

## WILDLIFE & BIODIVERSITY CONSERVATION IN WEST BENGAL

The state of West Bengal, in the Eastern region of India, is home to a rich and bewildering variety of forests and wildlife.

- From the famous Royal Bengal tiger that stalks its prey with legendary cunningness in the Gangetic delta of famous Sundarbans, to the one-horned Indian Rhinoceros grazing in the Terai grassland, the leopards lurking in the foothills of the Himalayas and Red Pandas resting in bamboo groves of Himalayas.
- The forests of this state has a rich assemblage of diverse habitats and vegetation designated with the help of eight different forest types. The diverse fauna and flora of West Bengal possess the combined characteristics of the Himalayan, sub-Himalayan and Gangetic plain.
- Diversity is further reflected in different types of ecosystem available here like mountain ecosystem of the north, forest ecosystem extending over the major part of the state, freshwater ecosystem, semiarid ecosystem in the western part, mangrove ecosystem in the south and coastal marine ecosystem along the shoreline.



These diverse ecosystems have resulted in rich faunal diversity of the state and consists of 10,013 species out of a total of 89,451 species of animals present in our country, thus representing 11.19% of our country's fauna.

The forests of West Bengal are classified into seven categories viz., Tropical Semi-Evergreen Forest, Tropical Moist Deciduous Forest, Tropical Dry Deciduous Forest, Littoral and Swampy Forest, Sub-Tropical Hill Forest, Eastern Himalayan Wet Temperate Forest and Alpine Forest.

West Bengal has 4692 sq.km. of forests under protected area network which is 39.50% of the State's total forest area and 5.28% of the total geographical area. After the Notification of Pakhi Bitan (Wildlife Sanctuary), with an area of 14.09 sq.km, as a new WLS in Jalpaiguri District, the total area under Protected Area went upto 4705.9362 sq.km (39.62% of Recorded Forest Area). The PA network includes 1502.8146 sq.km. in sixteen Sanctuaries, 1981.4817 sq.km. in six National Parks and the balance areas are being represented by buffer areas of the two Tiger Reserves, viz. Sundarbans Tiger Reserve and Buxa Tiger Reserve. There are two Elephant Reserves viz., Mayurjharna Elephant Reserve with an area of 414.00 Sq.km. and Eastern Doars Elephant Reserve with an area of 977.51 Sq.km. In addition, there is one Biosphere Reserve viz. Sundarban Biosphere Reserve with an area of 9630 Sq.km. This includes the Sundarban Tiger Reserve, the Lothian Island Wildlife Sanctuary, West Sundarban Wildlife Sanctuary and the Holiday Island Wildlife Sanctuary. In West Bengal emphasis has been given to conservation and management of sustainable resources in order to achieve the goal of long-term biodiversity conservation. The over all strategy involves protection of critical habitats of endangered species. The strategies also focus on

improved PA management, development of infrastructure, habitat improvement programme, reduction of man animal conflict, capacity building and involvement of local people in management of PA areas. The Bengal wilderness is also home of an array of highly endangered species like the Asian Elephant, Great one horned Rhino, Serow, Red Panda, Pigmy Hog, Bengal Florican, Black Necked Crane, Great pied Hornbill, Goliath Heron, Estuarine Crocodile, Salvator Lizards, Olive Ridley Marine Turtle, rare Batagur terrapin, let alone being the habitat for most of the cats of India, e.g. Bengal Tiger and Leopard and the Clouded Leopard, Marbled Cat, Leopard Cat, Golden Cat, Jungle Cat and, Fishing Cat representing the lesser cats, etc.

### Protected Area Network

Protected Area (National Park)	Area in Sq. Km.	Flagship Species	District
1. Singalila N.P.	78.60	Red Panda	Darjeeling
2. Neora Valley N.P.	88.00	Red Panda	Darjeeling
3. Buxa N.P.	117.10	Tiger	Alipurduar
4. Gorumara N.P.	79.45	Rhinoceros	Jalpaiguri
5. Sundarban N.P.	1330.10	Tiger	South-24 Parganas
6. Jaldapara N.P.	216.34	Rhinoceros	Alipurduar
<b>(Wildlife Sanctuary)</b>			
1. Jorepokhri W.L.S.	0.04	Salamander	Darjeeling
2. Senchal W.L.S.	38.88	Himalayan Black Bear	Darjeeling
3. Chapramari W.L.S.	9.60	Gaur	Jalpaiguri
4. Mahananda W.L.S.	158.04	Elephant	Darjeeling
5. Raiganj W.L.S.	1.30	Birds	North Dinajpur
6. Bethuadahari W.L.S.	0.6686	Spotted Deer	Nadia
7. Ballavpur W.L.S.	2.021	Spotted Deer	Birbhum
8. Ramnabagan W.L.S.	0.145	Spotted Deer	Bardhaman
9. Bibhutibhusan W.L.S.	0.64	Spotted Deer	North-24 Parganas
10. Chintamani Kar Bird Sanctuary	0.07	Birds	S. 24 Parganas
11. Sajnakhali W.L.S.	362.40	Tiger	South-24 Parganas
12. Halliday Island W.L.S.	5.95	Crocodile	South-24 Parganas
13. Lothian Island W.L.S.	38.00	Crocodile	South-24 Parganas
14. Buxa W.L.S.	314.52	Tiger	Jalpaiguri
15. Pakhi Bitan (Bird Sanctuary)	14.09	Bird	Jalpaiguri

## **Population status of major wild animal:**

### **Elephants in West Bengal**

- About 650 wild elephants spread over two distinct regions:
  - North Bengal (Jalpaiguri & Darjeeling): around 529
  - South Bengal (W. Midnapur, Bankura & Purulia): around 118
- West Bengal also receives seasonal visits from 100-150 elephants from Assam and Jharkhand.
- The elephant habitat in West Bengal extends over 4200 sq km.
- West Bengal has two Elephant Reserves: Eastern Dooars ER and Mayurjharna ER.

### **Tiger Conservation**

Tiger Lands of West Bengal are

1. Sundarban Tiger Reserve  
64-90 nos. during 2010 (as per report of Wildlife Institute of India, Dehradun's All India Tiger Estimation 2010).  
A minimum of 81 Tigers during 2012-13 Camera Trap Analysis conducted by WWF & WII.
2. 24 Parganas (South) Divn:  
A minimum of 22 tigers during 2011-12 as per Camera Trap Analysis conducted by WWF.
3. Buxa Tiger Reserve  
20 nos. during 2011 (as per Scat analysis through DNA finger-printing technique) by CCMB-Hyderabad, Aranyak, Assam & BTR authority)

### **Rhino Conservation:**

- Population increased from 22 (1986) to 255 (2015)
  - Jaldapara Wildlife Sanctuary: 204
  - Gorumara National Park & adjoining areas: 51

## **Major Conservation Strategies:**

### **Forest and Wildlife Protection**

- Patrolling
- Forest Protection Force
- Arms and ammunitions
- Control of Illegal trade in wildlife and articles.
- Control of illegal wood based industries
- Legal Cells.
- Intelligence Network and rewards
- Coordination among Law enforcement agencies including training/workshop.

### **Development Activity**

#### **Habitat Improvement**

- Over wood removal

- Fodder Plantations
- Weed eradication
- Controlled Burning
- Control of Fire
- Control of grazing
- Reforestation of degraded forests
- Thinning of older plantations
- Conversion of mono culture plantation into mixed plantations.
- Soil and Water Conservation
- Embankment protection.
- Construction of water harvesting/ recharging structures.



**Grass Fodder Plantation**

### Eco-development Activities

- Microplanning and implementation
- Construction of Irrigation channels, Dugwells, Tubewell.
- Provision for Agri-horticultural inputs
- Mushroom cultivation, apiary, pisciculture, silvo pasture, provision of inputs for small scale industry/business.
- Community development works, cattle improvement, alternative sources of energy, support for animal husbandry.
- Infrastructure development.
- Immunisation of cattle.



**Drinking water facilities**

### Other activities

- Nature education and awareness generation
- Curbing Man-animal conflict
- Capture and re-habilitation of problem population
- Census of major wild animals.
- Introduction/re-introduction of wild animals
  - Rhino
  - Spotted Deer
  - Gharial
  - Saltwater Crocodile
  - Swamp Deer
  - Red Panda
- Wetland Development
- Research
  - In-house
  - Collaborative
  - Contract
- Monitoring
- Training



**Sit & Draw during Wildlife Day**

## Eco-tourism:

- More than 1 lakh tourists mainly day visitors, trekkers, serious wildlife tourists and some pilgrims visit different P.A.s per year.
- The tourist attractions are Sundarban Tiger Reserve, Jaldapara NP, Mahananda WLS, Gorumara NP, Neora Valley NP, Singalila NP and Buxa Tiger Reserve.
- The Deptt. of Tourism has included S.T.R, B.T.R., Jaldapara, Gorumara, Singalila and Neora Valley within the tourist circuit.



## Objectives:

- To promote conservation awareness among the visitors and local people through nature education and interpretation.
- To regulate tourism in a manner that will make the visit of tourists enjoyable, educative and compatible with the goals of conservation.
- To promote eco-tourism in lesser-known areas – thereby increasing tourism capacity without compromising with the ideals of conservation.
- To minimise the negative impact of tourism on PA and Wildlife.
- To provide optimum economic benefits to the local communities through tourism activities.

## Major Source of Fund

- Non Plan (Mainly, salary, Wages, Reward for Control of Wild Animal & Maintenance)
- State Plan (Mainly, Construction, Plantation and Nature Conservation)
- Centrally Sponsored Scheme (Mainly Wildlife Management, Habitat Improvement, Protection, Awareness/Training/Research, Control of Fire, Eco-development activities/ support activities to enhance socio-economic development of fringe people to reduce pressure on forests and sustainable development of PA)
- Others- MGNREGA etc
- **West Bengal Forest and Biodiversity Conservation Project**  
Japan International Cooperation Agency (JICA) has extended a loan to implement the “West Bengal Forest and Biodiversity Conservation Project”. The objective of the Project is to improve forest ecosystem, conserve biodiversity and improve livelihood means by undertaking afforestation, regeneration, wildlife management and income generation activities through Joint Forest Management approach, including institutional capacity development, thereby contributing to environmental conservation and harmonized socio-economic development of West Bengal.

## Problems of Management

- Impact of Biotic & abiotic pressure.
- Conflict – Man-Elephant, Man-Tiger, Man-Leopard, Man-bison, Man-langur etc
- Shortage of protection personnel.
- Shortage of sophisticated arms and equipments
- Illegal Trade.

## ILLEGAL WILDLIFE TRADE in Live and Wildlife articles:

- TIGERS => Skin, Bones, Nails
- RHINOS => Horns, Nails
- ELEPHANT => Ivory, Bones
- LEOPARD => Skin, Bones
- SNAKE=> Snake skin and Venom
- GECKO=> Live and skin
- LIVE BIRDS, ORCHIDS, BUTTERFLIES, TURTLES etc.



## CONFLICT MANAGEMENT

- ELEPHANT SQUADS-- DRIVING ELEPHANTS
- KNKI SQUADS--CHASE WITHOUT CAPTURE
- ENERGISED FENCING AT CRUCIAL POINTS
- CAPTURE, REHABILITATION of ROGUE ELEPHANT and (if needed) ELIMINATION
- HABITAT IMPROVEMENT PROGRAMMES
- CREATION OF WATER HOLES
- AWARENESS GENERATION//PUBLICITY.



## COLLABORATIVE MANAGEMENT

- VOLUNTARY SQUADS IN T.E. &VILLAGES---PROPER DIRECTION, LESS ATTACKS ON ELEPHANTS, HELP TO SQUADS
- ENERGISED FENCING FROM VILLAGE FUND
- PROTECTION OF HABITATS BY FPC//EDC---FROM ILLEGAL FELLING, FIRE, GRAZING
- ECODEVELOPMENT PROGRAMMES-REDUCTION OF PRESSURES ON HABITATS, MORE AWARENESS,----LONG TERM SOLUTION

## Ex-citu conservation

- Padmaja Naidu Himalayan Zoological Park, Darjeeling- Red panda reintroduction
- Alipore Zoological Garden, Kolkata- tiger treatment
- Translocation of Chital
- Release of crocodile

**Human-Elephant Conflict has rose to an alarming proportion and crop damage, human death and retaliatory killing of elephant by villagers are on the rise.**



The following measures are in place to combat the conflict and bring the situation under control:

- Eco-restoration of the animal habitats by aforestation of fodder tree species, indigenous grasses and bamboos in blank areas and degraded forests.
- Ecological restoration of critical elephant migration corridors and routes.



- Enrichment of the natural habitats through development of cover, water resources, salt-licks, soil and water conservation etc. wherever necessary.
- Direct measures to mitigate man-animal conflict including creation of barriers, relocation and initiate rehabilitation of human population residing in animal areas, depredation control squads, early warning systems, etc.
- Indirect measures to mitigate man-animal conflicts through development of pasture lands and woodlands on available community land and Government land outside the animal habitats, establishment of alternate systems to meet sustenance need of forest-dependent human populations.
- Payment of relief (ex-gratia) against deaths / injuries to human-beings as well as damage of houses / crops / cattle caused by wild animal.
- Capture, and translocation of problem populations of animals; translocation and/or elimination of established rogue animal.
- Training of staff of wildlife and territorial divisions and hold training programmes for wildlife managers and handlers.
- Strengthening of anti-poaching measures and infrastructure; payment of rewards / incentives.
- Veterinary care for animals in the wild as well as in captivity.
- Publication of material and holding of public meetings for increasing awareness among people.
- Constitution of animal squads at several depredation prone areas to drive the animal away from the localities to the forest areas.
- To prevent killing of wild elephants from train accident, construction of various civil works by the N.F.Railway like Construction of RCC Watch Tower, Provision of heavy duty solar light with charger facilities, water arrangement for tower, Supply of night vision binocular, High beam search light, Communication system by RT (fixed) and mobile etc.,
- Use of modern technology like Drone in tracking movement of wild animals.
- The railway in collaboration with Forest Department are also constructing certain engineering structures like construction of ramp passes, Girder Bridge, Fencing, etc. along railway track from Siliguri to Alipurduar.
- Elephant Squads/ Wildlife Squads – 9 in North Bengal and 3 in South Bengal. 4 more Elephant Squads are in the planning stage.
- Elephant Movement Co-ordination Committee in South Bengal & North Bengal.
- Daily Monitoring of Elephant Movement
- Elephant Dossiers prepared.
- Bulk SMS for alert of villagers and administration.
- Elephant Rescue and rehabilitation centre in North and South Bengal
- Crowd Management during elephant Straying- imposition of Cr.PC 144.

