

CONSERVATION

Bio-diversity Conservation

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

India ratified the International Convention of Biological Diversity (CBD) on 18th February, 1994 and became party to the Convention in May'94. The CBD is an international legal instrument for the conservation and sustainable use of Biological Diversity taking into account "the need to share cost and benefit between developed and developing countries and the ways and means to support innovation by local people". Till date, seven ordinary meetings of the Conference of Parties (COP) have been held. The 7th meeting was held in Kuala Lumpur, Malaysia from 9th – 27th February, 2004, where in one important decision taken by the parties was related to 'Access and Benefit sharing' as related to genetic resources. It was resolved to evolve an International regime on access to genetic resources and benefit sharing with the aim of adopting an instrument/instruments to effectively implement the provisions of CBD.

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. Important steps taken during the year are as follows :-

National Bio-diversity Strategy and Action Plan (NBSAP)

A comprehensive project has been launched for preparation of planning documents relating ecological security and livelihood of people depending on natural resources. The ultimate aim is to develop a National Action Plan for conservation of biodiversity and its sustainable use. A consultative and participatory approach was adopted by all the executing agencies. A draft National Action Plan (NAP) has been prepared based on 71 draft biodiversity strategy and action plans (BSAPs) at local (sub-state), state, ecoregional, and thematic levels, 31 draft sub-thematic reviews, large number of secondary sources and so on. The draft is under consideration of the Ministry.

Biological Diversity Act, 2002

A National Biodiversity Authority has been set up at Chennai vide Gazette Notification dated 1st October, 2003 under the Act. The Act also provides for establishment of State level Boards and Local level Bio-diversity Management Committees 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. The states of Karnataka, Madhya Pradesh, West Bengal and Goa have already established State Biodiversity Boards. Detailed rules under the Act have been notified for implementation of the various Provisions of the Act. The National Biodiversity Authority is in process of developing norms for Access and Benefit Sharing as related to genetic Resources and Associated knowledge.



Fig 21. *Erinocarpus nimmonii* Grah. - an endemic species to Western Ghats



Fig 22. *Anaphalis travancorica* - endemic to South-Western Ghats

Expert meeting of the Group of Like Minded Megadiverse Countries (LMMC)

Seventeen countries i.e. Bolivia, Brazil, China, Colombia, Costa Rica, Democratic Republic of Congo, Ecuador, India, Indonesia, Kenya, Madagascar, Malaysia, Mexico, Peru, Philippines, South Africa, and Venezuela rich in biological diversity and associated traditional knowledge have formed the Group of Like Minded Megadiverse Countries (LMMC). The LMMC Group holds nearly 70% of global biodiversity and is a duly recognized negotiating block in the UN and other international fora. India has taken over Presidency of the LMMC on 19th February, 2004 during

the Ministerial meeting of the group in Kuala Lumpur in the margins of COP-7 meeting of Convention on Biological Diversity.

India in its capacity as the Chair of the LMMC had organized an Expert and Ministerial level Meeting of the LMMCs in New Delhi from 17-21 January, 2005, under the patronage of the Hon'able Minister of Environment & Forests as President of LMMC.

This meeting has adopted the New Delhi Ministerial Declaration of Like Minded Megadiverse Countries on Access and Benefit Sharing, which is being seen as the beginning of a new era in the negotiations on International Regime on Access and Benefit Sharing as a Legally Binding Instrument (LBI).

The Cartagena Protocol on Biosafety

The Cartagena Protocol on Biosafety, the first international regulatory framework for safe transfer, handing and use of Living Modified Organisms (LMOs) was negotiated under the aegis of the Convention on the Convention on Biological Diversity.

The protocol seeks to protect biological diversity from the potential risks posed by living modified organisms resulting from modern biotechnology. It establishes an advance informed agreement (AIA) procedure for ensuring that countries are provided with the information necessary to make informed before agreeing to the import of such organisms into their territory. It further incorporates procedure for import of LMOs with respect to Food Feed and Product (FFP), Risk Assessment and Risk Management Framework and Capacity Building.

The Protocol contains reference to a precautionary approach. The Protocol also establishes a Biosafety Clearing House to facilitate the exchange of information on living modified organisms and to assist countries in the implementation of the Protocol.

The Protocol, adopted on 29th January, 2000, has been signed by 103 countries (except USA). India signed the Biosafety protocol on 23rd January, 2001 and acceded to the Protocol on 17th January, 2003. The protocol has come into force on 11th September, 2003. So far 84 countries have ratified the protocol.

Following the entry into force of the protocol, the first meeting of the Conference of parties serving as the Meeting of the parties to the Protocol



Fig 23. Biodiversity conservation education among school children and teachers

(COP-MOP) was held at Kuala Lumpur, Malaysia from 23rd -27th February, 2004. The meeting adopted imported decisions on substantive issues related to AIA procedure, handling, transport, packing and identification of LMOs, compliance, liability and redress. Various follow up on the decisions taken have been initiated through consultation with the Core Expert Group on Biodiversity constituted by the Ministry for advising on matter related to the Convention on Biological Diversity. The preparatory work for the second meeting of the COP-MOP -2 scheduled in May-June 2005 in Montreal has been initiated.

Capacity Building Projects

The Ministry has accessed funds from Global Environment Facility (GEF) through the World Bank for implementation of the Capacity Building Project on Biosafety. The main objective of the Capacity Building project is to enhance effective co-ordination between responsible agencies to assess and manage risks associated with the trans-boundary movement of LMOs in the context of Cartagena Protocol and coordination of the implementation of the Biosafety Clearing House (BCH).

Specifically, the project will develop national capacities in biosafety required to (i) strengthen the legislative framework and operation mechanism for biosafety management in India; (ii) enhance capacity for risk assessment and monitoring; (iii) establish the biosafety database system and Biosafety Clearinghouse mechanism; (iv) support center of excellence and a network for research, risk assessment, and monitoring; and (v) establish the Project Coordinate and Monitoring Unit (PCMU). The development of national capacities in these areas will enhance the national capabilities strengthened under the project.

The Genetic Engineering Approval Committee (Biosafety Regulatory Framework in India)

The Ministry has constituted a Task Force on Recombinant Pharma Sector under the chairmanship of R.A. Mashelkar, DG, CSIR for streamlining the procedures for recombinant Pharma industry. The final report is expected to be submitted by 31st April, 2005.

The Meetings of the Genetic Engineering Approval Committee (GEAC) are being held every second Wednesday of the month as per the guidelines on best practices for environmental regulations adopted by the Ministry. During the year, the GEAC has approved large-scale trials of a number of Bt cotton varieties containing Cry 1 Ac gene MON 531 developed by various companies. The GEAC has also approved Bollgard II containing two genes (Cry 1Ac and Cry 1 Ab) for large-scale trials in addition to recombinant pharma products.



Fig 25. *Garnotia* sp. in grassy swartz of Nagapothigai in Agasthiyamalai hills



Fig 24. *Zenkeria sebastinei* - a critically endangered grass in Agasthiyamalai peak

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

On account of diverse ecosystem present in one of the mega biodiversity nations like India, a rich bio-diversity must 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, large number of animal and plants are yet to be explored, identified and described.



Fig 26. *Drosera burmannii* Vahl. - a common insectivorous plant in India

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 82 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. These include bioprospecting, conservation biology, ecosystem management and bio-remediation. The other priority issues to be probed are inventorying and monitoring of plant diversity, particularly in areas which are unexplored, assessment of conservation status of species and roles of species in communities and ecosystem.

Assistance to Botanical Gardens

The scheme on assistance to Botanical Gardens and centers for *ex-situ* conservation has been taken up to augment *ex-situ* conservation of rare endemic plants. One time financial assistance is provided to the existing botanical gardens for improvement of their infrastructural facilities to facilitate *ex-situ* conservation of rare endemic plants. The achievements made in these botanical gardens are periodically monitored with the help of Botanical Survey of India and regional offices of the ministry.

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, 20 Botanical Garden have been recommended for funding.

Medicinal Plants

Medicinal Plants have been identified as one of the thrust areas by the Ministry. The existing programmes encompassing activities in the area of medicinal plants are continued to achieve the goal of conservation of medicinal plants found in the forest and protects areas.

An UNDP-CCF-II project has been approved for implementation in this regard in nine States viz. Kerala, Tamil Nadu, Karnataka, Andhra Pradesh, Orrisa, West Bengal, Rajasthan, Maharashtra and Madhya Pradesh. The objectives of the project are :



Fig 27. *Mucuna pruriens* - medicinal plants used for treatment of Parkinson disease

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

Biosphere Reserves

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 Reserve designated by UNESCO for inclusion in the World Network of Biosphere Reserves. 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



Fig 28. A pair of Blackbuck in herbivore park at Bannerghatta

to provide models of sustainable development in the service of human kind. These reserves are rich in biological and cultural diversity and encompass unique features of exceptionally pristine nature. A scheme has been launched by the Ministry 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.

Financial assistance to the respective State Governments for conservation and management of fourteen Reserves designated so far has been provided by the Ministry. In addition, research and development projects were also supported in these Reserves. On the basis of the proposal submitted by this Ministry to UNESCO, the Nanda Devi Biosphere Reserve from Uttaranchal was included in the World Network of Biosphere Reserves in October, 2004, by UNESCO. Three Biosphere Reserves namely, Sunderbans (West Bengal), Gulf of Mannar (Tamil Nadu), and Nilgiri (Tamil Nadu, Kerala and Karnataka) were earlier included in the World Network of Biosphere Reserves. Efforts are on for getting remaining Biosphere Reserves included in the World Network of Biosphere Reserves.

A number of research projects have been completed during the year which provided baseline data helpful in the scientific management of these reserves. A number of new research projects were also initiated during the year. A list of Biosphere Reserves set up so far along with their area and location is given in Table-2.

Mangroves

Mangroves are successfully adapted in colonizing saline intertidal zone at the interface between the land and sea along the deltas, shallow lagoons, mud flats bays and backwaters in tropical and subtropical sheltered coast lines. Mangroves not only protect the coastal communities from the fury of cyclones and coastal storms, but also promote sustainable fisheries and prevent sea erosion. In addition, they provide medicine and fuelwood. They also serve as the home of a wide range of flora and fauna including crocodiles and tigers.

In spite of all such gifts they confer, many mangrove ecosystems have been unsustainably exploited, leading to their degradation. Of late, the fragile mangrove ecosystems have been subjected to various anthropogenic and biotic pressures resulting in habitat destruction, loss of biodiversity, affecting avifauna

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 (2236.74)	18.1.88	Part of Chamoli, Pithoragarh & Almora Districts (Uttar Pradesh)
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 & Brahmaputra 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 (1701)	12.11.2001	Agasthyamalai hills in Kerala
14.	Achanakmar-Amarkantak (3835.51)	11.03.2005	Parts of Anupur and Dindori distt. of MP and parts of Bilaspur distt. of Chattisgarh

Site with * have been recognized by UNESCO on World Network of Biosphere Reserves

and their migration paths. Effective measures are therefore needed to save the mangrove ecosystems.

The Ministry launched Mangrove Conservation Programme in 1987 and, has so far, identified 35 mangrove areas for intensive conservation and management in the country. State-wise list of identified mangroves is given in the Table-3. These mangrove areas are identified on the recommendation of National Committee on Mangroves & Coral Reefs on the basis of their unique ecosystems, biodiversity etc. Hundred percent central assistance is given under Management Action Plans (MAPs) for undertaking activities like raising mangrove plantation, protection, catchment area treatment, siltation control, pollution abatement, biodiversity conservation, sustainable resource utilization, survey and demarcation, education and awareness etc. This is further supplemented by research



Fig 29. A view of monogenic stand of *Ancennia marina* at Muthupet mangrove forest

State / UT	Mangrove Area
West Bengal	1. Sunderbans
Orissa	2. Bhitarkanika, 3. Mahanadi, 4. Subernarekha, 5. Devi, 6. Dhamra, 7. MGRC, 8. Chilka
Andhra Pradesh	9. Coringa, 10. East Godavari, 11. Krishna
Tamil Nadu	12. Pichavram, 13. Muthupet, 14. Ramnad, 15. Pulicat, 16. Kazhuveli
Andaman & Nicobar	17. North Andamans, 18. Nicobar
Kerala	19. Vembanad
Karnataka	20. Coondapur, 21. Dakshin Kannada / Honnavar
Goa	22. Karwar
Maharashtra	24. Achra-Ratnagiri, 25. Devgarh-Vijay Dur, 26. Veldur, 27. Kundalika-Ravdana, 28. Mumbra-Diva, 29. Vikroli, 30. Shreevardhan, 31. Vaitarna, 32. Vasasi-Manori, 33. Malvan
Gujarat	34. Gulf of Kutchh 35. Gulf of Khambat

and developmental activities which can give scientific inputs for smooth execution of Management Action Plans. Efforts have been made to persuade the State Government(s) to identify new and additional mangrove conservation areas.

India is home to some of the best mangroves in the world. The Ministry has established a National Mangrove Genetic Resources Centre in Orissa. Two mangrove species viz. *thizophora annamalayana*, occurring in Pichavaram, Tamil Nadu, and *Heritiera kanikensis* that exists only in Bhitarkanika of Orissa are endemic to India. Sunderbans (West Bengal) represent the largest stretch of mangroves in the country. During the year, 13 research proposals have been recommended for financial support by the Ministry.

Coral Reefs

The National Committee on Mangroves and Coral Reefs had earlier

recommended intensive Conservation and Management of Corals in four areas, namely, Andaman & Nicobar Islands, Lakshadweep Island, Gulf of Kachchh and Gulf of Mannar. Management Action Plans are being implemented in all the four areas through financial assistance extended by the Ministry to the respective States/UTs.

The National Coral Reef Research Centre at Port Blair was provided financial assistance for strengthening infrastructure of the Centre and to continue its activities of bio-physical monitoring related to health of coral reefs. A National Workshop was organized at Port Blair on 5-7 May, 2004.



Fig 30. Bleaching of *Acropora* sp. at Gulf of Mannar Biosphere Reserves

Botanical Garden of Indian Republic (BGIR), NOIDA

The BGIR has been identified as a “Green Channel” Project under the National “Jai Vigyan” Science and Technology Mission of the Ministry of Science and Technology and with full support from the Planning Commission and other relevant ministries and departments. It aspires to attain an international stature and serve as a nodal centre for networking of Botanic Gardens in South East Region.

The site for BGIR is at sector 38 A, NOIDA, and was selected after careful evaluation of the land in terms of suitability of land/soil and availability of water, etc., for setting up of a botanic garden of international standards. The BGIR would have special features like woodlands, arboreta, water bodies, display sections, experimental plots / nurseries, herbarium laboratory complex, conservatories, parking complex etc. The botanic garden is mandated for conservation of rare and threatened plants of the country and would serve as a national centre of excellence for conservation, research and environmental education providing a window for interface between science and society. The BGIR also aspires to develop into one

of the most uniquely landscaped botanic gardens of modern times.

To ensure that the selected Landscape design as conceived and developed with botanical, ecological, hydrological and landscape considerations being fully met, a Multi Disciplinary Expert Committee has been set up which had its first meeting on 23rd Feb. 05.

A Site Office has been set up with basic infrastructure and the basic scientific and technical work required to facilitate project implementation.



Fig 31. Dry deciduous forests in post-monsoon in Sri Venkateswara National Park

Further, to boost the development of underdeveloped areas, one time clearance has also been granted under Forest (Conservation) Act, 1980 for public utility development projects to be executed by Government Departments 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 centre, power sub-stations, communication posts and police establishments like police stations / outposts / border outposts / watch towers, in sensitive areas.

Forest Conservation

The Forest (Conservation) Act, 1980, which deals with the forestry clearances for dereservation /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. is implemented by Forest Conservation Division of the Ministry. This Act is regulatory in nature and not prohibitory.

During the year the Ministry has accorded forestry clearances to 791 development projects involving 34,135 hectare forest land.



UPDATES 2004-05



- A New Delhi Ministerial Declaration of Like Minded Megadiverse Countries (LMMC) on Access and Benefit Sharing has been adopted during the expert and ministerial level meeting of LMMC held on 17-21st January 2005 in New Delhi.

- The Genetic Engineering Approval Committee (GEAC) has approved large scale trials of a number of Bt. Cotton varieties containing cry I Ac gene MON 531 developed by various countries and Bollgard II containing 2 genes (cry I Ac and cry I Ab).

- Twenty botanical gardens have been recommended for financial assistance by the Ministry under the relevant scheme.

- As per the recommendation of the Ministry, the Nanda Devi Biosphere Reserve in Uttaranchal has been included in the World network of Biosphere Reserves in October 2004 in UNESCO.
- Two mangrove species, one occurring in Pichavaram, Tamil Nadu, one the other in Bhitarkanika Orissa are endemic in India.
- A Multi-Disciplinary Expert Committee has been set up to develop to look into diverse aspects for the development the Botanical Garden of India Republic (BGIR) NOIDA, is as a one of the most uniquely land-scaped botanic garden of modern times.

Central Government is committed to protect the rights of tribals and forest dwellers, other than in-eligible encroachers, on forest lands. Therefore, directions have been issued to the State / UT Governments not to evict the tribals and forest dwellers, other than in-eligible encroachers, from forest lands till the process of verification of their rights is complete.

To boost the tribal economy, new guidelines for “Tusser cultivation” in forest areas have been formulated under Forest (Conservation) Act, 1980, which opened up more than 20 tree species for silk cultivation in forest areas. To promote investment in power sector “Wind Energy Policy” under Forest (Conservation) Act, 1980 has been put into place.

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 clearance. Dates of meetings to be held every month in the Ministry and its Regional Offices have been fixed. Rules, Guidelines, status of proposals and approvals are displayed on the Website.

Regional offices

The Ministry has six Regional Offices located at Bangalore, Bhopal, Bhubaneswar, Lucknow, Shillong and Chandigarh with its headquarter in the Ministry at New Delhi.

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 Conservators of Forests are empowered to decide cases for diversion of forest land for non-forestry purposes upto the extent of 40 ha. except for mining and regularization of encroachment.



Fig 33. Zarwas-tribals of South and middle Andaman

Region-wise target and achievement of monitoring of approved projects under the Forest (Conservation) Act, 1980 and EPA 1986 for the year are given in Table-4.

Regional Office	Monitoring of Projects Forest (conservation) Act, 1980 (No. of Cases)		EPA (No. of Cases)		Site Inspection	No. of Cases approved Under F(C)	Financial (Lakh)		
	Target	Achievement	Target	Achievement			Act	Target	Achievement
Bangalore	190	161	150	93	19	34	83.72	48.26	
Bhopal	60	34	100	140	10	177	66.35	51.35	
Bhubaneswar	200	136	85	69	24	18	66.30	44.33	
Lucknow	150	82	50	86	12	163	67.75	56.94	
Shillong	130	133	75	16	10	32	59.70	42.55	
Chandigarh	95	40	70	82	75	367	46.30	31.62	
RO (HQ)	Administrative works only							82.88	26.98
Total	825	586	530	486	150	791	473.00	302.03	

Forest Policy

The Forest Policy in the Ministry provides policy support in respect of forestry matters, and reviews the forest policy and its relations to policies of other relevant sectors. Various legal issues viz., the State/Central Bills related with the forestry matters that require the assent of the President of India are examined by the divisions.

Overriding effect of Forest (Conservation) Act, 1980

The Forest (Conservation) Act, 1980 is regulatory Act and is a special Act having overriding effect over all other Acts in the cases related to diversion of Forest land for non-forestry purposes. This has been endorsed by the Ministry of Law and Justice, Government of India.

Indian Forest (Punjab Amendment) Act, 2004

The comments/concurrence of the Ministry of Environment and Forests was given, on the Indian Forest (Punjab Amendment) Act, 2004.

Guidelines for Felling and Transit Regulations for Tree Species Grown on Non-Forest Private Lands

The National Forest Policy, 1988 lays down that one third of the geographical area of the country should be under forest/tree cover. The Tenth Five Year Plan mandate is to increase the forest and tree cover in the country to 33% of the geographical area by 2012. This target requires additional 9.97% of the geographical area of the country, i.e. 33.60 million hectare to be brought under forest and tree cover. Since almost 85% of the potential lands for additional tree planting would fall outside the notified forestlands, the involvement of non-government sector, including private individuals, is most crucial for achieving the objective. A balance is also needed between regulation and promotion of forestry in private sector. In view of the necessity and importance of achieving the targets, the matter has been considered by the Central Government and accordingly the guidelines for the simplification of felling and transit regulations of trees grown on Non-Forest private lands have been framed. The State/UT governments have been requested to consider the guidelines for augmenting the pace of the tree plantation on private lands.

State/UT MFP (Ownership of Forest Dependent Community) Act, 2004

Minor Forest Produce (MFP) is a subject with Panchayats. The Panchayats (Extension of Scheduled Areas) Act endows ownership of MFP with Gram Sabha in scheduled areas. Provision for benefit sharing mechanism with Forest dwelling communities through JFMCs exists and the States of MP, Chhatisgarh, Gujarat, Jharkhand and Maharashtra already have legislation to share benefits of MFP with Panchayats or through Co-operative societies.

There are conflicts between JFMCs and Panchayats with regards to sharing of benefits and ownership of MFP. The Common Minimum Programme of the Union Government also envisages that the State

Governments will be urged to make legislation for conferring ownership rights in respect of Minor Forest Produce on all those people from the weaker sections who work in forests.

Accordingly the Ministry has prepared model State/UT minor forest produce (Ownership of Forest Dependent Community) Act, 2004 and the States/UTs have been requested to enact similar law conforming to their local conditions.



Fig 34. Tribal women selling minor forest produce

National Forest Commission

In the meeting on 21st January, 2002, chaired by Hon'ble Prime Minister of India, the Indian Board of Wild Life recommended that a Forest Commission should be set up to look into restructuring, reform and strengthening the entire set up and affiliated institution in the country. Accordingly a National Forest Commission has been set up vide resolution dated 7th February, 03 to look into re-structuring, reform and strengthening the entire forest set up and affiliated institutions in the country under the chairmanship of Hon'ble Justice Mr. B. N. Kirpal, Former Chief Justice of India with following Terms of Reference :

- ❑ Review and assess the existing policy and legal framework and their impact in a holistic manner from the ecological, economic, social and cultural viewpoint.
- ❑ Examine the current status of forest administration and the forestry institutions both at all India and State level to meet the emerging needs of the civil society.
- ❑ Make recommendations indicating specific policy options for achieving sustainable forest and wildlife management and ecological security.
- ❑ Suggest ways and means to make forest administration more effective with a view to help to achieve the above policy options.
- ❑ Establish meaningful partnership and interface between forestry management and local communities including tribal.
- ❑ The National Forest Commission is expected to submit the report to the Government shortly.

Integrated Forest Protection Scheme

Integrated Forest Protection Scheme has been formulated with the following components.

- ❑ Infrastructure Development.
 - Working plan preparation/Survey and Demarcation.
 - Strengthening of Infrastructure for Forest Protection
- ❑ Forest Fire Control and Management

The scheme cover all the States and UT's for the Tenth Five Year Plan period.

The Central Sector Component of the Scheme is to be implemented by 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, 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.

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 JFMC's etc.



UPDATES 2004-2005

- The Ministry has accorded forestry clearances to 791 development projects involving 34,135 hectare forest land.
- General clearance under Forest (Conservation) Act, 1980 has been granted for execution of public utility developmental works vide Ministry's circular dated 03.01.2005.
- Guidelines for the simplification of felling and transit regulations of trees, grown on non-forest private lands have been framed to provide the plantation on non-forest lands

with a view to contributing towards forest/tree cover target of the country.

Wild Life Conservation

Various activities relating to wild life conservation and implementation of the Wild Life (Protection) Act, 1972 were carried out by the Ministry during the year. The details are as follows:

Enforcement of Wildlife (Protection) Act, 1972 and Export-Import Policy

The Wildlife (Protection) Act, 1972, the provisions of the Convention on International Trade in Endangered Species (CITES) and Export and Import Policy of India were continued to be enforced through the offices of the Regional Deputy Directors of Wildlife Preservation located at Delhi, Mumbai, Calcutta and Chennai with the help of State Wildlife Department, the State Police Departments, the Customs Departments, Border Security Force (BSF) and Coast-Guards. The Regional Deputy Directors detected several cases of poaching and illegal trade in wildlife products during the year.



Fig 35. Lions with calf in its natural habitat

India participated in 13th Conference of Parties meetings of CITES held at Bangkok from 2nd – 14th October, 2004.

During the year ban, on export of 29 species of plant portions and their derivatives obtained from wild were continued. Export of six species of exotic birds continued subject to pre shipment inspection and CITES permit wherever required.

A meeting of the working group on Environmental & Natural Resources of the Indo-Russian Inter Governmental Commission was held in New Delhi on 17th November, 2004

The proposal signed between Indian and Russian Federation include co-operation in rehabilitation of Siberian Crane population in India and research in related fields.

Wildlife (Protection) Act, 1972

The various amendments made to the Wildlife (Protection) Act, 1972 came into force from 1st April 2003.

National Board for Wildlife (NBWL)



Fig 36. A view of Mukuithi National Park

The National Board for Wild Life (NBWL) was constituted under the Chairmanship of Hon'ble Prime Minister. The first meeting of the NBWL was held on 15th October, 2003 under the Chairmanship of Hon'ble Prime Minister. As per the resolution adopted during the first meeting of NBWL, a Standing Committee of NBWL under the Chairmanship of Hon'ble Minister of Environment & Forest has been constituted which held its regular meeting to consider various issues related to developed and management of protected areas and wildlife.

Development of National Parks and Sanctuaries

There are 92 National parks and 500 Wildlife Sanctuaries in the country covering an area of 15.67 million hectares. During the year, financial assistance for Development of National Parks and Sanctuaries have been provided to 278 National Parks and Sanctuaries in 26 states including north-eastern states.

Animal Welfare

Activities relating to Animal Welfare is looked after by the Animal Welfare Divisions in the Ministry. The mandate is to prevent the infliction of unnecessary pain or suffering on animals.

The Division provides assistance for construction of Shelter House, Dispensaries etc. for stray, infirm & abandoned animals. It also gives grants for ambulances and vehicles in connection with treatment and transportation of sick, injured and rescued animals. Another major development programme is immunization and sterilization of stray dogs.

The following Animal Welfare Schemes of the Ministry of Environment & Forest have now transferred to the Animal Welfare Board of India , Chennai for implementation-

- ❑ Scheme for Shelter House for looking after the Animals.
- ❑ Scheme for Animal Birth Control and Immunization of Stray Dogs.
- ❑ Scheme for Provision of Ambulance Services to Animal in Distress.
- ❑ Scheme for Relief to Animal during Natural Calamities and Unforeseen Circumstances.

Under the above mentioned scheme, the Board has disbursed an amount of Rs.2.17 crores to 55 organizations (upto Jan., 2005) both under shelter houses and Animal Birth Control programmes.

Schemes implemented by the Division are : -

National Institute of Animal Welfare (NIAW)

A National Institute of Animal Welfare (NIAW) at Ballabgarh, Faridabad (Haryana), has been established to impart training and education in animal welfare and veterinary science. The institute aims at creating an enabling environment for fulfillment of the statutory under the Prevention of Cruelty to Animal Act, 1960. In this context, the Ministry, is exploring the possibility of awarding a turnkey assignment of conducting in-service and short term training courses to an organization having adequate experience in this field. It is envisaged to schedule 12 training programmes of one week duration six training programmes of duration and four training programmes of four weeks duration, with batch size of 40 each.

Animal Welfare Board of India (AWBI)

This is a statutory body under Section 4 of the Prevention of Cruelty to Animal Act, 1960 with head quarters at Chennai. The Board is statutory body consisting of 28 members including six Member of Parliament (four from Lok Sabha and two from Rajya Sabha), Government official and the Animal Husbandry Commissioners and representatives of Society for Protection of Cruelty to Animal (SPCAS)/ Animal Welfare organization (AWOS)

The basic mandate of the Board is the implementation of the Prevention of Cruelty to Animal (PCA) Act, 1960 and Rules made there under as also to advise the Central Government for making amendments, to establish more SPCAs, animal welfare organizations, Goshalas and Pijiarapoles.

Animal Welfare Board of India (AWBI) gives financial assistance to eligible Animal Welfare Organizations (AWOs) for Shelter Houses, Model Goshalas for setting up Bio-Gas Plants, Famine/Drought Relief Earthquake Relief etc. in various states.

The number of Animal Welfare Organizations (AWOs) registered with AWBI went up to 2152 from 1800 during the year. The Board has granted recognition to 189 new animal welfare organizations in the year 2004-2005 so far. The Board has disbursed an amount of Rs 3.62 crores (approx) to 738 AWOs.

State Animal Welfare Boards (SAWBs) have been constituted in 24 States/Uts so far.

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

This is a statutory set up body under Section 15 of Prevention of Cruelty to Animal Act, 1960 with head quarters at Chennai. The mandate of this Committee is to regulate breeding of and experiments on animals to ensure their well being. Every establishment carrying out breeding or animals experiment is legally bound to get itself registered with the Committee. So far 825 Units have been registered with this Committee.

Project Tiger



Fig 37. *Panthera tigris* - our National Animal

Based on the recommendations of a Special Task Force of the Indian Board for Wildlife to ensure maintenance of a viable population of tiger in India for scientific, aesthetic, cultural and ecological values, Project Tiger was launched in 1973 with a mandate to conserve tigers in a holistic manner. These are fulfilled by facilitating focused, concerted management of ecotypical reserves in various states, constituted on a 'core-buffer' strategy through funding the technical support, including site-specific inputs to elicit local community support for conservation.

Initially, the project was launched in nine tiger reserves, covering an area of 16,339 sq. km. which has now increased to 28 tiger reserves, encompassing 37761 sq. km. of tiger habitat distributed in 17 States.

Though the focus of the Project is on the flagship species 'tiger', it strives to maintain the stability of ecosystem by fostering other trophic level in the food chain which is essential to ensure an ecologically viable population of tiger.

The project has put the tiger on an assured course of recovery from the brink of extinction, apart from resurrecting the floral and faunal genetic diversity in some of our unique and endangered wilderness ecosystem. The population of tigers in the country has increased significantly to more than 3600 from less than 2000 at the time of launching of the project. Effective protection and concerted conservation measures inside the Tiger Reserves have brought about considerable intangible achievements also, viz. arresting erosion, enrichment of water regime and overall habitat resurrection. Labour oriented activities in Tiger Reserves have helped in poverty alleviation of the most backward sections and their dependence on forests has also reduced. The project has been instrumental in mustering local support for conservation programme in general.

A healthy tiger population indicates that the other ecological components in its habitat are equally robust, since tigers require large amount of prey and good habitat. Therefore by conserving the national animal, "the tiger", it is possible to conserve the entire complement of valuable forests and its wild denizens. Through the Project, India has successfully conserved almost 60% of the global population of wild tigers in their natural habitat.

Major achievements are :

- ❑ Four new tiger reserves were added, viz Pakui – Nameri (Arunachal /Assam 1206 Km²), Bori – Satpura (MP : 1486 km²), Bhadra (Karnataka : 492 km²) and Pench (Maharashtra : 257 km²). Further, eight, potential areas in the country have also been identified for subsequent inclusion under "Project Tiger".
- ❑ "Project Allowance" has been provided under the scheme to field staff working in tiger reserves.

- ❑ The tiger population in the country has registered an increase from 1827 in 1972 to 3642 in 2001-2002.
- ❑ Complementary inputs for eco-development and voluntary village relocation provided earlier in separate projects, have now been merged with Project Tiger as an “Umbrella Scheme”.
- ❑ Under the ongoing, externally aided “India Eco-development Project, as many as 572 eco-development committees have been formed in seven Protected Areas covering 75,600 families, to reduce the dependency of local people on Protected Area resources, with reciprocal commitments.
- ❑ 100% Central Assistance is provided for deploying anti-poaching strike squads in Tiger Reserves, apart from expenditure relating to research, veterinary, monitoring and evaluation, compensation to the legal heir of staff/ person killed while performing duty and for monitoring of tiger population.
- ❑ Initiatives have been taken for evolving a trans-boundary cooperation protocol with Bangladesh.
- ❑ Information and communication technology is being used for linking important tiger reserves in the GIS Domain for evolving a management support system and crime detection, dissemination of information through web and evolving a ‘National Tiger Monitoring and Habitat Evaluation System’ with regional protocols.

Major Initiatives taken are as follows

- ❑ A panel of expert has been constituted as per the normative standards of the Ministry for Regional Monitoring of Project Tiger in various states.
- ❑ A Task Force on Resource Augmentation Areas for Conservation of Wildlife outside Protected Areas was created in the Project Tiger to enhance productivity availability of biological resources and to ensure protection to ecologically vulnerable species and their young ones.
- ❑ Guidelines for the management of Buffer zone/multiple use areas of Tiger Reserves were issued to provide habitat supplement to the spill over population of wild animals from core area and providing sites specific, need based, participatory eco-development inputs to local stakeholders for reducing their resource dependency on core zone and for eliciting their supports toward conservation initiative in the area.
- ❑ Eight more potential sites have been identified for Project Tiger coverage.
- ❑ Guidelines on ecotourism regulation have been circulated to all Tiger Reserves.

India Eco-development Project – A World Bank Assisted Project

- ❑ To improve the capacity of Protected Area Management to conserve bio-diversity and gain support of the local people for conservation by increasing opportunities for local participation in Protected Area Management improved PA management system has been evolved.
- ❑ In order to reduce negative impact of the local people on bio- diversity village eco development programme has been undertaken.
- ❑ Education and awareness activities and monitoring and research activities for conservation on identified Tiger Reserves and national parks have been promoted.



Fig 38. Tableau on Project Tiger during the Republic Day Parade, 2005

Project Elephant

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 population of elephants in their natural habitat. The Project is being implemented in 13 States, viz Andhra Pradesh, Arunachal Pradesh, Assam, Jharkhand, Karnataka, Kerala, Meghalaya, Nagaland, Orissa, Tamilnadu, Uttaranchal, Uttar Pradesh and West Bengal. States are provided 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.



Fig 39. Elephant herd at Corbett Tiger Reserve

Main activities of the Project are as follows:

- ❑ Strengthening of measures for protection of wild elephants from poachers.
- ❑ Development of scientific and planned management for conservation of elephant habitats and viable population of wild elephants in India.
- ❑ Ecological restoration of existing natural habitats and migratory routes of elephants.
- ❑ Promotion of measures for mitigation of human – elephant conflict in problem areas and moderating pressures of human and live stock on crucial elephant habitats.
- ❑ Eco- development and veterinary care.
- ❑ Research on issues relating to elephant conversation.
- ❑ Public education and awareness programme and capacity building of field staff, mahouts and veterinarians.

During the year an amount of Rs.13.34 crore (Rs.3.05 crore for the North-Eastern States) has been provided to various States for habitat management mitigation of human-elephant conflict, payment of ex-gratia relief for loss of human life and crops caused by wild elephants, strengthening of anti-poaching measures, capacity building of the field staff, registration of domesticated elephant using microchips etc.

Major achievements made during the year are as follows:

- ❑ A programme for registration of domesticated elephants with the help of microchips was carried out in the country during the year.
- ❑ A training of trainer programme for the officers of elephants reserves in Uttaranchal, UP, Jharkand and Orissa was held at Corbett National Park with the help of Wildlife Institute of India in January 2005.
- ❑ Arrangements for refresher courses for veterinarians were made with the help of Kerala Agricultural University (Trichur).
- ❑ Training programmes for mahouts were organized in Assam and Kerala.
- ❑ Programme has been initiated for the regular and systematic monitoring of wild elephants under the MIKE (Monitoring of Illegal Killing of Elephants) programme of 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. India was elected as the chairperson of the sub-regional steering committee of MIKE for South Asia.
- ❑ A documentary film on Project Elephant titled ‘Living with Giants’, was made with the help of the noted wildlife film-maker Ashish Chandola.

- ❑ A Wildlife Crime Cell was set up to prepare a data base on Wildlife offences and strengthen informer network in some sensitive areas in the country. A training programme for the frontline staff of the State Forest Departments in criminal investigation techniques was organized with the help of National Institute of Criminology & Forensic Sciences in New Delhi in January 2005.
- ❑ Elephant Day was celebrated during the wildlife week (October 2004) in all the Elephant Reserves in the country.

Central Zoo Authority

Central Zoo Authority (CZA) was established under the provisions of Wild Life (Protection) Act, 1972, and consists of a Chairman and 10 members and one whole time Member Secretary. Two committees namely 'Administrative Committee' and 'Technical Committee' have been constituted for carrying out the functions of the Central Zoo Authority. Main functions of the Central Zoo Authority are:

- ❑ Specify minimum standards for housing, upkeep and care of the animals in the zoos.
- ❑ Recognition of zoos on the basis of evaluation of their functioning.
- ❑ Identify endangered species of wild animals for the purpose of Captive Breeding and assigning responsibilities in this regard to zoos.
- ❑ Coordinate the acquisition, exchange and loading of animals for breeding.
- ❑ Provide technical and other assistance to zoos for management and development on scientific lines.

Details of activities performed by the Central Zoo Authority during the year are as follows :

Financial assistance to Zoos

During the year Rs. 1285.97 lakhs has been released to zoos for taking up various activities like improvement of Animal Housing, Veterinary Care, Other development activities in zoos, Rehabilitation of circus animals and Training, workshops & conferences.

Evaluation and Recognition of Zoos

Out of the 165 recognized Zoos in the country, eight large zoos, two medium zoos, five small zoos and four mini zoos were granted renewal of recognition.

Training & Workshops

- ❑ Training programmes for Zoo Keepers were organized at Nandankanan Zoological Park, Bhubaneswar; Kamla Nehru Zoological Garden, Ahmedabad; Kanpur Zoological Park, Kanpur and Nehru Zoological Park, Hyderabad. In all, 70 animal keepers were trained in basic animal upkeep and health and care.
- ❑ All India Zoo Veterinarians Conference was organized at Lucknow on 3rd February, 2004. A total of 41 veterinarians from Large, Medium & Small Zoos participated in the Conference.
- ❑ Fifty-ninth Annual Conference of the World Association of Zoos and Aquariums & the Annual Meeting of the Conservation Breeding Specialist Group held at Taipei during 28th October- 4th November, 2004, where in CZA was represented.

Planned Breeding Programme

Red Panda Programme

The Central Zoo Authority has initiated a planned breeding program for the Red Panda at Padmaja Naidu Himalaya Zoological Park, Darjeeling. As part of this programme, two female Captive Bred Red Pandas were released into the wild from an intermediate release facility in Singalila National Park, West Bengal.

Laboratory for Conservation of Endangered Species (LaCONES)

In collaboration with the Centre for Cellular and Molecular



Fig 40. Red Panda - an endangered species

Biology (CCMB), Dept of Biotechnology, Government of India, Council for Scientific and Industrial Research (CSIR) and the State Government of Andhra Pradesh, the CZA is establishing a facility called LaCONES. Financial assistance of Rs. 180 lakhs has been provided to the CCMB for completion of the construction of the Phase – II of the project.

National Zoo Animal Health Coordinated Programme

In order to provide specialized services to the zoos in diagnosis of various disease affecting wild animals, the Central Zoo Authority is providing financial assistance to six Veterinary colleges/Universities. During the year an amount of Rs. 22.45 lakhs was provided to Assam Veterinary College, Guwahati.

A review meeting of the coordinators of these centers was organized in the office of the Central Zoo Authority on 22nd November 2004.

Rescue and Rehabilitation

Star Tortoises

A total no. of 1830 Star Tortoises Seized by Singapore Authorities has been housed at Nehru Zoological Park, Hyderabad. During the year, 175 Star tortoises has been rehabilitated in Srisailem Tiger Reserve in Andhra Pradesh as per the IUCN guidelines on reintroduction of the species.

Rehabilitation of Circus Animals

Consequent to the ban of five species of animals, During the year 75 lions, seven tigers, two bears, three monkeys and one leopards have been rescued from the circuses and have been rehabilitated at Nahargarh Biological Park, Jaipur; Bannerghatta Biological Park, Bangalore; Arignar Anna Zoological Park, Vandalur, Chennai; Indira Gandhi Zoological Park, Vishakhapatnam and Sri Venkateshwara Zoological Park, Tirupati.

Till date the Central Zoo Authority has rehabilitated 253 lions, 43 tigers, eight bears, one panthers and three monkeys from various Indian circuses.

Financial Assistance was released by CZA to accommodate 30 more lions and tigers at the rescue center at Sri Venkateshwara Zoological Park, Tirupati.

Several publications were also brought out by CZA during the year.

National Zoological Park

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

In order to achieve its goal the following activities were taken during the year:

- ❑ An African Elephant enclosure was built in an area approx. 600 sq.m.
- ❑ The enclosure of Thamin Deer and Barking Deer were joined together and a moat was provided. This provides almost double the space for the deers to roam about. The moat gives an unobstructed view of the animals.
- ❑ The Lion tailed Macaque was provided with electric fencing.
- ❑ The Plan and Design for the New Primate Enclosure has been prepared for execution.
- ❑ New Acrylic signages have been provided on the Reptile House, which gives ample information about



Fig 41. Western Tragopan - a wildlife species

the animal in display.

- ❑ The new guide map, warning and trail signages have been provided at various points.
- ❑ New Brochure, guide map, pamphlets have been published.
- ❑ New saplings of various trees and hedge plants have been planned in the park to keep the park green.
- ❑ Male Lion from Junagadh, Female Hyena from Jaipur and One Lion Tailed Macaque from Trivandrum Zoo (on exchange basis) were acquired by the Zoo.
- ❑ Various Animals like White Tiger(Female), Hippo (Male), Cape Buffalo (Female) etc. were sent to various zoos.
- ❑ A notable number of births took place in the zoo.

Other Activities

- ❑ The Veterinary Hospital continued to provide regular care and ensures a balance & nutritious food to each animal. They regularly conduct the examination of fecal, urine and blood samples. The Veterinary Hospital was successful in hand rearing of two cubs of Jaguar (Sony & Suji).
- ❑ The Students from the Veterinary College, Hissar were provided internship training.
- ❑ A number of public awareness programmes and an orientation programme for the Principals of Kendriya Vidhyalaya were also organized.
- ❑ A workshop Teacher's for Tigers was jointly organized in collaboration with Zoo Outreach Organization in July, 2004.
- ❑ A total number of approx 15 lakhs visitors visited the Zoological Park during the year.



Fig 42. Swamp deer at a National Park

UPDATES 2004-2005



- There are 92 National Parks and 500 Wildlife Sanctuaries covering an area of 15.67 million hectares in the country.
- During the year, the number of animal welfare organizations registered with Animal Welfare Board of India went up to 2152 from existing strength of 1800.
- Four new Tiger Reserves have been added to the existing list making it a total of 28 tiger reserves in the country at present.
- India was elected the chairperson of the Sub-Regional Steering Committee of Monitoring and Illegal Killing of Elephants (MIKE) for South-Asia under CITES.
- Elephant day was celebrated during Wildlife Week in October, 2004 in all the Elephant Reserves in the country.
- Out of 165 recognized zoos in the country, eight large zoos, two medium zoos, five small zoos and four mini zoos were granted renewal of recognition by Central Zoo Authority.
- During the year, 175 star tortoises have been rehabilitated in Srisailem Tiger Reserves in Andhra Pradesh as per IUCN Guidelines.
- A male lion from Junagadh, a female Hyena from Jaipur and one Lion-tailed Macaque from Trivandrum Zoo were acquired by National Zoological Park (NZP), New Delhi under its Exchange Programme.
- A total number of approximately 15 lakh visitors visited the NZP during the year.