the year, a short-term study was commissioned to Biotech Consortium India Ltd. to prepare an approach paper for India's position on technology transfer issues under the CBD.
- ✦ Pursuant to a decision of CoP-8, the CBD Secretariat is organizing regional workshops to review programme of work on Protected Areas, and for capacity building. India offered to host the workshop for this region, for which a detailed proposal was prepared. After obtaining necessary clearances, India is hosting the Sub-Regional Workshop on the review of and capacity building for CBD programme of work on protected areas for South and West Asia regions. The workshop is being organized through the Wildlife Institute of India in Dehradun from April 2-4, 2007. Preparations for this workshop, including preparation of the country paper with inputs from all State Forests Departments, are underway.
- ✦ During the year, work relating to printing of the Third National Report to the CBD was



Fig 27. *Ipomea carnea*- an obnoxious invasive impacting on the aquatic biodiversity.

undertaken. The Report was printed and formally released on November 20, 2006 by the Hon'ble Minister (Environment & Forests) during the inaugural session of International Conference on Biosafety organized by the Ministry in New Delhi from November 20-22, 2006. An Executive Summary of the Third National Report under preparation.

- ◆ Regular meetings of the Consultative Group on Biodiversity Issues were held (on May 5, 2006, November 3, 2006, January 12, 2007, and February 2, 2007) to advise the Government for preparing briefs for international meetings under the CBD and Biosafety protocol, and other related matters.

National Biodiversity Action Plan

- ◆ Subsequent to the approval of the National Environment Policy (NEP) by the Cabinet in 2006, a draft National Biodiversity Action Plan (NBAP) in consonance with the NEP and using the final technical report of the UNDP/GEF project on National Biodiversity Strategy and Action Plan (NBSAP) as one of the inputs is being prepared.

Like Minded Megadiverse Countries (LMMCs)

- ◆ India was invited to chair the Group of Like Minded Megadiverse Countries (LMMCs) for a period of two years from March 2004 to March 2006. India steered the development

of a common position of LMMCs for the negotiations for developing an international regime on access and benefit sharing. India organized a Ministerial meeting of LMMCs on the sidelines of CoP-8 in Curitiba, Brazil in March 2006, wherein India handed over the Presidency of the LMMCs to Kenya.

- ◆ During the year, some of the residual issues pertaining to the LMMCs Secretariat were undertaken. A multi-authored book, entitled 'Perspectives on Biodiversity; A vision for megadiverse countries' was printed and was widely distributed. In order to facilitate electronic exchange of information among the member countries, a discussion forum and web seminar were made operational on the website developed by the Ministry for LMMCs (www.lmmc.nic.in)

Achievements made

- ◆ Having participated actively in the meetings organized by CBD Secretariat including CoP-8 so as to incorporate the country's position on various issues, follow-up work was initiated on the decision of CoP-8. Pursuant to CoP-8 and in response to requests from CBD Secretariat to Parties, India has submitted information on several issues. The information submitted by Parties will be incorporated in the documents prepared by the CBD Secretariat for various intersessional meetings.
- ◆ The Third National Report to the CBD was finalized and printed.
- ◆ Pursuant to the decision of CoP-8, India is hosting a Sub-Regional Workshop on Review of and Capacity Building for CBD Programme of work on Protected Areas for South and West Asia regions, in Dehradun from April 2-4, 2007.
- ◆ India steered the development of a common position of LMMCs for the negotiations for developing an international regime on access and benefit sharing.



Fig 28. Glossy Ibis (*Plegadis falcinellus*) at Bharatpur, Rajasthan

Biological Diversity Act, 2002 (No. 18 of 2003) and National Biodiversity Authority

Introduction and Objectives

- ◆ The Act was promulgated to regulate access to Genetic Resources and Associated Knowledge and ensure Benefit Sharing Arrangements, apart from developing policies and programmes on long term conservation and protection of Biological Resources and Associated Knowledge.
- ◆ The National Biodiversity Authority (NBA) set up at Chennai on October 1, 2003 as per the provisions of the Biological Diversity Act, 2002 is mandated to facilitate implementation of the Act. The Authority has held two meetings during the year and taken a number of important decisions including prescribing format for “agreements” to be signed between NBA and other parties seeking access to Genetic Resources And Associated Knowledge and Notification of guidelines on collaborative research.
- ◆ In compliance to the provisions of the Act, eighteen states have formed State Biodiversity Boards. These States are : Karnataka, Goa, Punjab, Madhya Pradesh, Arunachal Pradesh, Nagaland, Himachal Pradesh, Kerala, West Bengal, Uttar Pradesh, Mizoram, Chattisgarh, Manipur, Sikkim, Gujarat, Andhra Pradesh, Uttarakhand and Haryana. Other States are in process of establishing State Boards. Local level Bio-diversity Management Committees are also being formed in the States. Karnataka has already established 570 Biodiversity Management Committees. Likewise the States of West Bengal and Madhya Pradesh have also made substantial progress in this regard.
- ◆ These committees will play important role in conservation, preparation of Peoples Biodiversity Registers and shall charge access fees in respect of any biological resource or associated knowledge from their jurisdiction. A 3-tier structure namely National Biodiversity Authority, State Biodiversity Board and Local Management Committee would be important to deal with any matter concerning conservation of Biological Diversity, its sustainable use and fair and equitable sharing of benefits arising out of the use of Biological resources and associated knowledge as defined in the Act.
- ◆ During the year, format for agreements on Access and Benefit Sharing and Notification of Guidelines for International Collaborative

Progress made during the year

- ◆ The Authority organized a number of seminars, symposia involving various stake holders to educate and create awareness in regard to provisions of the Act. The NBA has also considered 38 applications relating to access of Biological Resource and related matters and another 62 applications are under consideration and examination by the Authority.

Research Project involving transfer or exchange of biological resources was notified through Gazette Notification.

Genetic Engineering Approval Committee

The Genetic Engineering Approval Committee (GEAC), the apex body was notified under Rules for the Manufacture, Use, Import, Export and Storage of Hazardous Microorganisms/ Genetically Engineered Organisms or Cells Rules 1989 for regulation of genetically modified organisms in India. Ten meetings of the Committee were held during the year.

Progress / Achievements under GEAC

- ◆ Commercial Release of transgenic Crops: The GEAC has approved 42 Bt cotton hybrids for commercial release in the nine cotton growing states namely Andhra Pradesh, Gujarat, Haryana, Karnataka, Madhya Pradesh, Maharashtra, Punjab, Rajasthan and Tamil Nadu during Kharif 2006. In addition to Bt cotton hybrids expressing *Cry 1 Ac gene (MON 531 event)*, the GEAC has approved three new gene/event. namely Bt hybrids expressing encoding fusion genes (*cry 1Ab+Cry Ac*) ‘ GFM developed by M/s Nath Seeds, Bt hybrids expressing *cry 1Ac gene (Event-1)* by M/s JK Seeds Ltd and Bt hybrids expressing stacked genes *Cry1 Ac and Cry 2Ab (MON 15985 event)*—BG-II by M/s Mahyco. The GEAC has also approved 124 Bt hybrids for large scale trials with cry 1Ac gene and new gene event.
- ◆ Streamlining of the Regulatory Procedure for transgenic crops : The Ministry of Environment & Forests, had constituted a sub-Committee under the Chairmanship of Dr C D Mayee, Chairman ASRB, and Co-Chair GEAC, to look into the existing processes, protocols and other related issues and give recommendation for rationalization of the same. The final report of the sub-committee which was formulated through a consultative process was adopted by the GEAC. The sub-committee has recommended an event based approval procedure for Bt cotton expressing cry 1Ac gene (MON-531 event).
- ◆ For evaluating the performance of the Genetically Modified (GM) crops an alternate monitoring mechanism involving the State Agriculture Universities (SAUs) have been put in place wherein Director Research of SAUs has been appointed as the nodal point for pre-release field monitoring and Direct Agriculture Extension of SAUs as the nodal point for post release monitoring mechanism. A funding mechanism for the same has also been provided to assist the SAUs.
- ◆ Six Gazette Notifications (G.S.R.584 (E) to 589(E) dated September 21, 2006) empowering the Seed Inspectors/Analysts and Laboratories notified under Seed Act, also under EPA, 1986 has been issued on September 21, 2006 to curb the sale and production of illegal Bt cotton seeds. With the promulgation of the said notifications, the seed law enforcement agencies are empowered to take necessary punitive action against the offenders.
- ◆ Transgenic Bt Brinjal developed by M/s Mahyco—First GM Food crop : The Bt brinjal developed by M/s Mayhco expressing cry 1Ac gene from *Bacillus thuringiensis* tolerant to the fruit and shoot borer is under consideration of the GEAC. Public consultation by posting the biosafety data on Ministry’s website (<http://www.moef.gov.in>) has been conducted. The stakeholder feedback received through the public consultation is under review by an Expert Committee constituted by the Ministry under the Chairmanship of Prof Deepak Penthal, VC, Delhi University.
- ◆ Streamlining of the Regulatory Procedure for Pharma Products: An Inter-Ministerial Task Force on recombinant Pharma under Dr. R.A. Mashelkar was set up with a view to streamline the regulatory mechanism for r-pharma products. Taking into consideration the regulatory objective of Review Committee on Genetic Manipulation (RCGM), Genetic

Engineering Approval Committee (GEAC) and Drug Controller General of India (DCGI) and the risks involved in the use of Living Modified Organisms (LMOs), the Task Force has rationalized the regulatory procedure for the following five categories:

- ✧ Indigenous product development, manufacture and marketing of pharmaceutical products derived from LMOs but the end product is not a LMO:
 - ✧ Indigenous product development, manufacture and marketing of pharmaceutical products where the end product is a LMO:
 - ✧ Import and marketing of *LMOs* as Drugs/Pharmaceuticals in finished formulations where the end product is a LMO:
 - ✧ Import and marketing of LMOs as Drugs/Pharmaceuticals in bulk for making finished formulation where the end product is a LMO: .
 - ✧ Import and marketing of products derived from *LMOs* as Drugs/Pharmaceuticals in bulk and/or finished formulations where the end product is not a LMO.
- ◆ The recommendations of the Task Force have been adopted through an inter-ministerial consultation and have come into force on April 1, 2006. A Gazette Notification (G.S.R.616 (E)) exempting certain categories of products from the purview of GEAC has been issued on October 4, 2006.

Implementation of Cartagena Biosafety Protocol

- ◆ Ministry of Environment and Forests is the nodal Ministry for implementing the Cartagena Biosafety Protocol (CBP), the first international regulatory framework for safe transfer, handling and use of Living Modified Organisms (LMOs). The Indian delegation actively participated in the third meeting of the COP-MOP –3 held at Curitiba, Brazil

during March 13-17, 2006. The meeting adopted important decision regarding implementation of Article 18 2a which requires clear and detailed identification requirements for shipments of Living Modified Organisms that are intended for direct use as food or feed, or for processing (LMO-FFPs). A two-stage approach is set out for identification of LMOs in the shipment. In situations where identity of the LMO is known through “means such as identity preservation systems or other measures”, the shipment must be identified as one that “contains” LMOs that are for direct use as food or feed, or for processing. In cases where identity of the LMO is not known the shipment can be identified as one that “may contain” one or more LMOs that are intended for direct use as food or feed, or for processing.

- ◆ The fourth meeting of COP-MOP is scheduled in May, 2008 in Bonn, Germany. Preparation for participation in the inter-sessional meetings to facilitate decisions in the meeting of COP-MOP-4 have been initiated. The Indian delegation participated in the third meeting of the Ad hoc Open-ended Working Group on Liability and Redress to be held in Montreal Canada from February 19-23, 2007. The meeting discussed options and approaches on various issues such as Scope of “damage resulting from transboundary movements of LMOs”, Definition of damage, Causation, Channeling of liability, Role of Parties of import and export, Standard of liability, Exemptions to or mitigation of strict liability, Limitation of liability, Financial security, Supplementary collective compensation arrangements, Settlement of claims, Standing/right to bring claims, Non- Parties, Complementary Capacity Building measures, Choice of instrument.

Capacity Building to facilitate compliance of Biosafety regulation

- ◆ Extensive capacity building activities for various stakeholders continued under the

World Bank-GEF supported project on Capacity Building on biosafety. An International Conference on the Implications of the Cartagena Protocol on Biosafety was organized with an aim to provide a forum for exchange of information with national and international faculty in the important issues for strengthening the capacity of various stakeholders, identify areas for further development and harmonization of activities particularly at regional level. Different stakeholders from government, research institutions and industry had attended one conference. Eminent speakers from various parts of the world delivered lectures that were mainly focused on international and national efforts to support the implementation of the Cartagena Protocol on Biosafety.

- ◆ Series of regional workshops on safety assessment and regulations of GM crops with a special focus on Cartagena Protocol on Biosafety are being organized at eight state agricultural universities to sensitize and train scientists from state agricultural universities and other research institutions, state government officials, extension officers, NGOs and progressive farmers about issues related to safety assessment and regulation of use of GMOs/LMOs in agriculture and create awareness about the provision of the Cartagena Protocol on Biosafety.
- ◆ Many stakeholder specific workshops were organized in order to train and spread the knowledge of provisions of Cartagena Protocol on Biosafety (CPB) and to get feedback regarding the requirements for effective implementation of the Protocol from various stakeholders. Some workshops also included hands on training organized through various research institutions like Central Food Technological Research Institute (CFTRI), G.B Pant University of Agriculture & Technology (GBPUAT), National Bureau of Plant Genetic Resources (NBPGR), International Centre on Genetic Engineering and Biotechnology (ICGEB) etc.

- ◆ A workshop for custom officials was organized on the biosafety issues related to transboundary movement of LMOs. The objective of the workshop was to inform custom officials about laws, regulations, practice of domestic and foreign biosafety management, introducing the procedures for the application and approval of LMOs etc. Workshops for school children were also organized to spread awareness about the need for biosafety of GM crops (capacity building on biosafety for Eco Club Schools).
- ◆ The India Biosafety Clearing House (IND-BCH) has been established and made operational in order to facilitate exchange of scientific, technical environmental and legal information on living modified organisms (LMOs) as per Article 20 of the Cartagena Protocol on Biosafety.

GEF-World Bank Capacity Building on Biosafety

Introduction and Objectives

The Ministry is currently implementing a GEF-World Bank Capacity Building project on Biosafety aiming at strengthening the institutional capability as well as at enhancing the human resources capacities in the field of biosafety. The objective of the project is to assist India to fully implement the obligations under the Cartagena Protocol in Biosafety related to the transboundary movement of Living Modified Organisms (LMOs). This includes the assessment, management and long term monitoring and documentation of the risks to the sustainable use of biodiversity and to human health potentially posed by the introduction of LMOs. The major objectives for GEF support is to improve capacity across ministries and among key stakeholders to analyze, inform, and make decisions to reduce potential risks related to LMOs, increase benefits to society and protect biodiversity.

Achievements

Major achievements under this project so far are as follows:

- ◆ A comprehensive Training Needs Assessments

Survey (TNA) was carried out to identify the training needs of biotechnology stakeholders in the public and private sectors with regard to LMOs and products derived from them. Mapping of the stakeholders of biosafety in India has been completed and the report published and disseminated.

- ◆ Four laboratories are being strengthened for detection of LMOs. These laboratories are National Bureau of Plant Genetic Resources (NBPGR), G.B. Pant Agricultural University, National Research Centre on Plant Biotechnology (NRCPB) and Central Food Technological Research Institute (CFTRI).
- ◆ Compilation of the database on transgenic crops has been done and a website www.nrcpb.org on GM Crop Database has been launched.
- ◆ Rice biology document has been prepared and published.
- ◆ Project Website <http://www.envfor.nic.in/divisions/csurv/biosafety/default.htm> has been launched and is frequently updated.
- ◆ Five issues of biosafety newsletters have been published and widely circulated.
- ◆ India Biosafety Clearing House (www.indbch.nic.in) has been launched.
- ◆ Seventeen training programmes on various Biosafety issues have been organized till November' 2006.
- ◆ An International Conference on Implication of Cartagena Protocol on Biosafety was organized in Hotel Ashok, New Delhi, India from November 20-22, 2006. The conference was inaugurated by Hon'ble Minister for Environment & Forests. The Conference aimed at sharing experience on Biosafety as also to improve capacity among key stakeholders. Dr. Ahmed Djoghlaif, Executive Secretary, Convention on Biological Diversity (CBD) and many eminent scientists and experts from different countries and various UN and other organizations participated in the Conference and presented their view on

various aspects of Biosafety. Similarly many leading scientists from institutions within the country addressed the Conference.

All India Coordinated Project on Capacity Building in Taxonomy (AICOPTAX)

Introduction and Objectives

- ◆ India is one of the mega biodiversity nations of the world and it has a variety of ecological habitats with large variations in species of plants, animals and micro organisms. On account of such diverse ecosystems present in the country, we have a rich bio-diversity to be identified, classified and nurtured for present as well as future generations. So far about 90,000 species of animals and 47,000 species of plants have been identified and described but a large number of animals and plants are yet to be explored, identified and described.
- ◆ Taxonomy is the science which helps in exploration, identification and description of living organisms. However, the scope of taxonomy does not end with this. A sound taxonomic base is a pre-requisite for environmental assessment, ecological research, effective conservation, management and sustainable use of biological resources.
- ◆ As a signatory to the Convention on Biological Diversity (CBD) held in Rio de Janeiro in 1992, India has committed itself to capacity building in taxonomy and taken up exploration and preparation of an inventory of living organisms. The Ministry has set up an All India Co-ordinated Project on Taxonomy. The Project has organized specialist groups drawn from Universities, Botanical and Zoological Surveys of India to take up taxonomic work on animal viruses, bacteria and archaea, algae, fungi, lichens, bryophytes, pteridophytes, gymnosperms, palms, grasses, bamboos, orchids, helminthes and nematodes, Microlepidoptera and Mollusca. Training in plant and animal biosystematics has also been recognized as an important component. The project has been

- continued in 78 units during the year and financial assistance has been provided to various units for underlying taxonomic research work.
- ◆ The taxonomic issues that need to be addressed in this century are mostly those that require interfacing of systematics and other disciplines such as bio-prospecting, conservation biology, ecosystem management, bioremediation assessment of conservation status of species and roles of species in communities and ecosystems.
 - ◆ The entire AICOPTAX scheme was reviewed through a review workshop which was held on May 19-20, 2005 at Coimbatore. This was followed by the meeting of the Steering Committee which carefully gauged the progress made under each & every project and made project related recommendations as appropriate.

Major Highlights / Achievements

- ◆ Discovery of new species, new records
Several new records of wild flora and fauna have been made. Several new species have also been discovered. These are being documented and verified with voucher specimens for authenticity before publication during the XI Plan Period. Discovery of species new to science will be the major impact of the AICOPTAX Scheme.
- ◆ Increase in number of thematic areas of research on Taxonomy
As of date, there are 13 thematic areas, including one each on training in plant and animal taxonomy in compared to seven thematic areas for taxonomy research identified during previous plan period.
- ◆ Developing Guidelines for AICOPTAX Scheme
Draft detailed Guidelines for the preparation of taxonomy specific research/training projects are being formulated by way of augmentation of existing guidelines for general R&D funding.
- ◆ Better/more effective implementation strategies
Synergies & linkages with State Forest Departments and Coast Guards have been strengthened.
- ◆ Problem Areas
The expertise available in the country in Taxonomy is either aging or retiring and needs to be revived and resurrected during the XI Plan period.

Assistance to Botanical Gardens

- ◆ The scheme on Assistance to Botanical Gardens and Centres for *ex-situ* conservation was initiated in 1992 to augment ex-situ conservation of rare endemic plants. One time financial assistance is provided to the Botanical Gardens and Centre of Ex-situ Conservation, for improvement of their infrastructural facilities to facilitate ex-situ conservation of rare endemic plants. The achievements made in these Botanic Gardens are periodically monitored with the help of Botanical Survey of India.
- ◆ The Ministry has constituted an Expert Group to identify and recommend proposals received under the scheme. The Botanical Survey of India helps in identification of rare endemic plants requiring ex-situ conservation. During the year, 16 proposals for various Botanical Gardens have been recommended for funding, taking the total number of Gardens to 261.
- ◆ The guidelines for the scheme were comprehensively revised based on the perception of these gardens being centres of awareness creation, and not just research activities. The thrust of the revised guidelines is to develop Botanical Gardens as Centres for rescue, recovery and rehabilitation of rare, endangered and threatened prone species of plants. The gardens are also envisaged to play an important role in education and as a centre of training in areas such as horticulture, gardening, landscaping, *ex-situ* conservation

and environmental awareness. Under the scheme, it is envisaged that there would be a network of Botanical Gardens/Botanical Sections in popular horticulture or thematic gardens all over the country. It is expected that the network would cover approximately 1/3rd of the districts of the country by the end of XIth Five Year Plan.

- ◆ The Revised Guidelines envisage establishment and promotion of Lead Gardens in each phyto-geographic zone. Based on the criteria prescribed in the guidelines, a number of proposals have been received for development of 'Lead Gardens' in different phyto-geographic zones of the country. These Lead Gardens shall provide necessary expertise for smaller gardens, and shall be equipped with modern facilities.

Medicinal Plants

Objectives

The implementation of a UNDP-CCF II Project "National Programme on Promoting Conservation of Medicinal Plants and Traditional Knowledge for Enhancing Health and Livelihood Security" was started in nine states viz; Karnataka, Kerala, Tamil Nadu, Andhra Pradesh, Maharashtra, Madhya Pradesh, Orissa, West Bengal and Rajasthan, with the following objectives;

- ◆ To assist nine project states to conserve wild population of medicinal plants
- ◆ To revitalize the indigenous health care knowledge and
- ◆ To enhance the health and livelihood security.

Progress / Achievements

- ◆ A high level Project Management Board (PMB) to oversee and facilitate the interdepartmental coordination and an Empowered Project Steering Committee (EPSC) to guide the implementation of the Project has been constituted. The Technical Coordination of implementation of the project is being done by the Foundation for Revitalisation of Local Health Traditions, Bangalore.



Fig 29. Ativisa (*Aconitum heterophyllum* Wall. ExRoyle) – a medicinal plant of North-West Himalayas

- ◆ Eight field level project components are being implemented by the respective State Forest Departments and selected NGOs, called Cooperating Agencies (CAs). The Ministry has adopted a principle of at least two components for each state and every component to be implemented in at least two states, so as to enhance the size and impact of project implementation.
- ◆ The Project States have constituted the Project Steering Committees and have prepared work plans for their respective components. The process of identification of sites for establishing Medicinal Plants Conservation Areas (MPCAs) in four states, establishment of sustainable harvest of NTFPS and medicinal Plants in three states, need assessment for Central Seed centers in four states, capacity building for establishing Home Herbal Gardens (HHGs) and

preparation of Community Knowledge Registers (CKRs), have been undertaken. Rapid Threat assessment exercises called Conservation and Assessment of Medicinal Plants (CAMP) workshops, as per IUCN guidelines for prioritized medicinal Plants species, are being organized in three states viz; Orissa, Rajasthan and West Bengal.

Forest Conservation

Objectives

The mandate of the Forest Conservation Division is to implement the Forest (Conservation) Act, 1980, which was enacted on October 25, 1980. This Act deals with grant of forestry clearances for diversion of forest lands for non-forestry purposes in respect of development projects like power, roads, railways, irrigation, mining, schools, defence, drinking water, resettlement and rehabilitation of people etc. This Act is regulatory in nature, not prohibitory.

Activities undertaken

- ◆ Under Forest (Conservation) Act, since its enactment in 1980 about 14,200 developmental projects involving about 7.00 lakh hectares forest area have been granted forestry clearance. These include the projects for power generation, irrigation, construction of roads, railway lines, transmission lines, drinking water supply projects, village electricity, schools, hospitals etc. Out of these, during the last year, from January 1, 2006 to December 31, 2006, about 1,570 developmental projects of various categories involving about 43,800 hectares of forest land, have been granted forestry clearance under the Forest (Conservation) Act, 1980.
- ◆ To boost the development of underdeveloped area, one time clearance has been granted on January 3, 2005 under Forest (Conservation) Act, 1980 for public utility developmental projects involving not more than one hectare of forest land, to be executed by Government Department namely, schools, dispensary/hospital, electric and telecommunication lines, drinking water, water/rainwater harvesting structures, minor irrigation canal, non-conventional sources of energy, skill up-gradation/vocational training center, power sub-stations, communication posts and police establishments like police stations/outposts/ border outposts/watch towers, in sensitive areas.
- ◆ In tribal areas, validity of general approval under Section-2 for the Forest (Conservation) Act, 1980 has been accorded for underground laying of electric cable and wires to individual household, drinking water supply/water pipelines, telephone lines which involve felling of trees not exceeding 50 numbers per project and are outside the National Parks and Sanctuaries and are laid along the road has been extended up to October 15, 2007.
- ◆ To provide better means of communication and accessibility to the nearest market to tribal and rural people, it has been conveyed to the State/Union Territory (UT) Governments through a set of detailed guidelines issued under this Act on dated April 30, 2005 that for up-gradation of roads constructed in forest areas prior to 1980, from 'Kutchcha to Pucca', without widening, prior permission of Central Government under Forest (Conservation) Act, 1980 is not required. However, if any such projects fall in a National Park/Sanctuary, prior permission of National Board of Wildlife (NBWL) and the Supreme Court is essential.
- ◆ In order to provide better living conditions to the tribal and rural people, Central government has issued general approval under Forest (Conservation) Act, 1980 on June 9, 2005, to permit the right holders recognized under Indian Forest Act, 1927, to collect the stones/slates/boulders etc. from forest areas for their bona fide domestic use subject to certain conditions. No commercial use is permitted under this dispensation.
- ◆ The procedure for forestry clearance has been simplified by Forest (Conservation) Rules, 2003. Under the rules, Central government has fixed time limit of 60 days to take decision

on a proposal seeking forestry clearance.

- ◆ Good practices have been adopted to ensure transparency in the system of forestry clearances. Dates of meetings to be held every month in the Ministry and its Regional Offices have been fixed. Rules, guidelines, status of proposals, approvals are displayed on the Website of the Ministry.

Regional Offices

Introduction

The Ministry has six Regional Offices located at Bangalore, Bhopal, Bhubaneswar, Lucknow, Shillong and Chandigarh with units headquarter in the Ministry at New Delhi. Details of the regional offices and their jurisdictions are given in Annexure-IIA.

Objectives

The primary function of the Regional Offices of the Ministry is to monitor the ongoing forestry projects and schemes with specific emphasis on conservation of forests and follow up action on the

implementation of conditions and safeguards laid down by the Ministry while granting clearance to development projects under FCA/EPA. The Regional Chief Conservator of Forests are empowered to decide cases for diversion of forest land for non-forestry purposes upto the extent of 40 hectare except for mining and regularization of encroachment

Progress of Activities

Region-wise target and achievement of monitoring of approved proposal's under the Forest(Conservation) Act, 1980 and Environment Protection Acts, 1986 during the year are given in Table-5.

Forest Policy

- ◆ Pursuant upon the recommendation made by the Indian Board of Wildlife in its 21st Meeting held on January 21, 2002 under the chairmanship of Hon'ble Prime Minister of India, the National Forest Commission, with Justice B.N. Kirpal ex-Chief Justice of India with six other members was constituted

Table-5. Statement Showing Region-wise Physical/Financial target and achievement under FCA 1980 and EPA 1986 for the year 2006-2007.

(Rs. in crores) Phy. in No.

	Physical Targets				Financial Target			
	FCA		EPA		Revenue		Capital	
	Target	Achievement	Target	Achievement	Target	Achievement	Target	Achievement
2005-06	735	71%	570	117%	5.00	90%	0.50	100%

Physical Targets Region-Wise

S.No.	Regional Offices	FCA	Achievement	EPA	Achievement
1.	Bangalore	150	110 (73%)	150	125 (83%)
2.	Bhopal	90	91 (100%)	100	101 (100%)
3.	Bhubaneswar	150	86 (56%)	80	109 (136%)
4.	Lucknow	160	120 (75%)	110	125 (110%)
5.	Shillong	90	60 (65%)	60	65 (108%)
6.	Chandigarh	95	55 (60%)	70	146 (210%)
7.	RO(HQ)	Coordinating/Monitoring the work of Six Regional Office's of the Ministry			
	Total	735	522 (71%)	570	671 (117%)

vide resolution dated 7th February 2003 of Ministry of Environment & Forests. After interacting with various stakeholders and State/UT Governments, the Commission submitted its report to the Hon'ble Prime Minister on March 28, 2006.

- ◆ The report has 23 chapters, of which 20 chapters, from 2 to 21, deal with various subject like "Forest Policy", "Legal Framework", "Forest Administration", "Personnel Management" etc. However, realizing the importance of specific issues, topics like "Forest of North East", "Agro Forestry & Social Forestry", "Forests in National Resource Accounting" and "Financial Support" has been dealt in separate chapters.
- ◆ There are 360 recommendations. Action on these recommendations is to be taken by Govt. of India as well as by State Governments. Salient features of the recommendations are as follows:
 - ◆ No change suggested in NFP, 1988
 - ◆ Need to undertake scientific research to assess the optimum forest/tree cover according to the forest type and topography to meet the intended objectives.
 - ◆ Bamboo, including ringal and cane must be included in minor forest produce
 - ◆ Amendment of Indian Forest Act, 1927
 - ◆ Forest Department should implement the Biological Diversity Act, 2002 and Environment Protection Act.
 - ◆ No amendment and further dilution to Forest Conservation Act, 1980
 - ◆ Re-scheduling of species under Wildlife Protection Act to avoid man-animal conflict.
 - ◆ Monitoring and Assessment on the basis of indicators developed for sustainable forest management.
 - ◆ Scarcity of financial resources for forest and wildlife sector. Minimum 2.5% of

total financial allocation to forest and wildlife sector.

- ◆ Need to highlight the real contribution of forest sector in GDP.
- ◆ Need to frame a National Wetland Conservation Act
- ◆ Need to strengthen capacity of Joint Forest Management Committees (JFMCs)
- ◆ Creation of Forests and Wildlife as a separate department under Ministry of Environment & Forests
- ◆ Need to increase productivity of forests as well as development of high yielding varieties
- ◆ Funds allocation to Research & Development wing on priority.
- ◆ Need to fill the vacancies of front line staff in forest department including forest guards and foresters. Situation is alarming. Around 40-50 percent posts are vacant and average age of the staff is around 45 years.
- ◆ To overcome the stagnation in subordinate service, state forest service and Indian Forest Service.
- ◆ Specialization in forest service to achieve ecological and environmental stability
- ◆ Enhancing import duty on forest products to create better market for agro forestry.
- ◆ Preservation of sacred groves and formation of village forests.

Bilateral Forestry Cooperation between India & China

The areas of cooperation as per the Agreement between the two countries are as follows:

- ◆ Prevention and management of desertification.
- ◆ Development and utilization of forestry resources.
- ◆ Supporting technological cooperation

between research organization, forestry institutions and other units.

- ❖ Prevention of plant diseases, insects and pests and intrusion by external organisms.
- ❖ Prevention and control of forest fire.
- ❖ Cooperation on wood based industry, sustainable forestry enterprise, trade and policies.
- ❖ Enhancing livelihood opportunities of local communities through NTFP.
- ❖ Exchange of and communication on information of wildlife conservation and illegal wildlife trade.

Besides, attention of PMO was also requested for a few other recommendations regarding existing Forest Policy, Forest (Conservation) Act, 1980, Scheduled Tribes Bill etc.

Integrated Forest Protection Scheme

Introduction and Objectives

Integrated Forest Protection Scheme was formulated by the merger of two schemes of the Ninth Five Year Plan namely 'Forest Fire Control and Management' and 'Bridging up of Infrastructural Gaps in the Forestry Sector in the North Eastern Region and Sikkim'. It is operational from 2002-03. The scheme covers all the States and UT's for the Tenth Five Year Plan period. The main components of the scheme are:

- A. Infrastructure Development
 - ❖ Working plan preparation/survey and demarcation
 - ❖ Strengthening of infrastructure for forest protection
- B. Forest Fire Control and Management.

The Central Sector Component of the Scheme is implemented by the Forest Protection Division of the Ministry in association with Forest Survey of India, Dehradun and other Central Institutions like Indian Council of Forestry Research and Education, Dehradun, Indian Institute of Forest Management, Bhopal and National Center for Medium Range Weather

Forecasting.

The State Sector Component of the Scheme is being implemented by the Forest Departments of the concerned State Governments and UT's.

Activities undertaken

The Central Assistance is provided for various activities which will help to protect and improve the existing forest. The major items of expenditure include communication, mobility, fire fighting measures, construction of offices and residences particularly of the front line staff, technology upgradation and skill development, survey and demarcation and writing of working plans, assistance to Joint Forest Management Committees etc.

Management of Gregarious Flowering of Bamboos in North-Eastern India

- ◆ In order to tackle the ecological, social and economic problems likely to arise out of the gregarious flowering of Muli (*Melocanna baccifera*) bamboos in the North – Eastern States of India, an Action Plan was prepared after thorough consultations with all the stakeholders including research institutes, concerned State Governments and Ministries/Organisations of the Government of India for an amount of Rs 366 crores to be implemented over a period of five years (2004 – 05 to 2006 -09).
- ◆ In order to assist the North Eastern (NE) States in successful implementation of various components of the Action Plan, the Ministry decided to have a new centrally sponsored scheme for partial funding of the identified activities under the Action Plan. The total outlay under this new scheme is Rs 85.00 crores for a period of four years starting from 2005-06. The proposed activities to be undertaken include infrastructure development, resource survey, regeneration, fire control, rodent control, awareness generation and research on various aspects of management of gregarious flowering.
- ◆ The progress of implementation of the Action

Plan is being reviewed by a Central Monitoring Committee (CMC) chaired by DGF & Special Secretary with representatives from the NE states, various ministries/organisations of the Government of India.

- ◆ During the year, four meetings of the CMC have been held. An amount of Rs 25 crores has been released during the year to the States of Arunachal Pradesh, Mizoram, Manipur, Nagaland, Tripura and Uttarakhand.

Wildlife Conservation

Progress of activities under different programmes of Wildlife Conservation are as follows:

Assistance for development of National Parks and Sanctuaries

- ◆ The objective of the scheme is to provide financial assistance to the States and UTs to develop Protected Areas (National Parks and Sanctuaries) and to encourage them to extend the Protected Area Network, to create infrastructural facilities for better protection

and management of these protected areas; and to provide financial assistance for eco-development, training, capacity building and research studies. An important provision under this scheme is for relocation of villages falling within the Protected Areas to outside areas and settlement of rights.

- ◆ Under this scheme, 100% grant is provided for identified items of non-recurring expenditure in the case of National Parks and Wildlife Sanctuaries. Also, 50% assistance is provided in respect of recurring items of expenditure in case of National Parks. For Protected Areas (National Parks and Wildlife Sanctuaries both) in higher altitude region, deserts or ocean eco-system with identified endangered species, 100% financial support is provided for both recurring and non recurring items of work.
- ◆ During the year, 340 Protected Areas were provided financial assistance under this scheme.



Fig 30. Chital (Spotted deer) at Mudumalai Sanctuary

National Board for Wildlife

- ◆ The third meeting of the National Board for Wildlife was held on June 19, 2006 under the Chairmanship of Hon'ble Prime Minister. The important decisions taken during the meeting include alternate home for lion; survey for assessing the current status of peacocks in the country; preparation of an action plan for conservation of the red jungle fowl; identification of wetlands outside the Protected Area system for conservation, etc.
- ◆ Three meetings of the Standing Committee of National Board for Wildlife were also held in January, June and September 2006 under the chairmanship of Hon'ble Minister for Environment & Forests.

Wildlife (Protection) Act, 1972

- ◆ The Wildlife (Protection) Act, 1972 was amended in 2006 to incorporate the creation of National Tiger Conservation Authority. The amendment was notified on September 4, 2006. The first meeting of the National Tiger Conservation Authority was held on November 6, 2006.

International Conventions related to Wildlife Matters

- ◆ India is signatory to several International Conventions concerning wildlife matters such as The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), Convention on Conservation of Migratory Species (CMS), International Whaling Commission, World Heritage Convention etc. The Ministry is the focal point for these Conventions in India.
- ◆ During the year, India had participated in the 57th Annual meeting of the International Whaling Commission, held during June 2006 at St. Kitts & Nevis and had strongly advocated for conservation of whales and their habitat.
- ◆ India had also participated in the Asia Pacific Migratory Water bird Conservation Committee meeting held at Bogor, Indonesia

during November 2006. The meeting had discussed various aspects of conservation of migratory water birds in the Asia Pacific region and also conservation of water birds along the Central Asian Flyway region.

Wildlife Institute of India

The Wildlife Institute of India (WII) was established in 1982 under the Ministry of Agriculture and subsequently brought under the Ministry of Environment and Forests. The mandate of the Institute is to impart training, carry out research and advise on matters of conservation and management of wildlife. WII is an autonomous Institute of the Ministry, with a 48-member WII Society headed by the Hon'ble Minister for Environment and Forests, as the apex body.

Enforcement-working of Regional Deputy Directors, Wildlife Preservation

Introduction

Protection of wildlife is listed at item 17b of the List-III (concurrent subjects) under the division of executive functions between the Union and States. With the enactment of Wild Life (Protection) Act, 1972, two Statutory Offices were created for its implementation and enforcement with Director, Wild Life Preservation under the aegis of Government, of India and Chief Wild Life Warden under the aegis of respective State Governments. Four Offices of Assistant Director (Wild Life Preservation) have been created one each at Delhi, Mumbai, Chennai and Kolkata for carrying out the field level statutory functions of Director (WLP) during 1975. The posts of Assistant Director (WLP) has been twice upgraded first to Deputy Director (WLP) and then on to Regional Dy. Director (WLP) at present. There are three sub-regional offices at Cochin, Guwahati and Amritsar for assisting the Regional Deputy Director.

Objectives

The role of the Regional Offices can be summarized as:

- ◆ To assist the exit point agencies such as Customs etc in identification of the goods and its status under WLPA, CITES & Exim

Policy, through pre/post shipment examination.

- ◆ To provide Wildlife Trade/ Enforcement related specific inputs to the front line agencies at the exits.
- ◆ To transfer the exit trade related information to field agencies and to the transnational enforcement partners.
- ◆ To act as Asst. Management Authorities of CITES.

Progress of Activities

Some of the special activities undertaken by these offices during the year are as follows:

- ◆ Streamlining of Inspection Procedures: For streamlining the procedures of consignment inspections and to enhance systemic control for acting as deterrence against smuggling of Wild Life/ CITES flora & fauna and to optimize the chances of fool proof detection of misdeclarations, a MS Excel based inspection macro was designed and introduced on pilot basis for further customization during last year.
- ◆ Field level forensic facility: The field level forensic facility was created and made fully functional and was able to achieve a niche for itself amongst the law enforcement machinery including the Hon. Courts of Law. During the relevant period, cases have been directly referred to by the Hon. Court of Law under its hand and seal to examine and submit the identification report to it. A total of 11 skins examined and the ivory were found to be fakes. This rapid field level delineation has not only investigation but also served the interest of justice.
- ◆ Two lectures were delivered to the Customs Personnel at the National Academy of Customs & Central Excise, Chennai on the above subject. The Wild Life Inspector has also delivered a lecture to the students of M.Sc (Wild Life Biology) Course at AVC College, Myladuthurai on Wild Life Trade and CITES. The Regional Deputy Director has

delivered two lectures to the Forest Officers on Exim Policy, CITES, Wild Life Trade and Forensics at the State Forest Service College, Coimbatore.

Central Zoo Authority

Introduction and Objectives

Central Zoo Authority (CZA) was created by the Government of India through an amendment of the Wild Life (Protection) Act, in 1992. The main objective is to enforce minimum standards and norms for the upkeep and healthcare of animals in Indian Zoos and to restrain the mushrooming of unplanned and ill conceived zoos that were cropping up as adjuncts to public parks, industrial complexes and wayside.

The Central Zoo Authority is a 12 Member body headed by the Chairman. The Minister, Environment & Forests, Government of India is ex-officio Chairman of the Authority. The Member Secretary is the Chief Executive Officer of the Authority. There are 10 regular and four contractual staff to assist the Member Secretary in discharging of his duties. The administrative office of the CZA is presently located at Bikaner House, Annexe No. VI, Shahjahan Road, New Delhi.

Activities undertaken

- ◆ During the year, four large zoos, one medium zoo, two small and 25 mini zoos/ rescue centres and 23 circuses were evaluated. Recognition has been granted to four large, one medium, two small and 12 mini zoos/ rescue centres. 17 circuses have been granted recognition. Recognition has been refused to 23 mini zoos/rescue centres.
- ◆ Rs.934.131 lakhs was released to various zoos in the country for improvement of housing, veterinary and upkeep facilities for the wild animals. The CZA has decided to provide an amount of Rs.100 lakhs for establishment of conservation breeding centre for vultures in the zoos at Bhopal (Van Vihar), Bhubneswar (Nandankanan), Hyderabad (Nehru Zoological Park) and Junagarh (Sakkarbaug Zoo). The respective state governments have been requested to submit proposals for

creation of the centres. Twenty three lions and tigers from the circuses were rehabilitated in the Rescue Centres being supported by the Central Zoo Authority during the year.

- ◆ In order to provide advance diagnostic help to the zoos in the country, the scheme for strengthening of identified veterinary colleges/ universities was continued during this year also. Annual grant to the colleges/ universities towards recurring expenditure with respect to remuneration of research assistants and consumables was provided.
- ◆ To help the Indian zoos in easy identification of the parasites infecting the captive wild animals, a colour atlas on 'Parasites of captive wild animals' was brought out by the Madras Veterinary College, Chennai with financial assistance from the CZA.
- ◆ Financial assistance to various organisations and zoos was approved during the year to take up research activities is given in Table-6.

Besides, small fellowships were also awarded during the year to various Zoos like: Aizwal Zoo, Mizoram; Indira Gandhi Zoological Park, Vishakapatnam; Zoological Garden, Alipore, Kolkata; Padmaja Naidu Himalayan Zoological Park, Darjeeling; National Zoological Park, Delhi

Training programme for zoo directors and zoo supervisors were organised at Nandankanan, Bhubneswar and Chennai during month of April and November, 2006 respectively. Training programmes were organised by the Kanpur Zoo (Hindi speaking states), Ahmedabad Zoo (Gujarati

& Marathi) and Mysore Zoo (Kannada) for zoo keepers during the current financial year. Besides these, trainings and workshops on planning and designing of several zoos were also hosted by CZA.

Assistance to various Zoos

Grants released to various zoos in the country during the year for their modernization is given in Table-7.

National Zoological Park

Introduction and Objective

On the recommendation of Indian Board for Wildlife (Now National Board for Wildlife) in 1952 the Government of India set up a Zoological Park in capital for conservation and breeding of rare fauna and to educate the visitors as well.

The Zoological Park was established between the two historical monuments namely Old Fort and Tomb of Humayun and was inaugurated on November 1, 1959. The park was developed on modern concept of zoo management. The 196 acres park present green lawn, grooves of trees, colourful shrubbery and number of herbs. The animals have been displayed in the open, spacious, moated enclosure.

Activities undertaken

- ◆ In order to achieve its goal the following activities were undertaken during the year:
 - ◇ A new Monkey Island enclosure was built in order to display the monkeys in open enclosure.
 - ◇ Renovation and revamping of the

Table-6. Grants released to various organisations

S.No.	Name of the Institute/ Organisation	Subject of proposed research activity	Amount (Rs. in lakhs)
1.	School of Planning & Architecture, New Delhi	Formulating broad guidelines on principles of zoo designing	23.14
2.	Indian Veterinary Research Institute, Bareilly	Evolving standard protocol on wild animal health	19.5
3.	Centre for Environment Education, Ahmedabad	Zoo education master plan	17.27

Table-7. Assistance to various Zoos

			(Rupees in lakhs)
S.No.	State Name	Name of the Zoo	Amount Released
1.	Andaman & Nicobar Islands	Biological Park, Chidiyatapu	70.00
2.	Andhra Pradesh	Tirupati rescue centre	20.00
		Vishakhapatnam rescue centre	20.00
		Nehru Zoological Park, Hyderabad	13.00
		Indira Gandhi Zoological Park, Vishakapatnam	1.00
3.	Arunachal Pradesh	Itanagar Biological Park	83.00
4.	Delhi	National Zoological Park, New Delhi	62.75
5.	Gujarat	Sayaji Bagh Zoo, Vadodra	56.50
		Kamla Nehru Zoological Park, Ahmedabad	9.00
		Sakkarbaug Zoo, Junagarh	8.01
6.	Jharkhand	Bhagwan Birsa Biological Park, Ranchi	10.12
7.	Karnataka	Tiger & Lion Safari, Shimoga	6.00
		Bannerghatta rescue centre, Bangalore	79.00
8.	Kerala	Thiruvananthapuram Zoo	32.90
9.	Madhya Pradesh	Kamla Nehru Prani Sangrahalay, Indore	40.35
10.	Maharashtra	Rajiv Gandhi Zoological Park, Pune	50.00
		Sanjay Gandhi Zoo, Borivilli	22.00
11.	Mizoram	Aizawl Zoo, Mizoram	43.00
12.	Nagaland	Rangapahar Zoo, Dimapur	30.00
13.	Orissa	Nandakanan Zoological Park, Bhubaneshwar	64.75
14.	Rajasthan	Nahargarh rescue centre, Jaipur	32.00
15.	Punjab	M.C. Zoological Park, Chhat Bir	37.75
16.	Tamil Nadu	Vandalur rescue centre, Chennai	51.00
		Children's Park Zoo, Guindy	3.00
		Chennai Snake Park, Guindy	2.50
17.	Uttar Pradesh	Kanpur Zoo	7.50
18.	West Bengal	South Khairabari rescue centre, Cooch Behar	51.00
		Padmaja Naidu Himalayan Zoological Park, Darjeeling	25.00
		Zoological Garden, Alipore, Kolkata	3.00
Total			934.13

following enclosure have been taken through the Civil Construction Unit.

- ★ Bentang enclosure
- ★ Sambar enclosure
- ★ Old Chimpanzee House
- ★ Extension of display area of Hippo Enclosure

- ◇ Desilting of Painted Stork Pond and Pond in front of Administrative Block and adjoining moats.
- ◇ Two new toilets are coming up as visitor's facility.
- ◇ Ninety benches have been placed at different location for the visitors to rest and see the animals.
- ◇ Forty Four new Red Stone directional boards have been fixed.
- ◇ The Guiding Trail was repainted.
- ◇ First Aid Post was indicated broadly.

◆ The park acquired the following animals during the year:

- ◇ One pair of Lion Tailed Macaque from Chennai
- ◇ Two chimpanzee from Germany; and
- ◇ One pair of Gaur from Mysore Zoo

◆ The following animals were sent to various other zoos:

- ◇ One Chimpanzee sent to Chattbir Zoo, Punjab
- ◇ One pair of White Tiger sent to Chennai
- ◇ One pair of White Tiger sent to Patna Zoo
- ◇ Two pairs of thamin deer sent to Chattbir Zoo, Punjab

◆ The notable births took place in the Park are:

- ◇ Swamp Deer - two
- ◇ Thamin Deer - eight
- ◇ White Tiger - four
- ◇ Jaguar - two
- ◇ Hippo - one

- ◇ Emu - two
- ◇ Red Jungle Fowl - ten
- ◇ Blue & Yellow Macaw - three

◆ The Veterinary Hospital is continuing to provide regular care and ensures a balanced and nutritious diet to each animal. They regularly conduct the examination of Fecal, Urine, and blood samples. The Veterinary Hospital is successful in hand rearing of two Jaguar cubs.

◆ A number of public awareness programmes was organized during the year by the NZP.

◇ An Orientation Programme was organized for the teachers of different schools of Delhi and adjoining states to make them aware about the conservation of the animals.

◇ In the first week of October, Wildlife Week was organized as a part of awareness campaign and the following programmes were conducted.

- ★ On the Spot Painting Competition
- ★ Essay Writing Competition
- ★ Animal Quiz Contest
- ★ Amateur Photography Competition

◇ About 15 lakh visitors visits the park every year.

Project Tiger

Introduction and Objectives

◆ Project Tiger was launched in 1973 with an objective "to maintenance of a viable Population of Tigers in India for scientific, economic, aesthetic, cultural and ecological values, and to preserve for all times, areas of biological importance as a national heritage for the benefit, education and enjoyment of the people". The Project has been successfully implemented, and at present there are 28 Tiger Reserves in 17 states, covering an area of 37,761 sq.km.

- ◆ The selection of reserves was guided by the need to conserve unique ecosystem/habitat types across the geographic distribution of tigers in the country. The network of Tiger Reserves include high mountainous terrains of Arunachal Pradesh, the heavy rainfall areas of Assam and West Bengal, the estuarine mangroves of Sunderbans, the dry forests of Rajasthan, the foothills of the Himalayas in Uttaranchal, Uttar Pradesh and Bihar, the Central Indian Highlands of Madhya Pradesh, Chattisgarh, and Maharashtra, the plateau of Chota Nagpur (Jharkhand), the hilly tropical and evergreen forests of Orissa, the evergreen forests of Western Ghats in Kerala and Karnataka, the dry deciduous forests of Andhra Pradesh and the Southern moist deciduous forests of Tamil Nadu. 'Project Tiger' is undisputedly the custodian of major gene pool of the country and a repository of some of the most valuable ecosystem and habitats for wildlife.
- ◆ The tiger reserves are constituted for the purpose of management on a 'core' 'buffer' strategy. In the core area, forestry operations, collection of non-timber forest produce, grazing human settlement and other biotic disturbances are not allowed, and is singularly oriented towards conservation. The buffer zone is managed as a 'multiple use area', with conservation oriented land use, having the twin objectives of ensuring habitat supplement to the spillover population of wild animals from the core, apart from providing site specific eco-developmental inputs to stakeholder communities. The main thrust of the project is protection and mitigation of deleterious human impacts with a view to comprehensively revive the natural ecosystems in the reserves. Brief details on existing Tiger Reserves are given in Table-8.
- ◆ Tiger reserves in Tiger range states were undertaken.
- ◆ "In principle" approval has been given for eight new tiger reserves in the country.
- ◆ All India Assessment of Tiger status (mapping of tiger presence, breeding units, habitat quality at the taluk level resolution) in the GIS domain (in collaboration with Wildlife Institute of India) is undertaken.
- ◆ All India comparative assessment of forest cover status in tiger reserves and their surrounding areas upto a radius of ten kms. (in collaboration with Forest Survey of India) is undertaken.
- ◆ Evaluation of management practices in 28 Tiger Reserves by a panel of Indian experts selected on the basis of their qualifications, experience, independence, and absence of conflict of interest is undertaken. The evaluation was based on a framework of the World Commission on Protected Areas (IUCN) as adapted to Indian conditions, and the assessment reports were peer reviewed by international experts nominated by the IUCN and placed before Parliament.
- ◆ The methodology being followed in the current tiger estimation all over the country been evolved by a collaborative research project between the Wildlife Institute of India (WII) and the Project Tiger. This involves sampling and estimation of tiger density in different strata using a combination of methods, i.e. camera traps, digital photography of pugmarks to fix identities by a computer based recognition technique, based on a mark-capture statistical framework. At places, scats are also being collected for DNA characterization. The methodology has been accepted by the Tiger Task Force. Panels of independent internal as well as external experts are also peer reviewing the process, right from the Primary Data Collection in the field. Qualified data collectors have been specially trained and deployed for collecting field data using camera

Progress/ Achievements made during the year

The main activities of the 'Project Tiger' during the year are as follows:

- ◆ Protection, conservation and management of

Table-8. Tiger Reserves

S. No.	Year of creation	Name of Tiger Reserve	State	Total Area (in Sq. Kms)
1	1973-74	Bandipur	Karnataka	866
	1999-2000	Nagarhole-(extension)	-	643
2.	1973-74	Corbett	Uttar Pradesh	1316
3.	1973-74	Kanha	Madhya Pradesh	1945
4.	1973-74	Manas	Assam	2840
5.	1973-74	Melghat	Maharashtra	1677
6.	1973-74	Palamau	Bihar	1026
7.	1973-74	Ranthambore	Rajasthan	1334
8.	1973-74	Similipal	Orissa	2750
9.	1973-74	Sunderbans	West Bengal	2585
10.	1978-79	Periyar	Kerala	777
11.	1978-79	Sariska	Rajasthan	866
12.	1982-83	Buxa	West Bengal	759
13.	1982-83	Indravati	Madhya Pradesh	2799
14.	1982-83	Nagarjunsagar	Andhra Pradesh	3568
15.	1982-83	Namdapa	Arunachal Pradesh	1985
16.	1987-88	Dudhwa	Uttar Pradesh	811
	1999-2000	Katerniaghat- (extension)		551
17.	1988-89	Kalakad-Mundanthurai	Tamil Nadu	800
18	1989-90	Valmiki	Bihar	840
19	1992-93	Pench	Madhya Pradesh	758
20	1992-93	Tadoba Andheri	Maharashtra	620
21	1993-94	Bandhavgarh	Madhya Pradesh	1162
22	1994-95	Panna	Madhya Pradesh	542
23	1994-95	Dampa	Mizoram	500
24	1998-99	Bhadra	Karnataka	492
25	1998-99	Pench	Maharashtra	257
26	1999-2000	Pakui	Arunachal Pradesh	862
27	1999-2000	Nameri	Assam	344
28	1999-2000	Bori, Satpura, Panchmari	Madhya Pradesh	1486
Total				37761

traps/digital pugmark impressions, who are also assisting the local staff in data collection. The result of the new methodology would not be comparable with the earlier one, and the Ministry will stand by the results yielded by the new methodology, irrespective of whether the new tiger numbers are more, the same, or less than in the last census. The new methodology would give the 95% interval of statistical confidence of the tiger numbers,

rather than the point estimate of the earlier census.

- ◆ Steps have been taken for implementing the urgent recommendations of the Tiger Task Force which, inter alia, including setting up of the 'National Tiger Conservation Authority' and the 'Tiger and Other Endangered Species Crime Control Bureau' (Wildlife Crime Control Bureau).

Financial Support Provided

Funding support under the scheme is provided to state government concern having Tiger Reserves through annual plan of operation. State Forest department implements the activities as per the approved annual plan of operation. State government provides 50% financial support for recurring items. Annual Plan of Operation has been sanctioned for 28 Tiger Reserves and funding support has been provided for protection, conservation and management of Tiger reserves.

State-wise release of financial assistance during 2006-07 (As on 31.01.2007) is given in Table-9.

Table-9. State-wise release of financial assistance (As on 31.01.2007)		
(Rs. in lakhs)		
Sl. No.	Name of Tiger Range State	2006-07
1.	Andhra Pradesh	35.00
2.	Arunachal Pradesh	210.4725
3.	Assam	65.00
4.	Bihar	37.1454
5.	Chattisgarh	10.00
6.	Karnataka	219.067
7.	Kerala	109.00
8.	Jharkhand	100.00
9.	Madhya Pradesh	742.55
10.	Maharashtra	229.51
11.	Mizoram	78.16
12.	Orissa	150.25
13.	Rajasthan	100.876
14.	Tamil Nadu	85.165
15.	Uttaranchal	160.295
16.	Uttar Pradesh	75.00
17.	West Bengal	177.30
Total		2584.7909

Biodiversity Conservation Rural Living and Improvement Project (BCRLIP) – Externally Aided Project

The objective of the BCRLIP project is to conserve biodiversity, while improving rural livelihoods through testing and establishing decentralized participatory approaches across a range of globally and nationally important landscapes under management regimes. Consultancy services for social and environmental assessment were awarded during the year.

An amount of Rs.104.54 lakhs was released to various States under the project as follows during the year:

(Rs. in lakhs)		
Sl. No.	State	Amount
1.	Gujarat	15.10
2.	Jammu & Kashmir	14.60
3.	Kerala	14.85
4.	Madhya Pradesh	15.58
5.	Mizoram	14.66
6.	Tamil Nadu	14.75
7.	Uttaranchal	15.00
Grand Total		104.54

Project Elephant

Introduction and Objectives

Project Elephant was launched in February, 1992 to assist States having free ranging populations of wild elephants to ensure long term survival of identified viable populations of elephants in their natural habitats. The Project is being implemented in States, viz Andhra Pradesh, Arunachal Pradesh, Assam, Jharkhand, Karnataka, Kerala, Meghalaya, Nagaland, Orissa, Tamilnadu, Uttaranchal, Uttar Pradesh and West Bengal. States are being given financial as well as technical assistance in achieving the objectives of the Project. Help is also provided to other States with small populations of elephants for the purpose of census, training of field staff and mitigation of human- elephant conflict. List of Elephant Reserves with area and elephant population is given in Table-10.

Table-10. Elephant Reserves in India (Revised Network)

Sl. No.	Elephant Range	Elephant Reserve	State	Total Area (Sq. Km)	P.A. (Sq. Km)	Elephant Populn. 2005
I	Eastern India (South West Bengal- Jharkhand-Orissa)	1. Mayurjharna ER(24.10.02)	W. Bengal	414	-	96
		2. Singhbhum ER (26.9.01)	Jharkhand	4530	193	371
		3. Mayurbhanj ER (29.9.01)	Orissa	3214	1309	465
		4. Mahanadi ER (20.7.02)❖	Orissa	1038	964	464
		5. Sambalpur ER (27.3.02)❖	Orissa	427	427	284
		6. Baitarni ER#	Orissa	1755	-	108
		7. South Orissa ER#	Orissa	4216	750	138
	Total			15594	3643	1978
II	North Brahmaputra (Arunachal – Assam)	8. Kameng ER (19.6.02)	Arunachal	1892	748	NA
		9. Sonitpur ER (6.3.03)	Assam	1420	420	612
	Total			3312	1168	612+
III	South Brahmaputra (Assam- Arunachal)	10. Dihing-Patkai ER (17.4.03)	Assam	937	345	295
		11. Deomali (South Arunachal) ER^	Arunachal	900+	900+	129
	Total			1,837+	345	424
IV	Kaziranga (Assam- Nagaland)	12. Kaziranga – Karbi Anglong ER (17.4.03)	Assam	3270	1073	1940
		13. Dhansiri-Lungding ER (19.4.03)	Assam	2740	2740	275
		14. Intanki ER (28.2.05)	Nagaland	202	202	30
	Total			6212	1275	2245
V	Eastern Dooars (Assam- W. Bengal)	15. Chirang-Ripu ER (7.3.03)	Assam	2600	526+	658
		16. Eastern Dooars ER (28.8.02)	W. Bengal	978	484	300-350
	Total			3578	1010	1008
VI	E. Himalayas (Meghalaya)	17. Garo Hills ER (31.10.01)	Meghalaya	3,500	402	1047
		18. Khasi Hills ER^	Meghalaya			383
	Total					1430
VII	Nilgiri –Eastern Ghat (Karnataka- Kerala- Tamil Nadu-Andhra)	19. Mysore ER (25.11.02)	Karnataka,	6724	3103	4452
		20. Wayanad ER (2.4.02)	Kerala	1200	394	636
		21. Nilgiri ER (19.9.03)	Tamil Nadu	4663	716	2862
		22. Rayala ER (9.12.03)	Andhra	766	525	12
	Total			13335	4738	7962
VIII	South Nilgiri (Kerala- Tamil Nadu)	23. Nilambur ER (2.4.02)	Kerala	1419	90	281
		24. Coimbatore ER (19.9.03)	Tamil Nadu	566	482	329
	Total			1985	572	610
IX	Western Ghat (Tamil Nadu- Kerala)	25. Anamalai ER (19.9.03)	Tamil Nadu	1457	300	179
		26. Anamudi ER (2.4.02)	Kerala	3728	780	1547
	Total			5185	1080	1726
X	Periyar (Kerala- Tamil Nadu)	27. Periyar (2.4.02)	Kerala	3742	1058	1100
		28. Srivilliputtur ER(19.9.03)	Tamil Nadu	1249	568	638
	Total			4991	1626	1738
XI	Northern India (Uttaranchal-U.P.)	29. Shivalik ER (28.10.02)	Uttaranchal	5405	1340	1510
		30. Ganga-Jamuna ER#	U.P.	744	-	NA
	Total			6149	1340	1510
	Total			58,900+	16,400+	21200+

Approved by Government of India, but not yet notified by the State Government.

❖ Proposal for extension approved by Govt. of India, but not yet notified by the State Government.

^ Under consideration

Activities Undertaken

The main activities of Project Elephant are as follows:

- ◆ Strengthening of measures for protection of wild elephants from poachers
- ◆ Development of scientific and planned management for conservation of elephants habitats and viable population of wild Asiatic elephants in India
- ◆ Ecological restoration of existing natural habitats and migratory routes of elephants
- ◆ Promotion of measures for mitigation of man-elephant conflict in problem areas and moderating pressures of human and live stock on crucial elephant habitats
- ◆ Eco-development
- ◆ Veterinary care
- ◆ Research on elephant issues relating to elephant conservation

- ◆ Public education and awareness programme
- ◆ Capacity building of field staff, mahouts and veterinarians

Progress / Achievements

- ◆ Financial assistance was provided to the elephant range states including North-Eastern states for the purpose of habitat management, mitigation of man-elephant conflict, payment of ex-gratia relief for loss of life human and crop caused by wild elephants, strengthening of anti-poaching measures, capacity building of the field staff, registration of domesticated elephants using microchips etc.
- ◆ Twenty five Elephant Reserves were notified by various state governments and consent was given for three – Baitarani and South Orissa in Orissa and Ganga – Jamuna in UP.
- ◆ Steering Committee of Project Elephant reconstituted and the first meeting of the Steering Committee was held in July, 2006 under the Chairmanship of Hon'ble Minister



Fig 31. Elephant at Bandipur Elephant Reserve, Mudumalai

of Environment & Forests in which enumeration estimate of the first time enumeration of elephants were done in all ERs with two sampling methods *viz.* Block and line Transact and Dung Count method, was ratified.

- ◆ Four year research project on “Efficacy of Immuno-contraceptives on domesticated Asian Cow elephants’ sanctioned to Assam Agricultural University in collaboration with the State Forest Departments of Assam and West Bengal with the technical support of the International Elephant Foundation.
- ◆ Programme streamlined for the regular and systematic monitoring of wild elephants under the MIKE (Monitoring of Illegal Killing of Elephants) and under CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora). Ten sensitive sites have been identified for this purpose in different parts of the country. Baseline data for MIKE Sites collated and submitted to MIKE & CITES Secretariat.
- ◆ One week training course on MIKE with spatial referencing using GPS was organized at Forest Survey of India (FSI), Dehradun which was attended by representatives from India, Bhutan, Nepal, Sri Lanka and Bangladesh.
- ◆ A one-day workshop was held in Bangalore in November 2006 to deliberate on elephant census methodology which was attended by CWLW of major elephant range states & other experts.
- ◆ Elephant Day was celebrated during the Wildlife Week (October 2006) in all the Elephant Reserves in the country.

Animal Welfare

Introduction

The Animal Welfare Division is entrusted with the implementation of the provisions of the Prevention of Cruelty to Animals Act, 1960 (59 of

1960). Plan Schemes are in operation for implementation of the statutory obligations under this Act. Two statutory organizations *viz.* Animal Welfare Board of India (AWBI) and Committee for the Purpose of Supervision and Control of Experiments on Animals (CPCSEA) have also been set up under this Act. The mandate of the Animal Welfare Division is to prevent the infliction of unnecessary pain or suffering on animals. To accomplish this mission, a three-pronged approach is being adopted:

Regulatory

Some of the important Rules framed under the Prevention of Cruelty to Animals Act 1960 which are regulatory in nature include:

- ◆ Performing Animals (Registration) Rules, 2001 as amended.
- ◆ Transport of Animals Rules, 1978 & 2001.
- ◆ Prevention of Cruelty (Slaughter Houses) Rules, 2001.
- ◆ Prevention of cruelty to Animals (Establishment and Regulation of Society for Prevention of Cruelty to Animals) Rules 2001.
- ◆ Animal Birth Control (Dogs) Rules, 2001.
- ◆ Breeding of and Experiments on Animals (Control and Supervision) Rules, 1998 as amended.

Developmental

Animal Welfare Board of India (AWBI)

- ◆ AWBI is a statutory body under Section 4 of the Prevention of Cruelty to Animals Act 1960, with head quarters at Chennai. Its basic mandate is to advise the Government on animal welfare issues, and create awareness in animal welfare.
- ◆ Under a Plan scheme, the Animal Welfare Board of India gives financial assistance to eligible Animal Welfare Organisations for regular schemes *viz.* maintenance of animal

shelters, medicines, purchase of medical equipment and conducting of veterinary camps etc.

- ◆ The Animal Welfare Division releases funds to the Animal Welfare Board of India for regular schemes of AWBI as well as for four Central Sector Schemes. The following Central Sector schemes are being implemented by the Animal Welfare Board of India:

- ◆ Scheme for Shelter Houses for looking after the animals

The objective of this scheme is to establish and maintain shelter houses for distressed animals in the country. Primarily NGOs and SPCAs are given grants of upto Rs.22.50 lakhs for construction of boundary walls, shelters, water tank, drains, in-house Dispensary, Medical Equipment, contingencies etc.

Of the 33 shelters houses to be provided in the current financial year, 20 have been constructed till January 16, 2007.

- ◆ Scheme for Birth Control and Immunization of Stray Dogs

The scheme is meant for controlling the population of stray dogs by sterilization and reducing incidences of rabies by immunization. NGOs and SPCAs working in collaboration with local bodies are eligible for this grant.

Under this scheme financial assistance is given @ Rs.370/ per dog for pre & postoperative care, including medicines and anti rabies vaccine (ARV); and Rs.75/- per dog for catching and relocation of the dog. The aid is released in two equal installments.

Out of the targeted 83140 animal birth control operations in the current financial year, 65520 operations have been conducted till January 16, 2007.

- ◆ Scheme for Provision of Ambulance Services to Animals in Distress

Under this scheme the animal welfare organizations are given grant for purchase of suitable vehicle for transportation, rescue and also for providing emergency services to animals in distress.

NGOs are assisted to the extent of 90% of project cost of purchase of a suitable vehicle and equipment and fitting thereon. The maximum amount of grant-in-aid is limited to Rs.3.50 lakhs for purchase of vehicle and Rs.1.00 lakhs for equipments and fitting thereon.

Out of the target of 31 ambulances in the current financial year, 25 have been given to AWOs till January 16, 2007.

- ◆ Scheme for Relief to Animals during Natural Calamities and Unforeseen Circumstances

Every year, there are natural calamities in the form of floods, droughts or earthquakes. In such circumstances there is an immediate requirement for provision of fodder, adequate shelter, medical attention etc. for the affected animals or otherwise they are smuggled across the borders for slaughter. Funds for relief of such animals are provided under this scheme.

Other activities

- ◆ The Board had granted recognition to 2265 organisations upto March, 2006 and 103 new animal welfare organizations were registered in the current year so far.
- ◆ The Board is providing free, on the spot veterinary treatment to the animals in Chennai with the help of a Mobile Animal Clinic. For the current financial year, the Mobile Animal Clinic was operated from July, 2006 and has provided free veterinary

treatment/vaccination to 999 animals.

- ◆ The Animal Welfare Board of India in collaboration with the National Institute of Communicable diseases (NICD) and Department of Animal Husbandry together organized a two day integrated “ National Workshop on Control of Rabies in India” on September 21-22, 2006 at the National Institute of Health & Family Welfare, New Delhi. The workshop was inaugurated and chaired by Hon’ble Minister of State for Environment & Forests. Experts of national and international repute from various fields like medicine/public health, veterinary/ animal husbandry, administrators and policymakers from concerned Ministries, local bodies and representatives of Animal Welfare Organizations/SPCAs participated in the two-day Workshop.
- ◆ The Board organized a workshop on June 26, 2006 at Madras Veterinary College, Chennai on “Roadmap to Rabies Free India”. The delegates drawn from Animal Welfare Organizations, municipal authorities; various City corporations, Department of Veterinary Services and experts from Veterinary Universities participated in the workshop.
- ◆ The Board co-sponsored an international conference “Asia for Animals 2007” held at Chennai.

Educational

Seminars and Workshops at National, Zonal & State Levels are also organized on various issues. A National Conference on Rational use of Animal in Research, jointly organized by the Laboratory Animal Scientists Association , the Indian Pharmacological Society and the National Institute of Nutrition at Hyderabad on November 1-2, 2006, was co sponsored by CPCSEA. In collaboration with CPCSEA, the Sree Chitra Tirunal Institute for Medical Sciences and Technology, Thiruvananthapuram organised a two days symposium on “Care and Management of Experimental Animals on February 15-16, 2007

wherein CPCSEA nominees also participated.

During the year, AWBI resumed publication of the quarterly journals ‘Animal Citizen’ (English) and Jeev Sarthi (Hindi), which had earlier been kept in abeyance. The Board is also publishing the AWBI monthly Newsletter in which important news, events, articles and activities of Animal Welfare Organizations etc. are being published.

The following two Central Sector schemes are directly implemented by Animal Welfare Division:

National Institute of Animal Welfare (NIAW)

- ◆ The Animal Welfare Division has established the National Institute of Animal Welfare (NIAW) at Ballabgarh, Faridabad, Haryana as a subordinate office. The objective of the Institute is to impart training and education in Animal Welfare on diversified basis comprising, among other things, animal management, their behaviour and ethics. The aim is to create an enabling environment for fulfillment of the statutory requirements as laid down in the Prevention of Cruelty to Animals Act, 1960.
- ◆ Before starting in a full fledged manner, the need was felt to finalize a number of issues including assessment of market demand, decision regarding option of degree or diploma and recognition thereof, evolving course contents and finalization of curriculum. Accordingly the work of designing and running in – service and other short term courses training was assigned to EdCIL, a public sector enterprise under the Ministry of Human Resource Development, on turnkey basis and courses have commenced from January 2, 2006. Twenty six training programmes have been completed till December, 2006.
- ◆ NIAW has been conceptualized as an apex body in the field of animal welfare and its broad mandate covers the need to improve animal welfare through education, research and public outreach. The process of

appointment of faculty is underway. The Institute is expected to evolve as a premier body with international stature, with participation of faculty / trainees from other countries.

- ◆ A Steering Committee has been set up under the Chairmanship of Secretary (E&F) to review the modalities of operation of NIAW and to facilitate constant review of the functioning of the Institute. Apart from officials of the Ministry, the Steering Committee comprises of DG (CSIR) or his representative, Member Secretary (CZA), Animal Husbandry Commissioner, Ministry of Agriculture and representatives of the Ministries of Information and Broadcasting and Urban Development.
- ◆ Important stake holders in the training programmes have been identified, including municipal officials, animal welfare organizations, animal readers, transporters, faculty of veterinary colleges, animal traders, animal trainers, employees of slaughter houses and SPCA inspectors and specialized courses are being designed in consultation with AWBI.

Committee for Purpose of Control & Supervision of Experiments on Animals (CPCSEA)

- ◆ This is also a statutory body under Section 15 of Prevention of Cruelty to Animals Act, 1960 with head quarters at Chennai. The mandate of this Committee is to ensure that while conducting various types of experiments, in connection with medical research or education, animals are not subjected to avoidable pain or suffering. The main function of this Committee is to register institutions carrying out animal experimentation and / or breeding; to consider approval of animal house facilities and to regulate use of animals in experimentation.
- ◆ So far, 1032 establishments have been registered with this Committee. More than 104 clearances with regard to animal experimentation have been given. During this financial year, 21 inspections were conducted and animal house facilities of 12 institutions have been approved.