



Wildlife Odisha-2019



WILDLIFE ORGANISATION

FOREST AND ENVIRONMENT DEPARTMENT

GOVERNMENT OF ODISHA

OCTOBER, 2019



Wildlife Odisha - 2019



WILDLIFE ORGANISATION

Forest and Environment Department

Government of Odisha

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This report may be quoted freely with acknowledgement.

Wildlife Odisha-2019

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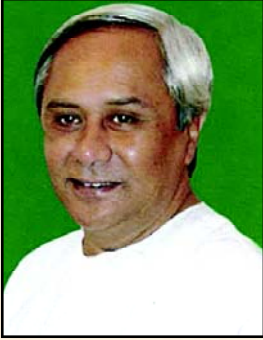
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ମୁଖ୍ୟମନ୍ତ୍ରୀ, ଓଡ଼ିଶା



ଲୋକ ସେବା ଭବନ

ଭୁବନେଶ୍ୱର

ଏଫଡ଼ିଏ ବନ୍ୟପ୍ରାଣୀ ସଂରକ୍ଷଣ ପାଳନ ଉପଲକ୍ଷେ ମାନ୍ୟବର ମୁଖ୍ୟମନ୍ତ୍ରୀଙ୍କ ବାର୍ତ୍ତା

ପ୍ରତିବର୍ଷ ପରି ଚଳିତ ବର୍ଷ ଅକ୍ଟୋବର ୨ ଗାନ୍ଧୀ ଜୟନ୍ତୀରୁ ଏଫଡ଼ିଏ ବନ୍ୟପ୍ରାଣୀ ସୁରକ୍ଷା ସଂଗ୍ରହ ସାରା ଦେଶରେ ପାଳନ କରାଯାଉଥିବା ଆନନ୍ଦର କଥା । ଚଳିତ ବର୍ଷ ମଧ୍ୟ ଆମେ ଅହିଂସାର ଉପାସକ ମହାତ୍ମା ଗାନ୍ଧୀଙ୍କ ୧୫୦ତମ ଜନ୍ମବାର୍ଷିକୀ ପାଳନ କରୁଅଛୁ ।

‘ଜୀବେଦୟା’ ହେଉଛି ଭାରତୀୟ ସଂସ୍କୃତିର ଆତ୍ମବାକ୍ୟ । ଏ ଜଗତରେ ସବୁ ପ୍ରାଣୀର ବଞ୍ଚିବାର ଅଧିକାର ରହିଛି । ପରିବେଶ ସନ୍ତୁଳନ ନିମନ୍ତେ ବନ୍ୟପ୍ରାଣୀ ଓ ସେମାନଙ୍କ ଆବାସସ୍ଥଳୀର ସୁରକ୍ଷା ଓ ସଂରକ୍ଷଣ ସ୍ୱତନ୍ତ୍ର ଗୁରୁତ୍ୱ ବହନ କରେ । ସେହିପରି ବିଲୁପ୍ତପ୍ରାୟ ଜୀବଜନ୍ତୁଙ୍କ ସଂରକ୍ଷଣ ଆମର ପ୍ରାଥମିକତା ।

ଜୈବ ବିବିଧତା ଦୃଷ୍ଟିରୁ ଓଡ଼ିଶା ଏକ ସମୃଦ୍ଧ ରାଜ୍ୟ । ଆମ ରାଜ୍ୟର ପାହାଡ଼ ପର୍ବତ, ନଦୀ, ହ୍ରଦ ଓ ଜଙ୍ଗଲ ଆଦି ବିଭିନ୍ନ ପ୍ରକାରର ପଶୁ, ପକ୍ଷୀ ଓ ବୃକ୍ଷରାଜିର ଗନ୍ତାଘର । ଏହି ବିଶାଳ ଜୈବମଣ୍ଡଳର ଉପଯୁକ୍ତ ସୁରକ୍ଷା ପାଇଁ ଆମେ ସମସ୍ତେ ଉଦ୍ୟମ କରିବା ଦରକାର । ଏ ଦିଗରେ ଥିବା ଆଇନକୁ କଡ଼ାକଡ଼ି ଭାବରେ କାର୍ଯ୍ୟକାରୀ କରିବାରେ ସମସ୍ତଙ୍କ ସହଯୋଗ ଦରକାର ।

ବନ୍ୟପ୍ରାଣୀ ଆମ ପରିବେଶର ଅନନ୍ୟ ଅଙ୍ଗ । ଆମ ପରିବେଶର ସୁରକ୍ଷା ଓ ଭବିଷ୍ୟତ ବଂଶଧର ମାନଙ୍କ ସ୍ୱାର୍ଥକୁ ଦୃଷ୍ଟିରେ ରଖି ବନ୍ୟପ୍ରାଣୀ ଓ ସେମାନଙ୍କ ଆବାସସ୍ଥଳୀର ସୁରକ୍ଷା ପାଇଁ ସରକାର ନେଇଥିବା ପଦକ୍ଷେପର ସଫଳତା ପାଇଁ ମୁଁ ସମସ୍ତଙ୍କ ସହଯୋଗ କାମନା କରୁଛି ।

ନବୀନ ପଟ୍ଟନାୟକ
(ନବୀନ ପଟ୍ଟନାୟକ)



ଦୂରଭାଷ କାର୍ଯ୍ୟାଳୟ : (୦୬୭୪) ୨୫୩୬୯୩୦

୨୩୨୨୧୮୫

ବାସଗୃହ : ୨୫୩୬୭୯୫

ବିଧାନସଭା : ୨୫୩୯୦୨୪

ବିକ୍ରମ କେଶରୀ ଆରୁଖ

ମନ୍ତ୍ରୀ

ଜଙ୍ଗଲ ଓ ପରିବେଶ, ସଂସଦୀୟ ବ୍ୟାପାର

ଓଡ଼ିଶା

୬୫ତମ ବନ୍ୟପ୍ରାଣୀ ସପ୍ତାହ, ୨୦୧୯ ପାଳନ ଉପଲକ୍ଷେ

ମାନ୍ୟବର ଜଙ୍ଗଲ ଓ ପରିବେଶ ମନ୍ତ୍ରୀଙ୍କ ବାର୍ତ୍ତା

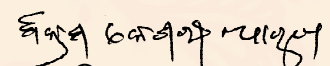
ବନ୍ୟପ୍ରାଣୀ ସୁରକ୍ଷା ଓ ସଂରକ୍ଷଣ ତଥା ସେମାନଙ୍କର ଜୀବନ ଓ ଆବାସସ୍ଥଳୀକୁ ସୁରକ୍ଷିତ ରଖିବା ଦିଗରେ ବ୍ୟାପକ ସଚେତନତା ସୃଷ୍ଟି କରିବାର ଲକ୍ଷ୍ୟ ନେଇ ୧୯୫୨ ମସିହାରୁ ପ୍ରତିବର୍ଷ ବନ୍ୟପ୍ରାଣୀ ସପ୍ତାହ ପାଳିତ ହୋଇ ଆସୁଅଛି । ସତ୍ୟ ଏବଂ ଅହିଂସାର ମୂର୍ତ୍ତିମନ୍ତ ପ୍ରତୀକ ଜାତିର ଜନକ ମହାତ୍ମାଗାନ୍ଧୀଙ୍କର ପୁଣ୍ୟ ଜନ୍ମତିଥି ଅକ୍ଟୋବର ୨ରୁ ୮ ତାରିଖ ପର୍ଯ୍ୟନ୍ତ ଏକ ସପ୍ତାହ ଧରି ସମଗ୍ର ଦେଶରେ ଏହି ବନ୍ୟପ୍ରାଣୀ ସପ୍ତାହ ପାଳନ କରାଯାଏ ।

ଘନ ଅରଣ୍ୟ, ଦିଗନ୍ତ ବିସ୍ତାରୀ ପର୍ବତମାଳା, ନଦନଦୀ, ହ୍ରଦ ଭଳି ବିବିଧ ପ୍ରାକୃତିକ ସଂପଦ ସହ ବିରଳ ବନ୍ୟପ୍ରାଣୀ ଏବଂ ଜୈବ ବିବିଧତାରେ ପରିପୂର୍ଣ୍ଣ ଆମ ରାଜ୍ୟ ଓଡ଼ିଶା । ବିସ୍ତୀର୍ଣ୍ଣ ହେନ୍ତାଳ ବନ, ଅଗଣିତ ବିଦେଶାଗତ ପକ୍ଷୀ ଏବଂ ଅଣ୍ଟାଦେବା ପାଇଁ ସାମୁଦ୍ରିକ ବେଳାଭୂମିକୁ ସୁଦୂର ପ୍ରଶାନ୍ତ ମହାସାଗରରୁ ଆସୁଥିବା ଲକ୍ଷ ଲକ୍ଷ ଅଲିଭ୍ ରିଡ୍ଲେ କଇଁଛଙ୍କ ସମାଗମ କେବଳ ଆମ ରାଜ୍ୟରେ ହିଁ ଦେଖିବାକୁ ମିଳିଥାଏ ।

ବନ୍ୟପ୍ରାଣୀମାନଙ୍କ ସୁରକ୍ଷା, ସଂରକ୍ଷଣ, ଅଭିବୃଦ୍ଧି ତଥା ସେମାନଙ୍କ ବାସସ୍ଥଳୀଗୁଡ଼ିକୁ ସୁରକ୍ଷିତ ରଖିବା ପାଇଁ ରାଜ୍ୟ ସରକାର ବହୁବିଧ ପଦକ୍ଷେପ ଗ୍ରହଣ କରିଛନ୍ତି । ରାଜ୍ୟରେ ଗୋଟିଏ ଜାତୀୟ ଉଦ୍ୟାନ, ୨ଟି ବ୍ୟାଘ୍ର ପ୍ରକଳ୍ପ, ଗୋଟିଏ ଜୈବମଣ୍ଡଳ ଓ ୩ଟି ହସ୍ତୀ ପ୍ରକଳ୍ପ ଗଠନ କରାଯାଇଛି । ବିଦେଶାଗତ ପକ୍ଷୀ, ସାମୁଦ୍ରିକ କଇଁଛ, କୃଷ୍ଣସାର ମୃଗ, କୁମ୍ଭୀର, ତଥା ବିରଳ ବନ୍ୟପ୍ରାଣୀଙ୍କର ସୁରକ୍ଷା ପାଇଁ ରାଜ୍ୟ ସରକାରଙ୍କ ଦ୍ଵାରା ଅନେକ ଯୋଜନା କାର୍ଯ୍ୟକାରୀ କରାଯାଇଛି ।

ବନ୍ୟପ୍ରାଣୀ ଓ ମନୁଷ୍ୟ ପରସ୍ପର ପରିପୁରକ । ଜୀବଜଗତର ସନ୍ତୁଳନ ରକ୍ଷା ପାଇଁ ବନ୍ୟପ୍ରାଣୀମାନଙ୍କ ସ୍ଥିତି, ସୁରକ୍ଷା, ସଂରକ୍ଷଣ ଓ ସମୃଦ୍ଧି ଏକାନ୍ତ ଆବଶ୍ୟକ । ବନ୍ୟଜନ୍ତୁଙ୍କ ସଂରକ୍ଷଣ ଓ ପରିଚାଳନା ପାଇଁ ଜନସାଧାରଣଙ୍କ ସକ୍ରିୟ ସହଯୋଗ ଏବଂ ସଂପୃକ୍ତି ଏକାନ୍ତ କାମ୍ୟ ।

୬୫ତମ ବନ୍ୟପ୍ରାଣୀ ସପ୍ତାହ ପାଳନ ଅବସରରେ ବନ୍ୟପ୍ରାଣୀ ଓ ସେମାନଙ୍କ ଆବାସସ୍ଥଳୀର ସୁରକ୍ଷା ଉଦ୍ଦେଶ୍ୟରେ ଗ୍ରହଣ କରାଯାଇଥିବା ବିଭିନ୍ନ ଯୋଜନାଗୁଡ଼ିକର ସଫଳ ରୂପାୟନ ନିମନ୍ତେ ମୁଁ ଜନସାଧାରଣ, ସ୍ଵେଚ୍ଛାସେବୀ ଏବଂ ବିଭିନ୍ନ ସାମାଜିକ ଅନୁଷ୍ଠାନଗୁଡ଼ିକର ଆନ୍ତରିକ ସହଯୋଗ କାମନା କରୁଛି ।


(ବିକ୍ରମ କେଶରୀ ଆରୁଖ)



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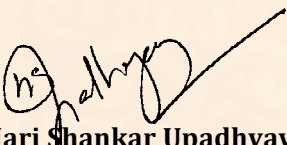
Dr Hari Shankar Upadhyay, IFS
Principal CCF (Wildlife) &
Chief Wildlife Warden, Odisha

FOREWORD

Wildlife conservation entails protection and conservation of flora and fauna within and outside their habitats. The growing human population and increased developmental activities are adversely affecting wildlife habitats. They are no longer disturbance free and are also facing fragmentation leading to man-animal conflicts, wild animal depredation. Management of wildlife with disturbed surroundings is a big challenge for the wildlife managers. For protection and conservation of wildlife and their habitats, the wildlife organization has been implementing various *in-situ* and *ex-situ* conservation measures. Protecting wild animals and their habitats, apprehending offenders in wildlife offence, rescue of wild animals, mitigation of man animal conflict, monitoring the status of wildlife, creating awareness among the people and promoting eco- tourism for providing alternate sources of livelihood near protected areas, are some of the major activities of wildlife wing of the department.

The 'Wildlife Odisha – 2019' is a compilation of most of the wildlife conservation interventions and relevant statistics undertaken during previous years. The exemplary contributions of some people in the field of wildlife conservation in the state over past few years has also been highlighted. These people were conferred state level Biju Patnaik Wildlife Conservation Award and several Sub- Divisional Level awards by the Wildlife Organization.

I hope 'The Wildlife Odisha- 2019' will be of immense use to the field staff, wildlife researchers, administrators, nature lovers and provide them valuable inputs for conservation of wildlife.


(Hari Shankar Upadhyay)







CHAPTER I

INTRODUCTION TO THE STATE OF ODISHA

The State of Odisha has a geographical area of 1, 55,707 sq. km. The Forest Cover in the state is 51,345 sq km which is 32.98% of the geographical area of the State (SFR-2017 of Forest Survey of India). The State is quite rich in wildlife. The important wildlife found in state are Elephants, Tigers, Melanistic Tiger, Leopards, Black Panther, Hyena, Wolf, Fishing Cat, Leopard cat, Jungle cat, Gaur, Sambar, Spotted deer, Wild boar, Giant squirrels, Pea fowl, Hill myna, Marsh Crocodile, Gharial, Salt water Crocodile, King Cobra, Sea turtles and Monitor lizard etc. To provide protection to wildlife and their habitat, a network of protected areas have been constituted. Programmes have been initiated for special care of endangered and threatened species.

The State has 19 Sanctuaries one National Park (Bhitarkanika), one proposed National Park (Similipal) which have been notified under the provisions of Wildlife (Protection) Act, 1972 for *in-situ* conservation. These Protected Areas constitute 10.37% of the total forest area and 5.36% of the total geographical area of the State. One large Zoological Park (Nandankanan), three Small Zoos and 8 Mini Zoos have been notified for *ex-situ* conservation and management of wildlife out side protected areas. The State has the singular distinction of having three stretches of mass nesting beaches of endangered Olive Ridley Sea turtles which includes the world's largest nesting ground of Olive Ridley Sea turtle, *Lepidochelys olivacea* at Gahirmatha. It has many natural wetlands including Chilika, the largest wetland of Asia and Bhitarkanika which are declared as "Ramsar Sites".

The Wildlife Diversity of Odisha

A total of 29 species of amphibians, 129 species of reptiles including three crocodilian species, 537 species of birds and 114 species of mammals have so far been recorded in the State which include 54 species of threatened animals (17 species of reptiles, 15 species of birds and 22 species of mammals) as per the definition of IUCN Red Data Book. The state is blessed with an extremely rich and unique assemblage of wildlife, inhabiting their respective habitats spread over three different bio-geographic zones.

For captive and rescued animals provision of *ex-situ* conservation has been made. Various developmental projects and mining etc are creating disturbances for wildlife and their habitat leading to man-animal conflicts. Hence habitat fragmentation and the ensuing man-animal conflicts are some of the major challenges before the Wildlife Organization.



**Odisha Forest at a Glance:****FSI Report 2017*

| FOREST COVER | AREA |
|--------------------------------------------------------------------|-----------------------|
| Total Geographical Area | 1,55,707 sq km |
| The average annual rainfall varies from about | 1200 mm to 1600 mm |
| CARBON STOCK IN FOREST | |
| The Total Carbon stock of forests in the State | 452.90 million tonnes |
| % of total forest carbon stock of the Country | 6.40 |
| FOREST COVER WITHIN RECORDED FOREST AREA | |
| Very dense forest cover | 6,082 sq.km |
| Moderately dense | 15,603 sq.km |
| Open forest | 12,431 Sq.km |
| Total | 34,116 sq km |
| FOREST COVER OUTSIDE RECORDED FOREST AREA | |
| Very dense forest | 885 sq km |
| Moderately Dense Forest | 5,767 sq km |
| Open Forest | 10,557 sq km |
| Total | 17,229 sq km |
| Total Forest Cover | 51,345 sq km |
| Percentage of forest cover within and outside recorded Forest Area | 32.98% |
| MANGROVE COVERS | |
| Very dense mangrove | 82 sq.km |
| Moderately dense mangrove | 95 sq.km |
| Open mangrove | 54 Sq.km |
| Total (FSI Report 2015) | 231 sq km |

Biodiversity Comparison (MoEF report, ZSI-2018; National Biodiversity Action plan 2019 & Odisha Biodiversity Board report, 2019)

| NUMBER OF SPECIES | | | | |
|-------------------|-------|-------|--------|-------------------------------|
| TAXA | WORLD | INDIA | ODISHA | PERCENTAGE OF ODISHA TO INDIA |
| Mammals | 5416 | 427 | 114 | 27% |
| Birds | 9026 | 1340 | 537 | 40% |
| Reptiles | 9232 | 584 | 129 | 22% |
| Amphibians | 6776 | 414 | 29 | 07% |
| Fishes | 32156 | 3364 | >800 | 24% |





CHAPTER II

ABOUT WILDLIFE ORGANIZATION

The State Wildlife Organization was formed on 14th August 1974, a sequel to adoption of the Wildlife (Protection) Act, 1972; and promulgation of the Wildlife (Protection) (Odisha) Rules, 1974. The Conservator of Forests, Development Circle was designated as the Ex-Officio Chief Wildlife Warden, Odisha. In the year 1976, a separate Wildlife Organization was constituted with the Chief Wildlife Warden posted in the rank of Conservator of Forests, to begin with.

The present Wildlife Organization is headed by Principal Chief Conservator Forest (Wildlife) & Chief Wildlife Warden, Odisha and is assisted by Addl. Principal Chief Conservator of Forests (Wildlife) and three Deputy Conservator of Forests in the Headquarters and the Field Director, Similipal Tiger Reserve, Director, Nandankanan Biological Park, 12 Divisional Forest Officer/Deputy Conservators of different Divisions and two Deputy Directors i.e Similipal Tiger Reserve and Nandankanan Zoological Park in the field. All the DCFs in charge of 37 territorial divisions and 12 Wildlife Divisions function as Wildlife Wardens under Wildlife (Protection) Act, 1972.

The foundation stone for construction of “Prakruti Bhawan” the State Wildlife Headquarters building was laid on 02.09.2009 towards the western side of Green Park Nursery at Saheed Nagar, Bhubaneswar. On 18.03.2016 construction started on the new site i.e. towards the central part of Green Park Nursery at Saheed Nagar, Bhubaneswar. The State Wildlife Headquarters “Prakruti Bhawan” was inaugurated on 27.02.2019 by the Hon’ble Minister, Forest and Environment, Government of Odisha Sri Bijayashree Routray.

The new office building of State Wildlife Headquarters at Saheed Nagar, “**Prakruti Bhawan**” has been constructed over Khata No.1033, Plot No. 1459 in Mouza- Saheed Nagar over an area of AC 0.500 DC of G.A. Department land.

The building which is G+3 storied along with its furnishing and allied provisions stands over a plinth area of 5000sq.ft. having carpet area of 4000sq.ft approximately constructed with an estimated cost of Rs.8.6153 crores. It has the unique features like its own sewerage treatment plant (STP) with waste digester, roof top rain water harvesting plant etc. with CCTV/ Bio-metric and Wifi services.

The building facing the NH-16 has important features like an Interpretation Centre with different theme halls, Eco-tourism Cell with city Booking Centre in the Ground floor. The 49 seater conference hall is located in the 1st floor and a 10 seater Mini Conference Hall with video Conferencing facility in the second floor. A library with an objective of transforming it



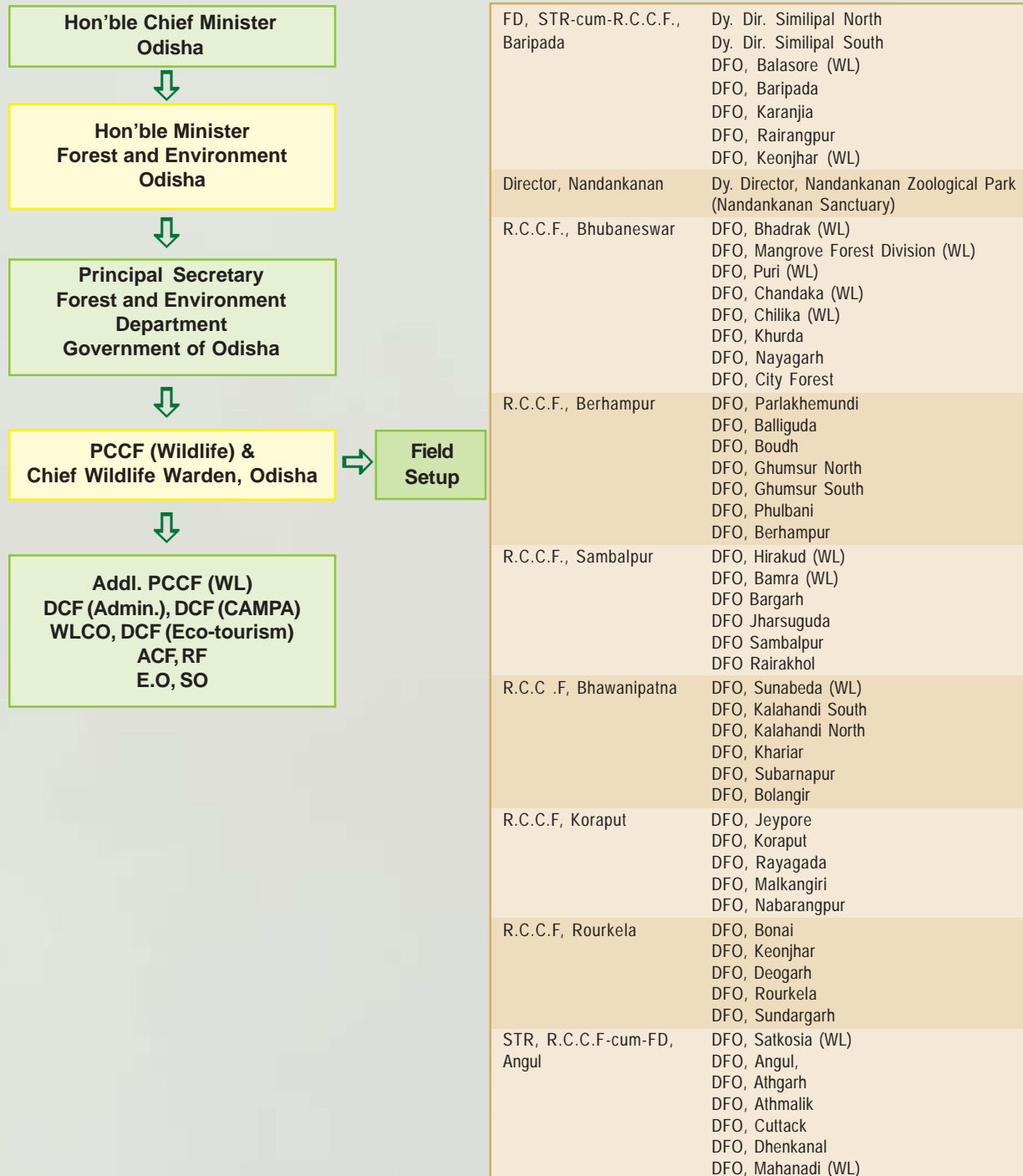
Inauguration of Prakruti Bhawan, Saheed Nagar, Bhubaneswar



to an e-library with more than 3000 books on flora, fauna, law, management plans and lot more wildlife publications with journals and periodicals is located on the 2nd floor.

A GIS Cell functioning in the second floor is well equipped with modern technology and a Server for the website www.wildlife.odisha.gov.in to track the elephant movement, forest fire and man-animal conflict. This has also provision for expansion to conduct DGPS survey with total station method of protected areas of the state.

ORGANIZATIONAL CHART





CHAPTER

III

WILDLIFE MANAGEMENT IN ODISHA

The biodiversity rich areas of the state have been declared as Protected Areas as per prevalent laws of the government. At present Odisha has one National Park, 19 sanctuaries, Two Tiger Reserves (Third one, Sunabeda, is under the process of notification). Besides this, there is one Biosphere Reserve and three Elephant Reserves. Proposals for declaring one more National Park, three Sanctuaries, one Tiger Reserve (Debrigarh) and one Biosphere Reserve Mahendragiri is under process. These lie in 2 Biogeographic zones and 3 provinces in the state, the details of which is given below:

Bio-geographic Zones / Province / Sub-Division and Location of Sanctuaries in Odisha

| Zone | Province | Sub-Division | Sanctuary located in this region |
|------------------|-----------------|--------------------------|----------------------------------------------------------------------|
| Deccan Peninsula | Eastern Plateau | Eastern-ghat | Baisipalli, Chandaka, Karlapat, Kotagarh, Lakhari, Nandankanan |
| | | Chhatisgarh-Dandakaranya | Debrigarh, Sunabeda |
| | Chhota-Nagpur | Garhjat Hills | Badrama, Hadgarh, Khalasuni, Kuldiha, Satkoshia, Similipal, Kapilash |
| Coasts | Eastern Coast | | Balukhand, Bhitarkanika, Gahirmatha, Nalabana |

The State Icons...

- State Tree** - Kadamba (*Neolamarckia cadamba*)
State Flower - Ashoka (*Saraca asoca*)
State Animal - Sambar (*Rusa unicolor*)
State Bird - Indian Roller (*Coracias benghalensis*)

National Heritage Animal – In October, 2010, Indian Government declared the Elephant an National Heritage Animal.

National Animal – The Tiger was accorded the status of National Animal in 1973 with the initiation of Project Tiger, a National Tiger protection programme. Before this, the National Animal was Lion.





National Aquatic Animal - Gangetic Dolphin was declared as the national aquatic animal in October 2010.

Wildlife conservation is the practice of protecting the wildlife along with animals & their habitat. It has become an increasingly important practice in order to mitigate the negative impact of human activity on their habitat. The major objectives of wildlife conservation are

1. Maintenance of essential ecological processes and life support systems.
2. Preservation of genetic diversity i.e. flora and fauna.
3. Sustainable utilization of species and ecosystems.

The strategies of Wildlife Conservation include *in-situ* and *ex-situ* conservation.

IN-SITU CONSERVATION

In-Situ conservation is on-site conservation or the conservation of genetic resources in natural population of plants or animal species in a habitat as well as to ensure the ongoing process of evolution and adaptation within their environment.

In the State of Odisha, the *in-situ* conservation is achieved in the following forms:

- a) Through the legal entities of protected areas like National Parks, Sanctuaries and Tiger Reserves.
- b) Through other Protected landscapes like Elephant Reserves and Biosphere Reserves.

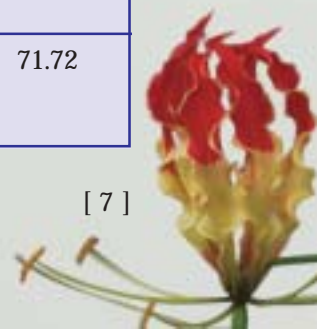
LIST OF NATIONAL PARKS AND SANCTUARIES OF ODISHA

National Parks

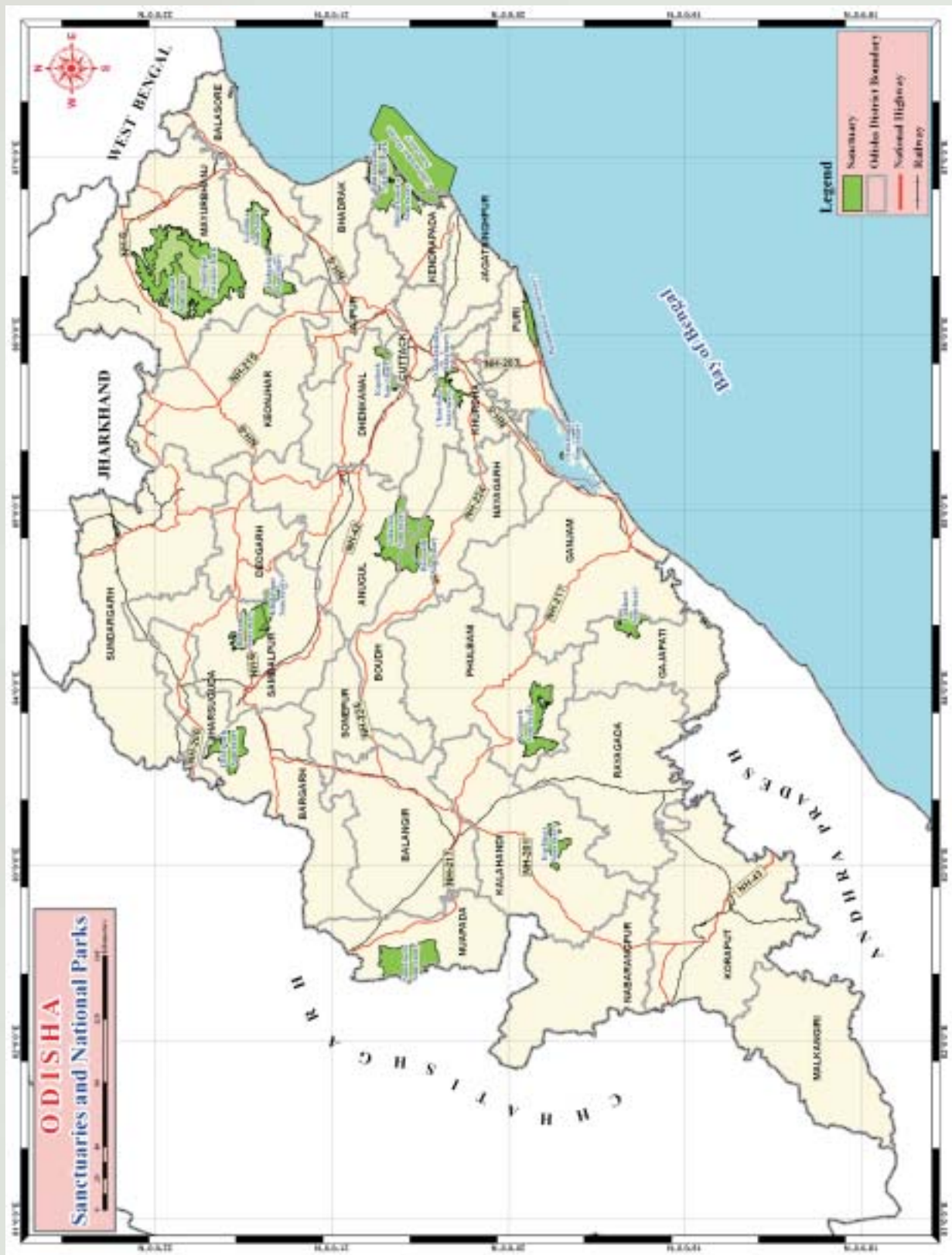
| Sl. No. | Name of National Park | Administrative control | Situated in the district | Notification No. & date | Area in Sq.kms. |
|---------|------------------------------------|-----------------------------------------------------|--------------------------|--------------------------|-----------------|
| 1 | Similipal (Proposed National park) | Field Director, STR, Baripada | Mayurbhanj | 18703 dt06.08.80 | 845.70 |
| 2 | Bhitarkanika (National Park) | DFO, Mangrove Forest Divn.(WL), Rajnagar/RCCF, BBSR | Kendrapara, Bhadrak | 19686 dt16.09.98 (Final) | 145.00 |

Wildlife Sanctuaries

| Sl. No. | Name of Sanctuary | Administrative control | Situated in the district | Notification No. & date | Area in Sq.kms. |
|---------|-------------------|------------------------------------------------------|--------------------------|-------------------------|-----------------|
| 3 | Bhitarkanika | DFO, Mangrove Forest Divn.(WL), Rajnagar /RCCF, BBSR | Kendrapara | 6958 dt22.04.75 | 672 |
| 4 | Balukhand-Konark | DFO, Puri (WL), Khurda/RCCF,BBSR | Puri | 15216 dt01.09.87 | 71.72 |



| | | | | | |
|----|---------------------|-----------------------------------------------------------|-----------------------|-----------------------|---------|
| 5 | Baisipalli | DFO, Mahanadi WL Divn/RCCF, Angul | Nayagarh | 25335 dt.06.05.81 | 168.35 |
| 6 | Badrama | DFO, Bamra(WL)/ RCCF, Sambalpur | Sambalpur | 23393 dt.17.12.87 | 304.03 |
| 7 | Chilika (Nalban) | DFO, Chilika WL Divn Balugaon/RCCF, BBSR | Puri | 23403 dt.17.12.87 | 15.53 |
| 8 | Chandaka-Damapara | DFO, Chandaka (WL) Divn/RCCF, BBSR | Khurda Cuttack | 13482 dt.10.06.88 | 193.39 |
| 9 | Debrigarh | DFO, Hirakd WL Divn/RCCF, Sambalpur | Bargarh | 2409 dt.08.02.85 | 346.90 |
| 10 | Gahirmatha (Marine) | DFO, Mangrove Forest Divn(WL), Rajnagar/ RCCF, BBSR | Kendrapara Bhadrak | 18805 dt.27.09.97 | 1435.00 |
| 11 | Hadgarh | DFO, Keonjhar (WL)/RCCF, Baripada | Keonjhar | 34113 dt.06.12.78 | 191.06 |
| 12 | Khalasuni | DFO, Bamra (WL) | Sambalpur | 584 dt.07.01.82 | 116.00 |
| 13 | Kudiha | DFO, Balasore (WL)/RCCF, Baripada | Balasore | 243 dt.04.01.84 | 272.75 |
| 14 | Nandankanan | Director, Nandankanan,BBSR | Khordha Cuttack | 20682 dt.03.08.79 | 4.37 |
| 15 | Similipal | DFO, Baripada/ Karanjia/RCCF, Baripada | Mayurbhanj | 30467 dt.03.12.79 | 2306.61 |
| 16 | Satkosia Gorge | DFO, Satkosia(WL) Divn/RCCF, Angul | Angul | 12727 dt.19.05.76 | 795.52 |
| 17 | Sunabeda | DFO, Sunabeda (WL) Divn, Nuapada/RCCF, Bhawanipatna | Nuapada | 10772 dt.10.05.88 | 600.00 |
| 18 | Karapat | DFO, Kalahandi (South)/RCCF, Bhawanipatna | Kalahandi | 24498 dt.15.10.92 | 147.66 |
| 19 | Lakheri-valley | DFO, Parlakhemundi /RCCF, Berhampur | Ganjam Gajapati | 2333 dt.08.02.85 | 185.87 |
| 20 | Kotgarh | DFO,Baliguda/ RCCF, Berhampur | Kandhamal | 30253 dt.03.12.81 | 399.05 |
| 21 | Kapilash | DFO, Dhenkanal/ RCCF, Angul | Dhenkanal | 5937 Dt.02.04.2011 | 125.50 |



**OTHER PROTECTED LANDSCAPES OF ODISHA****Tiger Reserve**

| Sl No. | Protected Area | Area in Sq.Km. | Notification No. and Date | District |
|--------|-------------------------|----------------|---------------------------------------------------------|------------------------------------|
| 1 | Similipal Tiger Reserve | 2750.00 sq.km | Notification No.8F(T)-9/2007/20801/F&E Dated 31.12.2007 | Mayurbhanj |
| 2 | Satkosia Tiger Reserve | 1136.70 sq.km | Notification No.8F(WL) 15/2018-26865 Dated 14.12.2018 | Angul, Cuttack, Nayagarh and Boudh |

Elephant Reserve

| | | | | |
|---|-----------------------------|---------------|------------------------------------------------------|--------------------------------------------|
| 1 | Mayurbhanj Elephant Reserve | 7043.74 sq.km | Notification No.8F(W) 42/2001/15806 Dated 29.09.2001 | Mayurbhanj, Balasore, Keonjhar, Bhadrak |
| 2 | Mahanadi Elephant Reserve | 1038.30 sq.km | Notification No.8F(W) 17/2002/10162 Dated 19.06.2002 | Angul, Cuttack, Nayagarh, Dhenkanal, Boudh |
| 3 | Sambalpur Elephant Reserve | 426.91 sq.km | Notification No.8F(WL) 10/2002/5840 Dated 27.03.2002 | Sambalpur, Sundargarh, Jharsuguda |

Biosphere Reserve

| | | | | |
|---|-----------------------------|------------|-----------------------------------------------|------------|
| 1 | Similipal Biosphere Reserve | 5569 sq.km | Notification No.8/96/11319 & Dated 20.05.1996 | Mayurbhanj |
|---|-----------------------------|------------|-----------------------------------------------|------------|

Barehipani Waterfall during Rainy season, Similipal Tiger Reserve



A. TIGER RESERVES

Tiger Reserves are visualized as breeding nuclei from which surplus tiger population would migrate to adjacent forests. Conceived under the Project Tiger launched in 1973, these areas aim to conserve the habitat for ensuring a viable population of Royal Bengal Tigers along with their prey base in their habitat.

SIMILIPAL TIGER RESERVE

Mayurbhanj District holds most of the tiger population of the state. Less than thirty tigers were surviving here in the year 1975. Sustained protection measures and management initiatives have resurrected the dwindling population of tigers. Recent census of tigers conducted by the use of both pugmark and camera trap techniques in the year 2018 shows presence of 28 tigers. Similipal is the only place in the world that houses the source population of melanistic tigers. Most of the tigers from North Similipal are moving to south Similipal that remains a better habitat, and the leopards, more adaptable than the tiger, are appearing in most of the habitats vacated by the tiger. These observations suggest that Similipal habitat may be reaching the maximum of its carrying capacity for tiger. The future seems dependent on adjoining forests of Hadgarh and Kuldiha that are better known as elephant habitats.

Tiger is only an indicator species but the project in Similipal has provided incidental conservation to the entire biota contained in these forests. The giant squirrel (*Ratufa indica*) of the upper tree canopy, the mugger crocodile (*Crocodylus palustris*) in the rivers of Similipal, and the 94-species of orchid flora are only a few that 'indicate' the positive impact of Project Tiger on the health of the ecosystem, and the prevailing microclimate of Similipal.

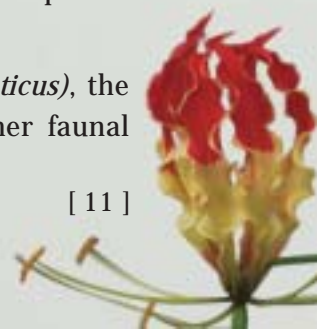
Major threats to Similipal centre round four lakh people living in the periphery and ten thousand people living inside it. Most of them 'use' Similipal to make a living, and the population continues to rise at a rate of 20% for each decennial period. Similipal presents an accurate reflection of the declining status of a habitat in the face of growth of human population. However major success has been achieved in minimizing the age old practice of "Akhand Shikar" prevalent among the local tribal community through organization of archery competitions with lucrative prize system.

SATKOSIA TIGER RESERVE

It encompasses the Satkosia Gorge Sanctuary constituted in May 1976 and the Baisipalli Sanctuary constituted in November 1981. The Tiger Reserve is rich in large cats and their prey along with wetland fauna (Gharial, Mugger, freshwater turtles, etc.) in the Mahanadi and rich biodiversity in the terrestrial ecosystem.

The Tiger Reserve is located in the Central Zone of Odisha and spreads over Angul, Cuttack, Nayagarh and Boudh districts covering an area of 1136.70sq.kms and comprises of Moist Deciduous Forests, Dry Mixed Deciduous Forest, Bamboo Brakes, Dry Tropical Riparian Forest and Teak Plantations.

Satkosia Gorge is the home of the most endangered Gharial (*Gavialis gangeticus*), the Mugger crocodiles (*Crocodylus palustris*) and a variety of freshwater turtles. Other faunal





elements include Tiger, Leopard, Wild dog, Gaur, Nilgai, Sambar, Spotted Deer, Barking Deer, Bear, Ratel, Jackal, Porcupine, Indian Hare, and Giant Squirrel etc. A viable but stabilized population of about 240 elephants thrives in this region which forms a part of the Mahanadi Elephant Reserve.

Both the resident as well as migratory birds are found in this sanctuary. The resident birds include the Hornbills, Peafowl, Kingfishers, Egrets, Cormorants, River Tern, Owls, Pigeons, Myna, Parakeets, Drongo, Doves, Woodpecker, Gulls, Golden Oriole, Vultures, Babbler, Barbets, Minivets, Sun Bird, Eagle, Crow Pheasants etc. The migratory birds include Brahminy Ducks, Bar Headed Geese etc. Recently the high vulnerable species of Indian Skimmers flocks have also been noticed in the area.

B. ELEPHANT RESERVE (ER) NETWORK

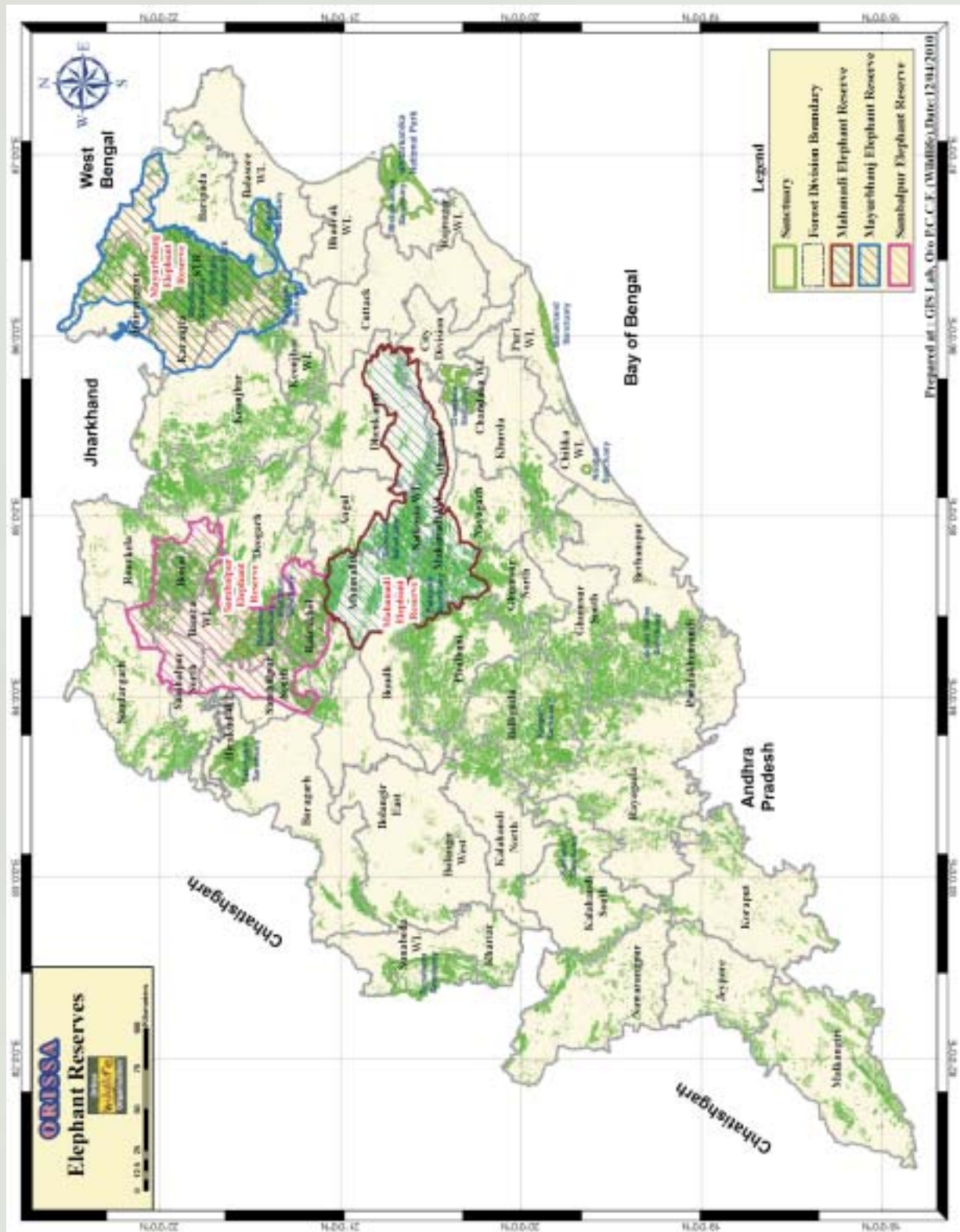
“Because the elephant requires much larger home range than any other terrestrial animal, it is usually one of the first species to suffer the consequences of habitat fragmentation and destruction.” Elephant Reserves offer hope to rejuvenate some of the fragmented habitats.

In the state of Odisha, where many forest habitat are shared by the tiger and elephant, the establishments of ERs have raised the hope to unify fragmented tiger habitats as well.

Three Elephant Reserves (ERs) namely the Mayurbhanj ER, Mahanadi ER and Sambalpur ER have been notified by the State of Odisha to conserve prime elephant habitats and to launch various management interventions. The extent of notified and proposed forest blocks in these three reserves is 4129 sq. km, and the geographical area covered by these three reserves is 8509 sq. km. In order to (a) include most of the remaining important elephant habitats within ERs, (b) redress the problem of rising number of cases of elephant depredation and (c) reverse the trend of habitat fragmentation and degradation, it is proposed (i) to expand the area of Mahanadi and Sambalpur ERs, and (ii) to constitute two new ERs called the Brahmani-Baitarani ER and the South Odisha ER. After declaration, the forest area comprised within ERs will be about 25% of the total forest area of the state; and about 90% of the elephants will be within these Reserves.



Elephants in Katrang, Satkosia Tiger Reserve





WILDLIFE ODISHA 2019

MAYURBHANJ ELEPHANT RESERVE

Constituted : September 2001

Location

Districts : Portions of Mayurbhanj, Balasore, Bhadrak and Keonjhar
Forest Divisions : Similipal Tiger Reserve, Karanjia, Baripada, Rairangpur, Balasore WL, Keonjhar WL Division
Latitude North : $21^{\circ} 10'$ to $22^{\circ} 35'$
Longitude East : $85^{\circ} 45'$ to $87^{\circ} 05'$
Area : 7043.74 sq. km

MAHANADI ELEPHANT RESERVE

Constituted : June, 2002

Location

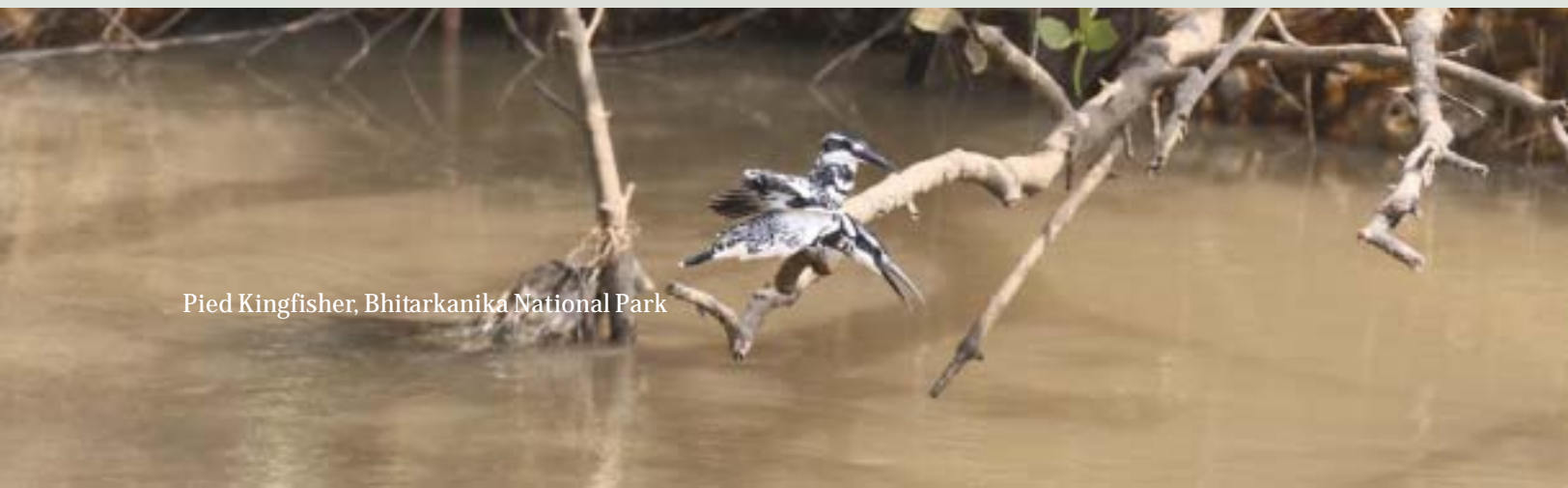
Districts : Angul, Cuttack, Nayagarh, Boudh, Dhenkanal
Forest Divisions : Portions of Angul, Athagarh, Cuttack, Nayagarh, Boudh and Dhenkanal, and entire Satkosia Wildlife Division, Mahanadi Wildlife Division and Athamallik Forest Division.
Latitude North : $20^{\circ} 10'$ to $21^{\circ} 5'$
Longitude East : $84^{\circ} 15'$ to $85^{\circ} 58'$
Area : 1038.30 sq km

SAMBALPUR ELEPHANT RESERVE

Constituted : March 2002

Location

Districts : Sambalpur, Sundargarh, Jharsuguda
Forest Divisions : (Parts) of : Bamra (Wildlife), Bonai, Sambalpur, Jharsuguda, Rairakhol
Latitude North : $20^{\circ} 5'N$ and $22^{\circ} 12'$
Longitude East : $83^{\circ} 13'E$ and $84^{\circ} 58'$
Area : 426.91 sq km



Pied Kingfisher, Bhitarkanika National Park



C. BIOSPHERE RESERVE

Biosphere Reserve is intended to preserve genetic diversity in representative ecosystems and provide opportunities for research on ecosystem processes in nature. Criteria for selection of Biospheres include representativeness, naturalness, biological diversity and potential as effective conservation unit.

Similipal Biosphere Reserve

Similipal and adjoining area comprising of 5569 sq.km. was declared as a Biosphere Reserve by Government of India on the 22nd June, 1994 with the objectives of

- Conservation of the area as a representative ecosystem of the “Mahanadian Bio-geographic Region”.
- Provision of long term in-situ conservation of genetic diversity
- Promotion of basic and applied research and monitoring; and
- Dissemination of experience for education and training.

Similipal Biosphere Reserve is intended to fulfill three basic objectives:

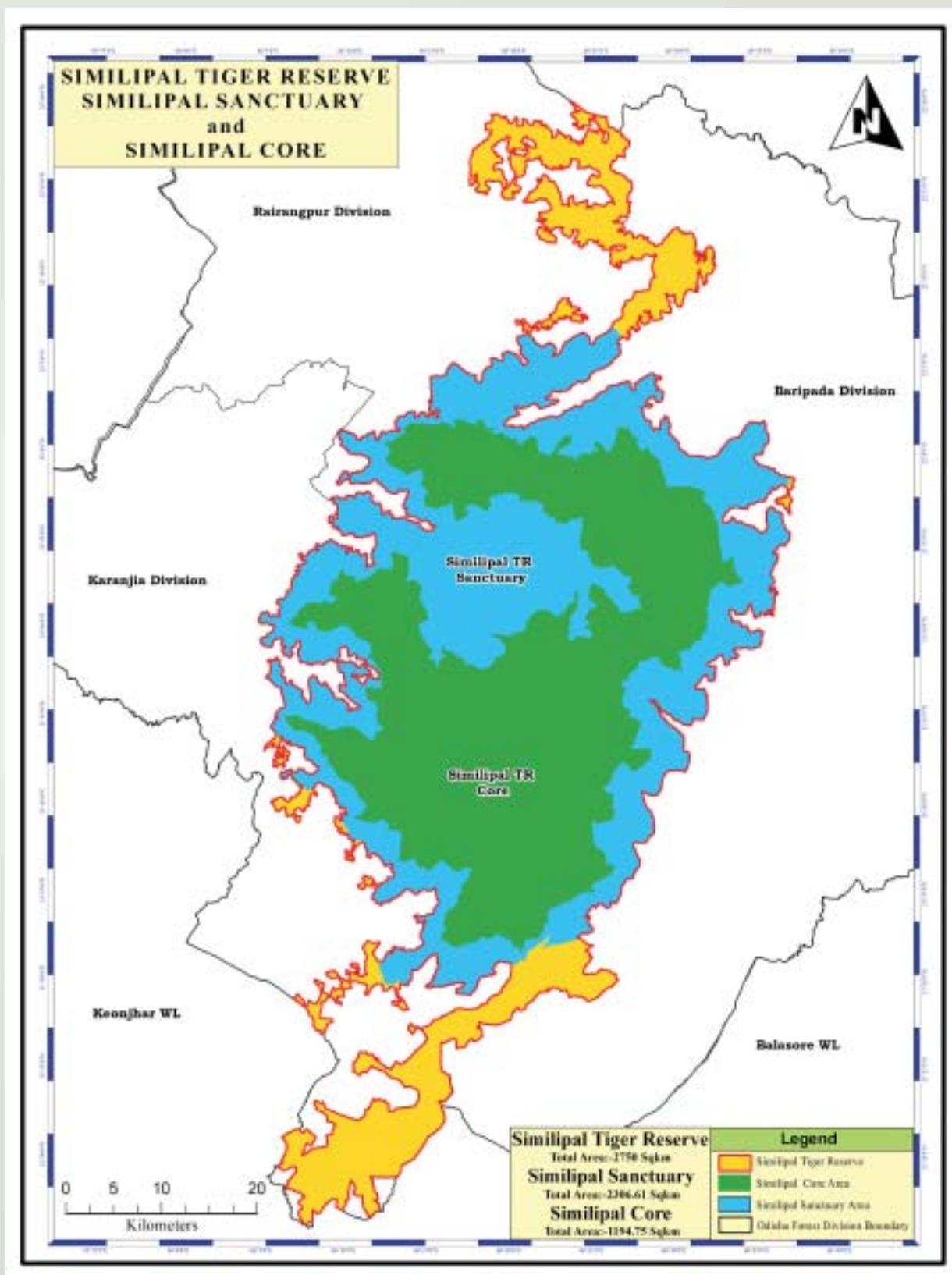
- Conservation of biodiversity (genetic, species and ecosystem diversity) and landscapes.
- Eco-development of villages and human habitations within the biosphere; improvement of livelihood and income opportunities for the villagers in the immediate vicinity of Similipal, while reducing or eliminating adverse impact on the ecosystem resources of Similipal.
- Provide the base and benchmark for long term ecological studies, environmental education, and research into local, national and global issues of conservation and sustainable development.

These functions / objectives find expression in the Zonation of the Biosphere into core, buffer and transition areas.

Statistics about Similipal Biosphere Reserve

| | | |
|---|--------------------------------------------------------------------------|------------|
| A | Area of Biosphere Reserve | 5569 sq.km |
| B | Zonation | |
| | (i) Core area | 845 sq.km |
| | (ii) Buffer area | 2129 sq.km |
| | (iii) Transition area | 2595 sq.km |
| C | Villages | |
| | (i) No. of Villages in the Core area | 1 |
| | (ii) No. of villages in the Buffer area | 64 |
| | (iii) No. of villages in the Transition area | 1200 |
| D | Population | 3.5 lakh |
| | (i) Tribal population | 73.44% |
| | (ii) SC population | 5.21% |
| | (iii) Other population | 21.35 |
| E | Common Tribes: Bhunjia, Bathudi, Kolha, Ganda, Santhal, Khadia, Mankadia | |





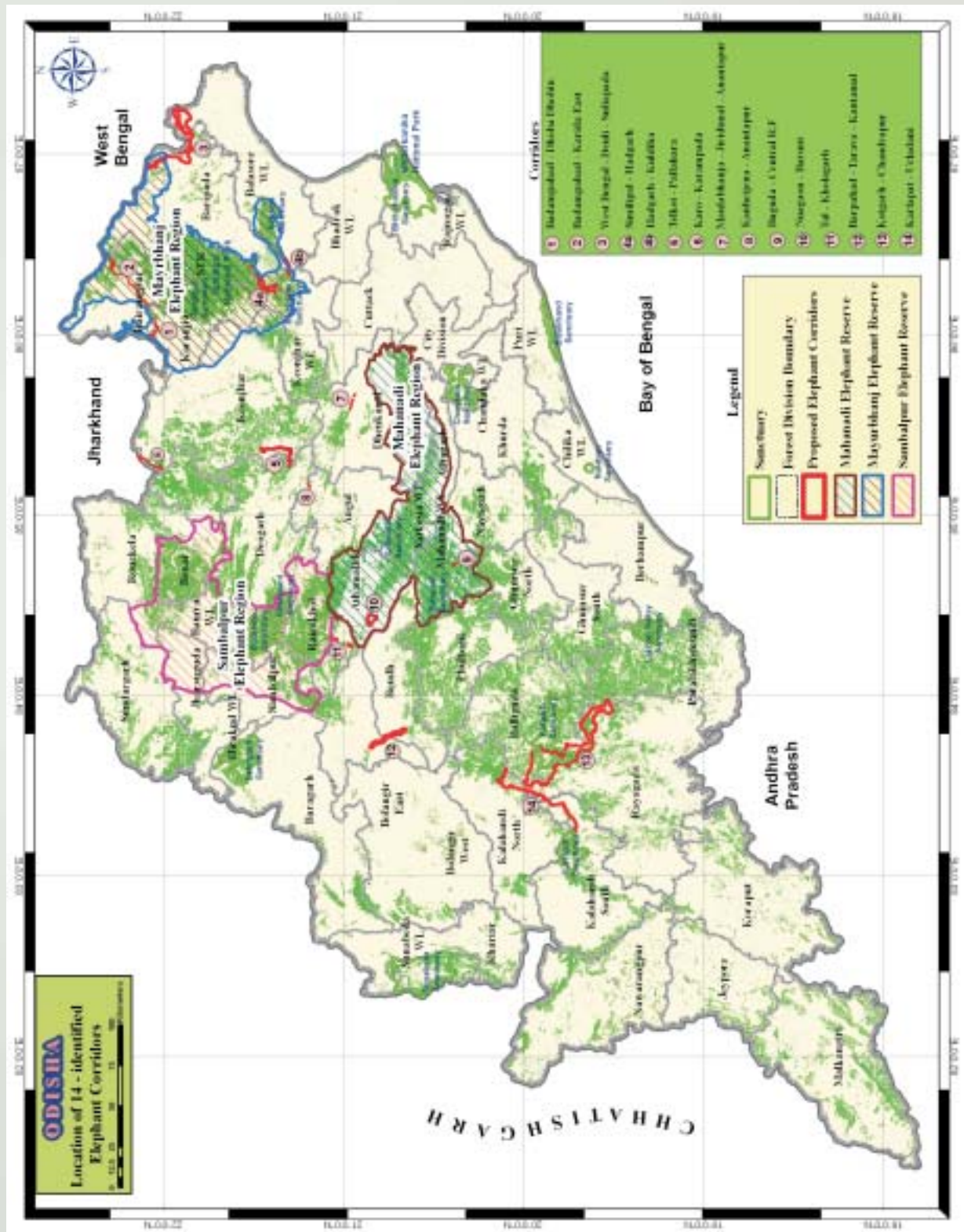


D. IDENTIFIED ELEPHANT CORRIDORS IN ODISHA

There are 14 numbers identified elephant corridors present in the state of Odisha. These corridors are given below:

| Sl No. | Name of the Corridor | Extends over District | Name of the Division | Length of the corridor km | Width of corridor km | Total area Sq km |
|--------|----------------------------------------------------------------------|-------------------------------------|-------------------------------------|---------------------------|----------------------|------------------|
| 1 | Badampahar (Mayurbhanj)-Dhobadhobin (Jharkhand) INTERSTATE | Mayurbhanj | Karanjia, Rairangapur | 16 | 0.5-1.5 | 24.3 |
| 2 | Badampahar (Mayurbhanj)-Karida (Jharkhand) INTERSTATE | Mayurbhanj | Rairangapur | 43 | 0.2-2.6 | 26.09 |
| 3 | W. Bengal-Deuli-Suliapada (Passage) INTERSTATE | Mayurbhanj, Balasore; (West Bengal) | Baripada | 72 | 0.1-0.7 | 39.5 |
| 4 | Similipal-Hadagarh-Kukiha INTER-DISTRICT | Mayurbhanj; Keonjhar; Balasore | Baripada, Balasore WL, Keonjhar WL | 41.7 | 0.7-3.5 | 91.39 |
| 5 | Telkoi-Pallahara INTER-DISTRICT | Keonjhar; Angul | Keonjhar, Deogarh | 30.4 | 0.2-0.6 | 13.24 |
| 6 | Karo (Keonjhar)-Karampada (Saranda, Jharkhand) INTERSTATE | Keonjhar; (Jharkhand) | Keonjhar | 15 | 0.3-2.3 | 17.3 |
| 7 | Maulabhanja – Jiridamali-Anantapur INTRA-DISTRICT | Dhenkanal | Dhenkanal | 6.5 | 0.25-0.28 | 1.55 |
| 8 | Kahnejena-Anantapur INTER-DISTRICT | Angul; Dhenkanal | Angul Dhenkanal | 6.6 | 0.4-1.1 | 5.22 |
| 9 | Buguda-Central RF INTRA-DISTRICT | Nayagarh | Nayagarh | 2.6 | 0.8-0.6 | 0.76 |
| 10 | Nuagaon-Baruni INTRA-DISTRICT | Angul | Athmallik | 4.5 | 0.4-4.6 | 20.7 |
| 11 | Tal-Kholgarh INTRA-DISTRICT | Sambalpur | Rairakhol | 6.3 | 0.5-0.08 | 4.56 |
| 12 | Barpahad-Tarava-Kantamal INTER-DISTRICT | Subarnapur, Boudh | Subarnapur, Boudh | 24.2 | 0.38-1.5 | 21.7 |
| 13 | Kotagarh-Chandrapur INTER-DISTRICT | Kandhamal; Rayagada | Balliguda, Rayagada | 77 | 2.0-22.4 | 575.4 |
| 14 | Karapat-Urakdani INTER-DISTRICT | Kalahandi; Rayagada | Kalahandi(S), Kalahandi(N) Rayagada | 75 | 0.2-0.5 | 28.9 |
| Total | | | | 421 | | 870.6 |







MANAGEMENT AND ENFORCEMENT ACTIVITIES

- Management Plan for all the protected areas has been prepared to facilitate scientific management of the Sanctuaries and National Parks.
- Digitized maps for the Sanctuaries and National Parks on GIS domain are under preparation.
- A land scape approach is being adopted to include the critical wildlife habitats, buffer zones and corridors.
- Intensive patrolling taken up in the areas with wildlife concentration to curb offences against wild animals.
- Habitat conservation measures such as preservation of rain water by erecting W.H.S. to provide water during lean period, forest regeneration through incentive based control of forest fire have also been introduced.
- Specific incentive scheme to motivate local public against forest fire, poaching etc. have also been introduced with reward and incentive support.
- Habitat improvement is done by providing water bodies, fodder plantation, protection from fire, meadow development etc.
- Relocation of villages located inside Protected Areas. Vacated areas are developed into grass lands. These grass lands are crucial to sustenance of healthy prey base leading to good predator population. Relocated villages also benefit from availability of basic facilities and access to government schemes.
- Regular patrolling & monitoring of wild animal as well as poachers.
- Establishment of crime cell to collect intelligence regarding wildlife crime & proactive measures to prevent such crimes.



Melanistic Tiger, Similipal Tiger Reserve



Interstate meeting at Raipur



Detusking at Talcher





Strip Cutting of meadow in Similipal Tiger Reserve



Meadow Strip Cutting in Kankadajodi, Similipal Tiger Reserve



**WILDLIFE OFFENCE CASES**

Protection is one of the prime mandate of wildlife organization. Several field forest staff, special squads and many communities devote their prime time in protection of wildlife. The details of the wild life Offence cases booked and accused arrested are as follows:

**Wildlife Offence cases booked and accused arrested
(2011-12 to 2018-19)**

| Year | Animal | No of OR cases booked | No of Accused Arrested & Forwarded |
|---------|--------------|-----------------------|------------------------------------|
| 2011-12 | Elephant | 8 | 32 |
| | Other animal | 54 | 159 |
| | Total | 62 | 191 |
| 2012-13 | Elephant | 12 | 23 |
| | Other animal | 104 | 174 |
| | Total | 116 | 197 |
| 2013-14 | Elephant | 15 | 37 |
| | Other animal | 158 | 318 |
| | Total | 173 | 355 |
| 2014-15 | Elephant | 7 | 29 |
| | Other animal | 180 | 361 |
| | Total | 187 | 390 |
| 2015-16 | Elephant | 8 | 56 |
| | Other animal | 230 | 649 |
| | Total | 238 | 705 |
| 2016-17 | Elephant | 7 | 14 |
| | Other | 262 | 523 |
| | Total | 269 | 537 |
| 2017-18 | Elephant | 8 | 11 |
| | Other | 248 | 463 |
| | Total | 256 | 474 |
| 2018-19 | Elephant | 21 | 38 |
| | Other | 310 | 1236 |
| | Total | 331 | 1274 |

Pangolin





CHAPTER

IV

CAPTIVE ANIMAL MANAGEMENT

Indian mythology, history and literature are replete with accounts of wild animals patronized by kings, emperors and nobles for work, warfare and entertainment. Scriptures also record the existence of a Deer Park where Lord Buddha gave his first discourse. In India, the zoo movement received an impetus after independence.

“Zoos” or “Zoological Gardens/Parks” possess and manage a collection primarily of wild (non-domesticated) animals. In the arena of wildlife conservation, zoos play a significant role. The zoos provide environmental education, eco-system awareness, and nature interpretation. They facilitate research on wild animals maintained in captivity and help in maintaining the gene pool of the critically endangered species. They also serve as rescue centres for straying wild animals rescued from near by human habitations.

Presently, there are one large Zoo, three small Zoos and eight Mini Zoos in the state that enjoy the recognition from Central Zoo Authority(CZA). Nandankanan is the large Zoo. Three mini zoos have been upgraded to the status of small zoos are Wild Animal Conservation Centre (WAAC) at Motijharan in Sambalpur District, Kapilash in Dhenkanal District and Indira Gandhi Park Zoo & Deer Park, Rourkela in Sundargarh District. The other Mini Zoos which are managed by Forest Department are Kuanria in Nayagarh District, Taptapani in Ganjam District, Papadahandi in Nawarangpur District, Harishankar in Bolangir District, Gharial Research and Conservation Unit at Tikarpada in Angul District.

There are four Deer Park / Mini Zoos in the state that are owned by other agencies- Rourkela Small Zoo in Sundargarh District managed by SAIL, a Govt. of India PSU, Deer Park/ Mini Zoo at Bhanja Vihar, Berhampur University in Ganjam District, Mini Zoo, Sunabeda in Koraput District managed by Hindustan Aeronautics Limited (HAL) a Govt. of India PSU and Municipal Corporation Mini Zoo, Cuttack in Cuttack District. Currently the deer park at Berhampur University has been derecognized by CZA and efforts are on for making due compliance for getting back the recognition or translocating the deer to other place.

Zoos in India are regulated by Central Zoo Authority, Govt. of India under the provisions of Section-38H of the Wildlife (Protection) Act, 1972 and are guided by the National Zoo Policy, 1998. The Government of India have formulated Recognition of Zoo Rules, 2009, and fixed standards and norms for management of Zoos in the country. Central Zoo Authority (CZA), which is a statutory body under the Ministry of Environment & Forests, Govt. of India oversees the functioning of Zoos in the country and provides technical guidance and assistance as assigned under Section 38C of the Wildlife (Protection) Act, 1972. The CZA also regulates



minimum standards and norms for upkeep and health care of animals in Indian Zoos and controls mushrooming of unplanned and ill-conceived Zoos which used to crop up in the country as adjuncts to public parks, industrial complexes and waysides.

Standards and norms for animal maintenance, housing and health care need to be given due priority for ensuring quality life to captive animals of the zoo. For this purpose regulatory as well as monitoring mechanisms have been prescribed. State Wildlife Organization with financial and technical support from the Central Zoo Authority endeavors to maintain standards and quality of the Zoos, so that the very purpose of operating Zoos is achieved.

NANDANKANAN ZOOLOGICAL PARK

Nandankanan Zoological Park is one among premier large Zoos of India located amidst beautiful natural surroundings and spreads over an area of 3.62 sq. km. The Zoological Park was dedicated to public on 29th December, 1960. The undulating topography with natural moist deciduous forest, water bodies and enchanting landscape provides the zoo inhabitants an appropriate ambience to live in harmony with nature.

The Mission of the Park is to achieve the distinction of an outstanding zoo through World Class Conservation, Education, Research and Exciting Visitor Experiences by connecting people to biodiversity conservation.

- 15, 01,443 Nos. of visitors had their footfall at Nandankanan during the year 2019 (From 1st January 2019 to 10th August 2019).
- An amount of Rs. 8, 27, 14,679.5 /- has been collected during the year 2019 (From 1st January 2019 to 10th August 2019) towards revenue.

MISSION

To achieve the distinction of an outstanding Zoo through World Class Conservation, Education, Research and enriching visitor experiences by connecting people to wildlife and ex-situ conservation.

NANDANKANAN IS KNOWN FOR

- Birth of white tiger from normal coloured parents in the year 1980. And Melanistic Tiger cubs in 2014
- White Tiger Safari established in 1991.
- First captive breeding programme for Gharial in 1980.
- First Indian Zoo to become a member of WAZA and to breed Rattle and Pariah Kite.
- Puri-New Delhi Superfast Express has been named as Nandankanan Express. Nandankanan is the first Zoo in the country after which an express train has been named.
- Second largest heronry of the State for Open-billed Storks (more than 12,000).





- Has a captive fodder farm (over 33 Acres) and a Slaughter house to cater the dietary needs of carnivorous Zoo animals.
- Has the largest pool for housing Gharials and Hippopotamus.
- Prioritizing awareness, education and training programmes on wildlife conservation and research.
- Nandankanan is not only a Zoo but also an ideal centre for research, education and ecotourism.
- After successful mating of zoo bred tigress 'Megha' with wild tiger 'Nandan' in Nandankanan, it was the day to remember when tigress Megha gave birth to two cubs on 20.04.2016 as Nandankanan got wild tiger gene for the first time in its history.
- Nocturnal house at Nandankanan established over 5000 sq.m of area is intended to exhibit nocturnal animals of regional importance in spacious naturalistic enclosures simulating their natural habitat with species specific enrichment to fulfill their biological needs.
- Nandankanan Biological Park is the first of its kind among all zoos of India to display carnivorous plants. Carnivorous Plant garden is established over 800 sq.ft area in State Botanical Garden, Nandankanan with an intention to exhibit carnivorous plants of regional importance.

CZA Recognition:

Large Zoo/Notification No.FNo.19-64/92-CZA(212) (Vol.IX) (BKG) /2928 dt:13.04.2018

The other various Ex-situ Conservation Sites in the State of Odisha are given below:

KAPILASH SMALL ZOO

Location

This Small Zoo is situated at the foot hills of Kapilash Reserve Forest from where visitors can travel 0.5 Km. by Ghat road to see Lord Chandrasekhar at the hill top and view the scenic beauty of the forest and nearby natural water body.

This Zoo is just 16Km. away from Dhenkanal District Headquarters, 55Km from Cuttack and 85Km away from the state capital, Bhubaneswar. This is well communicated by road from Dhenkanal, Cuttack and Bhubaneswar

History

Kapilash Zoo in Dhenkanal district was established in the year 1979 and initially it covered an area of 5 Ha. Later the area was extended to 26.64ha., which includes 11.30ha. of Debottar land and 15.34 ha. of Kapilash Reserve Forest. This Zoo provides recreational and amusement facilities to visitors. There is one Elephant rescue centre in "off exhibit" area of the Zoo. One Science Park exists adjoining to the zoo where picnic is being allowed.





Administrative Control

It is under the administrative control of the Divisional Forest Officer, Dhenkanal Forest Division.

CZA Recognition

Small Zoo/Notification No. F.No.19-106/92 CZA(211)(AK)/2708/2016 dated 26.09.2016

WILD ANIMAL CONSERVATION CENTRE, MOTIJHARAN

Location

The Wild Animal Conservation Centre, Motijharan is situated between 21° 28' 04" - 21° 28' 32" North latitude and 83° 59' 10" - 83° 59' 48" East longitude in Sambalpur district. It is located inside the Motijharan Reserve Forest locally known as "Brookshill" which is a picturesque spot inside Sambalpur town. It is a low lying hillock with moderate vegetation on north-western side. This Small Zoo is 8 Km. from the Sambalpur Railway Station and only 3 Km. away from N.H.53.

History

The Wild Animal Conservation Centre, Motijharan at Sambalpur made its beginning as a "Deer Park" in the year 1980. Initially it was established over an area of 6 ha. At present, it





is designated as a Small Zoo by the Central Zoo Authority. Highest peak is 202m above MSL. It has been developed as a recreation centre, a centre for conservation of rescued wild animals as well as a centre for creating awareness amongst the local public.

Administrative Control

It is under the administrative control of Hirakud Wildlife Division with Headquarters at Sambalpur.

CZA Recognition

Small Zoo/Notification No.F.No.19-3/93-CZA(201)(BKG)/2679/ 2016 date: 23.09.2016

HARISHANKAR MINI ZOO

Location

Harishankar Deer Park, now designated as a Mini Zoo is located on the foot hills of Gandhamardan in Bolangir district. It is a picturesque spot and rich with floral and faunal diversity. It is located at a distance of 13 Km. from the Khaparkhol Block Headquarters; 43 Km. from the Patnagarh Sub-Divisional Hqrs.; 83 Km. from the Balangir District Headquarters; 30 Km. from the Harishankar Railway Station and 50 Km. from the State Highway / Padmapur Air strip.

History

The Deer Park was created in the year 1971 with eight number of Spotted deer (*Axis axis*). It covers an area of 1.5 ha. and is located in the village Forest area of the Khaparakhhol Tehsil. A perennial waterfall, being a source of natural fresh water is an added attraction of this spot. Besides, the temple of Lord Harishankar is situated very close to the Mini Zoo.

Administrative Control

It is under the administrative control of the Divisional Forest Officer, Bolangir Forest Division.

CZA Recognition

Mini Zoo/Notification No.F.No.19-1/93-CZA (194) (AK)/2666/2016 Date: 22.09.2016

TAPTAPANI MINI ZOO

Location

It is located adjacent to State High-way No.17 (Berhampur to Rayagada) in Ganjam district at a distance about 55 Km from Berhampur. The nearest Railway Station is Berhampur i.e. on the Howrah-Chennai main line at a distance of about 55 Km. It is connected by air from Bhubaneswar which is about 250 Km away.

History

In the year 1986, a Deer Park was established at Taptapani in Ganjam district, which is now recognised as a Mini Zoo. It is a prominent picturesque spot because of an existing hot





water spring nearby. The existing area of the Zoo is 4.00 ha. The main objective to have a Mini Zoo in this Panoramic landscape is to provide recreational facility and create awareness among the public about conservation of wild animals.

Administrative Control

It is under the administrative control of the Divisional Forest Officer, Paralakhemundi Forest Division.

CZA Recognition

Mini Zoo / Notification No.FNo.19-107/92-CZA(196) (NS)/8077 Date: 30.11.2015

KUANRIA MINI ZOO

Location

The Mini Zoo is situated at Kuanria on NH-224 in Nayagarh district, which is 7Km. from Dasapalla town. It is at a distance of 127Km. from Bhubaneswar Railway station and Biju Patnaik Airport by road.

History

The Deer Park at Kuanria was established in the year 1985 with only eight Spotted deer (*Axis axis*) in an area spreading over 06 ha. It is situated on the foot hills of Baisipalli Wildlife Sanctuary, which is at present a part of Satkosia Tiger Reserve. The Kuanria Minor Irrigation Dam is adjacent to this Mini Zoo.

Administrative Control

It is under the administrative control of the Divisional Forest Officer, Mahanadi Wildlife Division.

CZA Recognition

Mini Zoo/Notification No. F.NO.19-105/92-CZA(195)(AK)/2669/2016 dated 22.09.2016

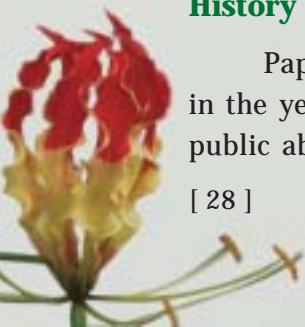
PAPADAHANDI MINI ZOO

Location

The Zoo is located in Nabarangpur district on the side of N.H.201 i.e. the road from Boriguma to Bargarh at a distance of 10km from Nabarangpur and 1km from Papadahandi. It is 50km away from Jeypore Railway Station and 53km from the Airstrip at Jeypore. It is located inside the Papadahandi Reserve Forest having dense sal growth and it covers an area of 1.0Ac.

History

Papadahandi Mini Zoo in Nabarangpur district was initially established as a “Deer Park” in the year 1986. The main objective to have this facility at Papadahandi is to educate the public about conservation of wildlife and to provide recreational facilities.





Administrative Control

It is under the administrative control of the Divisional Forest Officer, Nabarangapur Forest Division.

CZA Recognition

Mini Zoo/Notification No.F.No.19-112/92-CZA(197) (NS)/1498/2019 Date: 26.09.2019.

GHARIAL RESEARCH AND CONSERVATION UNIT (GRACU)

Location

The GRACU, Tikarpada is 220 km from Bhubaneswar, the capital city of the state. From the national highway No. 42, one has to reach Angul and from there proceed to Pampasar, which is the main entry gate of the Tiger Reserve. Bhubaneswar is accessible by Air, Rail and road. The Headquarters of the Satkosaj Wildlife Division which manages the Centre is located at Angul, which is 60 km from GRACU.

History

In mid 70s, Govt. of India with technical assistance from Food and Agricultural Organization (FAO) of the United Nations Development Programme (UNDP) initiated





“Crocodile Conservation & Management Programme” in Odisha and also in other parts of the country to save the dwindling population of the Gharials as well as two other crocodilian species (Saltwater crocodiles, *Crocodylus porosus* and Mugger crocodiles, *Crocodylus palustris*). Under this Conservation programme, the **Gharial Research and Conservation Unit (GRACU)** was established by the Odisha Forest Department in March 1975 at Tikarpada adjacent to the Satkosia Gorge.

Administrative Control

It is under the administrative control of the Divisional Forest Officer, Satkosia Wildlife Division.

CZA Recognition

Mini Zoo/Notification No.FNo.19-46/93-CZA(200) (BKG)/ 1119/2017 Date: 16.06.2017.

MINI ZOO AT BERHAMPUR UNIVERSITY

Location

The Mini Zoo is located at a distance of 12 Km away from the Berhampur town and 6 Km away from the Gopalpur town. It is well connected with the National Highway No.16 from Chhatrapur.

History

The Deer Park was established in the campus of Berhampur University in Ganjam District in the year 1989. The main objective to have this facility at the University campus is to provide recreational facility and create awareness about conservation of wildlife, primarily among the students and visiting public.

Administrative Control

It is under the administrative control of the Berhampur University.

CZA Recognition

Notification No.FNo.19-103/93-CZA(198) (M)/2376 Dated: 12.03.2013 cancellation of recognition communicated by CZA.

MINI ZOO AT HINDUSTAN AERONAUTICS LTD. (HAL), SUNABEDA, KORAPUT

Location

This Mini Zoo is well connected to the District Head Quarters by NH-43. The nearest town / cities are Koraput: 20Km.; Jeypore (Odisha): 40Km.; Vijayanagaram (AP): 120Km.; Visakhapatnam (AP): 157Km., Jagadalpur (CG): 130Km. and (vi) Raipur (CG): 430 Km.

History

HAL Deer Park covering an area of 2.05 ha. was established near HAL Nursery in Sector VII of HAL Township, Sunabeda in the year 1979.





Administrative Control

It is under the administrative control of the M/s. HAL, Engine Division, Sunabeda, Koaraput

CZA Recognition

Mini Zoo/Notification No.F.No.19-42/93-CZA(209) (M)/3063 Date: 24.06.2013

INDIRA GANDHI PARK ZOO & DEER PARK, ROURKELA

Location

Rourkela is well connected through Railway situated at Howrah-Mumbai rail route. Nearest airport is Jharsuguda. The zoo is 2 km from Rourkela Railway Station and situated at ring road of the city.

History

While establishing a Botanical Garden in early 60's, a couple of Spotted deer and a variety of birds, in small number, were exhibited as a feature of the garden. The Botanical garden was subsequently renamed as Indira Gandhi Park Zoo in 1988, which covers an area of 50 acres (approx). Later some rare animal and bird species were added as exhibits to this facility.

Administrative Control

Indira Gandhi Park Mini Zoo is under the administrative control of Steel Authority of India Ltd., Rourkela Steel Plant.

CZA Recognition

Small Zoo/ Notification No.F.No.19-155/93 CZA(199) (VolIII) (M)/4096 Date: 07.01.2014

MUNICIPAL MINI ZOO, CUTTACK

Location

The Municipal Corporation Deer Park, now designated as a "Mini Zoo" is located at Tulasipur (Ward No.13) on the bank of River Mahanadi adjacent to the Ring road of Cuttack. It is well connected with road. The Cuttack Railway station is 10 Km. away from this Mini Zoo. It is 30 Km away from the State capital and Biju Patnaik Airport, Bhubaneswar.

History

In the year 1981, on local self Government day (31.08.1981) a Deer Park was established by the Cuttack Municipality. It covers an area of 2 acres.

As per the stipulation of Central Zoo Authority, Ministry of Environment & Forests, Govt. of India, the District Administration has been requested to provide a patch of suitable land extending over an area of 5ha. in Sector-8 of CDA at Bidanasi to accommodate the growing population of deer, improvement of the facility and better management of this Mini Zoo.





Administrative Control

It is under the administrative control of the Cuttack Development Authority.

CZA Recognition

Mini Zoo/Notification No.F.No.19-206/93-CZA(204) (NS)/ 6970 Date: 17.04.2015

EXCHANGE OF ANIMALS

Two nos of Grey Wolf (1:1) were received from Chamarajendra Zoological Park, Mysore in exchange with three nos of Mouse Deer during September, 2018.

Grey Wolf





12 nos. of Long Billed Vulture were received from Gandhi Zoological Park, Gwalior on 25.11.2018

EDUCATION AND AWARENESS

A. WORLD WETLAND DAY 2019



B. WORLD PANGOLIN DAY 2019





C. WORLD WILDLIFE DAY 2019



D. INTERNATIONAL TIGER DAY 2019



E. WORLD ELEPHANT DAY 2019





F. WILDLIFE WEEK CELEBRATION 2018



G. WORLD ENVIRONMENT DAY 2019





H. MASS CLEANING DAY 2019 (SWACHH BHARAT)



On First Monday of every month general Zoo Cleaning Day is being observed, where all the staffs of Nandankanan participate.

I. 59TH FOUNDATION DAY 2018





RESEARCH IN NANDANKANAN

PANGOLIN CONSERVATION BREEDING CENTER, NANDANKANAN

Indian pangolin (*Manis crassicaudata*) is one of the eight living species of pangolins of the world. They are toothless, myrmecophagus (feeding on ants and termites) and burrowing mammals. Habitat loss and poaching for their meat and scales for use in traditional medicine are major threats to pangolins and made these unique mammals, the most trafficked mammals of the world.

A Pangolin Conservation Breeding Center (PCBC) was established in 2008 in the park with an objective of scientific management and breeding of Indian pangolins. The centre is the only conservation breeding centre for this endangered species. It was operational in April, 2009 with a founder stock of six pangolins (3M:3F). Pangolins were housed in naturalistic soil-substrate enclosures of 4.8 m × 4.2 m × 3.0 m dimensions, with hollow wooden logs, dry tree branches, and saucer shaped pool as enrichment materials. The daily husbandry routine consisted of enclosure cleaning, water replacement, feeding and health monitoring. The pangolins were microchipped with a passive integrated transponder (PIT) for their individual identity. Since pangolins are nocturnal and intermittently active, their behaviours were recorded through digital video recording system assisted by infrared enabled CCTV cameras. The major achievements of the centre include standardization of dietary husbandry, health care protocols and birth of six pangolins at the centre. Studies in the centre are also helping to understand their biology which is difficult to study in the wild as these elusive animals have nocturnal and burrowing habits. From the past experiences and lessons learnt, an extension of enclosure complex is being created with improved facilities to aid better management of the pangolins.

Pangolin





VULTURE CONSERVATION BREEDING CENTRE

Establishment: The Central Zoo Authority (CZA) had taken initiative in establishing five vulture conservation breeding centres in the zoos at Junagadh, Bhopal, Hyderabad and Bhubaneswar in 2007 and at Ranchi in 2009. Accordingly, a Vulture Conservation Breeding Centre has been constructed at Nandankanan Biological Park, Bhubaneswar during the year 2011-12 in an off-exhibit area of 0.3 acres surrounded by seven acres of undisturbed forested land with financial assistance from CZA.

Objectives: The centre was established with objectives to develop protocol for captive management and breeding of long billed vultures for reintroduction and release in to wild and to generate awareness about the conservation need of the vultures and their role in the ecosystem.

Funding: Financial assistance was provided by Central Zoo Authority, New Delhi. A total of Rs 57.84 lakhs has been utilized to establish the centre.

Procurement of vultures: The founder populations are twelve numbers of long billed vultures procured from Gandhi Zoological Park, Gwalior on 27.11.2018.

Identification of Vultures: All the vultures are marked with leg bands for individual identity.

Different Aviaries of VCBC: The centre presently has one colony aviary (100'X40'X20'), two nursery aviaries (10'X12'X8').

The aviaries are large enough for the vultures to perform wing exercises by flying from one end to another and to feed communally on carcasses, exactly as they do in the wild. It also has species specific enclosure enrichments like naturalistic nesting platforms and nest baskets, adequate perches in vertical and horizontal positions from the walls and water pools. All the perches are wrapped with coir ropes to prevent bumble foot disease. Aviary doors open to galleries having double door protection which provides birds form accidental escape. The chain-linked mesh roof is having an inner lay of netlon with one feet gap in between to protect the birds from dashing against the roof.

Feeding: They are provided with 2kg of buffalo meat with bone per vulture twice a week. The buffalo is kept in seven days quarantine to avoid diclofenac contamination, if any, as the retention time of diclofenac is 7 days in cow and buffalo. There is provision of feed delivery from outside, without getting in the aviary through the food hatch, thereby minimizing the human contact with vultures.

Laboratory complex: A laboratory complex with observatory room for CCTV monitoring, laboratory for analysis of biological samples, incubation room for incubation of vulture eggs and biologist's chamber is available. The activity patterns of vultures are being monitored through two fixed angle and one PTZ camera with infrared facility. Mating of two vulture pairs are already recorded through CCTV in the centre.





Vulture Conservation Breeding Centre, Nandankanan Biological Park. A) Long billed vultures using nesting platform, B) Vultures using perches, C) Inside view of colony aviary, D) Outside view of colony aviary, E) Vulture marked with leg band, F) PTZ camera in aviary, G) Laboratory complex.



RELEASE OF GHARIALS INTO SATKOSIA GORGE

Odisha is the only state in the country having all three species of crocodiles (gharial, mugger and saltwater crocodile) found in nature. Satkosia gorge in river Mahanadi is the southernmost limit of its home range and the last home of the gharial in our state. The State Forest Department has taken steps to conserve the above crocodiles since 1975 by establishing three rearing centers, Tikarpara for gharial, Ramatirtha for mugger and Bhittarkanika for saltwater crocodile. A captive breeding center at Nandankanan Zoological Park for all the three crocodiles is operative since then. The aim has been to rear crocodiles to three years of age and one meter in length for release into nature. Though conservation measures in past had helped in recovery of self sustaining population of mugger and saltwater crocodile in the state, gharials apparently did not fare well. More than 800 gharials have been released into the Gorge since 1977 but no remarkable sighting is noticed. Therefore, an attempt has been made in July, 2019 to know about the factors affecting their survival in Satkosia Gorge.

Five number gharials bred at Nandankanan Zoological Park were released on 20.07.2019 for pilot study. The gharials are individually marked and fitted with radio transmitters for future identification and tracking of their migration route. They shall be replenishing the stock and help gather information on migration and factors affecting their survival. There is a provision for release of 30 numbers of gharials in future in a phased manner with 10 gharials in each year. The technical assistance for biotelemetry is being obtained from Gharial Telemetry Project, Madras Crocodile Bank Trust. Three numbers of post graduate Research scholars are engaged for day to day observation and keeping track of the released gharials.



Monitoring of Gharial in Mahanadi River System, through Telemetry







CHAPTER

V

FANI RESTORATION WORKS

Restoration of Wildlife Habitat after Extremely Severe Cyclone “FANI” in Odisha

A severe cyclonic storm FANI landed at Puri Coast on 03.05.2019 and affected the coastal divisions as well as state capital, devastating a huge number of age old trees and also wildlife. Wild animals & trees in sanctuary area and outside sanctuary of our coastal and nearby divisions i.e Puri Wildlife Division, Chilika Wildlife Division, Chandaka Wildlife Division and Nandankanan Zoological Park were damaged. A number of spotted deers in Balukhand-Konark Sanctuary lost their habitat completely. In this critical situation wildlife organisation has taken timely measures for restoration of vegetation to safeguard life of wild animals by rescue and rehabilitation of both animals and trees in affected areas.

Progress of restoration work after cyclonic storm FANI

- Total 2800 ha Forest land in Balukhand-Konark Wildlife Sanctuary was damaged. Movement path of deer along with cleaning of meadows and waterholes was taken up. It is targeted to clean replant 400 ha of the FANI ravaged forest area for improvement of the wildlife habitat during 2019-20, out of which 225 ha area has been cleaned up by 31.08.2019 and planting operation is going on.
- Clearance of obstruction i.e uprooted Bamboo clumps and trees over 121 km forest road within the Chandaka-Dampara Wildlife Sanctuary to facilitate patrolling and inspection.
- Restoration of Godibari Nature Camp, Bharatpur Nature Awareness Centre and Jungle Safari Vehicle services with effect from 15th May, 2019.
- 830 uprooted trees have been rehabilitated within campus of CISE, NDRF, SOG, CRPF, Institute of Physics and other Institutions. 700 green bamboo clumps, 3984 plants & trees in Chandaka-Dampara Wildlife Division have been rehabilitated.
- Repairing of Office buildings and staff quarters Divisional Control Room, Dampara Range Office Compound walls, Talabasta Section Office Compound Wall have been completed. Restoration of VHF network has been done.
- 175300 seedlings raised in four permanent and two temporary nurseries under Green Mahanadi Mission and Increasing Green Cover are being distributed to the public in five distribution centers in Bhubaneswar city. Besides that, seedlings were also distributed in six distribution centers in Haladia, Chandaka & Dampara Ranges for public during 70th Vanamahotsava Week, 2019.



- Nandankanan Zoological Park and State Botanical Garden has lost its green ambience due to cyclonic FANI. For Restoration and repair work on construction of 780 rmt of collapsed boundary wall and re-establishment and installation of CCTV Wi-Fi towers etc. was taken up alongwith repair of enclosures, clearance of road, repair of electrical infrastructures etc. Nandankanan was opened to public after about two week time from FANI.





CHAPTER VI

WILDLIFE CENSUS

Wildlife research and documentation is a recognized mandate of the Wildlife Wing. The conservation projects on crocodile, sea turtle, dolphin, tiger, elephant and blackbuck, along with the captive-breeding programme at Nandankanan and Tikarapada, and eco-development need and approaches are some of the few areas generating lot of data which are used in planning and execution of wildlife conservation programmes.

Population estimation of various wildlife species has been done regularly for better understanding of wildlife and their habitat which form a vital input for better management.

As a practice, regular census of Elephant, Tiger and Blackbuck in the terrestrial (forest) habitat; the Gharial, Mugger and waterfowl in the freshwater habitat; the Estuarine Crocodile, the Waterfowl, Whale, Dolphins in saline water and the nesting Turtles in the sea coast habitat are being conducted.



Sambar, Similipal Tiger Reserve



WILDLIFE CENSUS RESULTS

(2014-15, 2015-16, 2016-17, 2017-18 and 2018-19)

| Sl No. | Species | Census area / site | 2014-15 | 2015-16 | 2016-17 | 2017-18 | 2018-19 |
|--------|-----------------------------------|------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|
| 1 | Saltwater crocodile (Baula) | Bhitarkanika | 1678 | 1683 | 1694 | 1713 | 1763 |
| 2 | Mugger crocodile (Magar/ Gomunha) | (i) Satkosia / Mahanadi river | 86 | 103 | 86 | 89 | 104 |
| | | (ii) River systems of Similipal Tiger Reserve | 81 | 79 | 77 | 84 | 85 |
| | | (iii) Ghodahada Reservoir, Digapahandi, Ganjam | 49 | 55 | 55 | 45 | 58 |
| 3 | Gharial (Ghadiyal) | Mahanadi river system | 01 | 3 | 9 | 7 | 8 |
| 4 | Olive Ridley sea turtle | Gahirmatha | 04.13 lakhs | 0.52 lakhs | 6.04 lakhs | 6.65 lakhs | 4.51 lakhs |
| | | Rushikulya river mouth | 03.09 lakhs | 0 | 3.71 lakhs | 4.45 lakhs | No Mass nesting |
| | | Total | 07.22 lakhs | 0.52 lakhs | 9.75 lakhs | 11.10 lakhs | 4.51 lakhs |
| 5 | Irrawaddy Dolphins | Chilika lagoon | 144 | - | 121 | 114 | 113 |
| | Bottle nose | Chilika lagoon | - | - | 13 | 12 | 0 |
| | Dolphins (7 species) | Entire coastal Odisha including Chilika lagoon | 450 (Irrawaddy-206 Bottle Nose-52 Humpback (Sousa chinensis) -125 Humpback (Sousa plumbea) -50 Pantropical spotted-15 Finless-1 Ganges River-1) | - | 257 (Irrawaddy-181 Bottle Nose-31 Humpback (Sousa chinensis) -34 Humpback (Sousa plumbea) -6 Pantropical spotted-5) | 469 (Irrawaddy-163 Bottle Nose-121 Humpback (Sousa chinensis) -116 Humpback (Sousa plumbea) -69) | 259 (Irrawaddy-130 Bottle Nose-16 Humpback (Sousa chinensis) -107 Humpback (Sousa plumbea) -6) |

| | | | | | | | |
|----|-----------------|-------------------------------------------|-------------------------------------------------|-------------------------------------------------------------|---------------------------|--------------------------|-----------------------------------------------|
| 6 | Blackbuck | Blackbuck habitat area of Ganjam District | 3806 | - | - | 4082 | - |
| 7 | Elephant | Entire State | 1954 | - | 1976 | - | - |
| 8 | Tiger | Entire State | 28 (as per Camera Trap Method by WII, Dehradun) | 40 (Census by both Camera trap and Pugmark method by State) | - | - | 28 (26-30) Summary Report of NTCA & WII, 2018 |
| 9 | Leopard | Entire State | - | 318 | - | - | - |
| 10 | Migratory Birds | (i) Chilika lagoon | 7.46 lakhs 102 species | 8.39 lakhs 94 species | 9.24 lakhs 100 species | 8.68 lakhs 95 species | 10.21 lakhs 105 species |
| | | (ii) Bhitarkanika Mangrove Wetland | 01.13 lakhs 145 species | 01.06 lakhs 131 species | 0.76 lakhs 109 species | 1.13 lakhs 83 species | 01.09 lakhs 74 species |
| | | (iii) Hirakud reservoir | 0.58 lakhs 64 species | 0.96 lakhs 60 species | 0.78 lakhs 57 species | 1.37 lakhs 82 species | 01.46 lakhs 92 species |





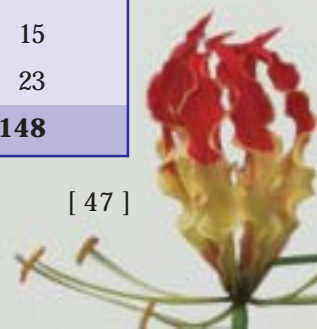
A. Elephant Census

The census of Elephants was conducted in all divisions having Elephant during the month of May, 2017. The census dates are decided in consultation with the states of Jharkhand, Chhatisgarh and West Bengal, all of which share the Eastern Range Elephant Habitat, with Odisha state. Odisha holds about 70% of the Elephants in the region. The Wildlife Headquarters of Odisha Government organizes the training at the regional level. The technique involved is actual count method.

The Census of elephants in Odisha was conducted in the years 1979, 1999 and 2002, 2007, 2010, 2012 2015, and 2017. The technique for census of Elephant has been developed and refined with every successive census operation. The traditional method involves fixed point counts from salt-licks, watch towers, etc. combined with perambulations during the day time.

ODISHA: ELEPHANT CENSUS RESULT 2017

| Name of the Division | Male | Female | Unknown Sex | Young | Total |
|-------------------------------|------------|------------|-------------|------------|------------|
| Angul | 13 | 22 | 0 | 10 | 45 |
| Athmalik | 10 | 30 | 2 | 17 | 59 |
| Dhenkanal | 30 | 94 | 15 | 30 | 169 |
| Athagarh | 17 | 57 | 0 | 41 | 115 |
| Cuttack | 7 | 17 | 0 | 13 | 37 |
| Satkosia WL | 22 | 88 | 0 | 37 | 147 |
| Mahanadi WL | 14 | 50 | 0 | 29 | 93 |
| Total Angul Circle | 113 | 358 | 17 | 177 | 665 |
| Balasore WL | 19 | 51 | 0 | 27 | 97 |
| Rairangpur | 12 | 25 | 0 | 9 | 46 |
| Karanjia | 8 | 21 | 0 | 14 | 43 |
| Baripada | 17 | 34 | 0 | 19 | 70 |
| Similipal TR Core | 38 | 203 | 2 | 87 | 330 |
| Keonjhar WL | 11 | 26 | 0 | 12 | 49 |
| Total Baripada Circle | 105 | 360 | 2 | 168 | 635 |
| Berhampur | 2 | 6 | 2 | 1 | 11 |
| Ghumsur North | 4 | 5 | 0 | 8 | 17 |
| Ghumsur South | 5 | 13 | 2 | 5 | 25 |
| Parlakhemundi | 4 | 18 | 5 | 0 | 27 |
| Balliguda | 4 | 17 | 0 | 9 | 30 |
| Boudh | 3 | 7 | 0 | 5 | 15 |
| Phulbani | 6 | 13 | 0 | 4 | 23 |
| Total Berhampur Circle | 28 | 79 | 9 | 32 | 148 |

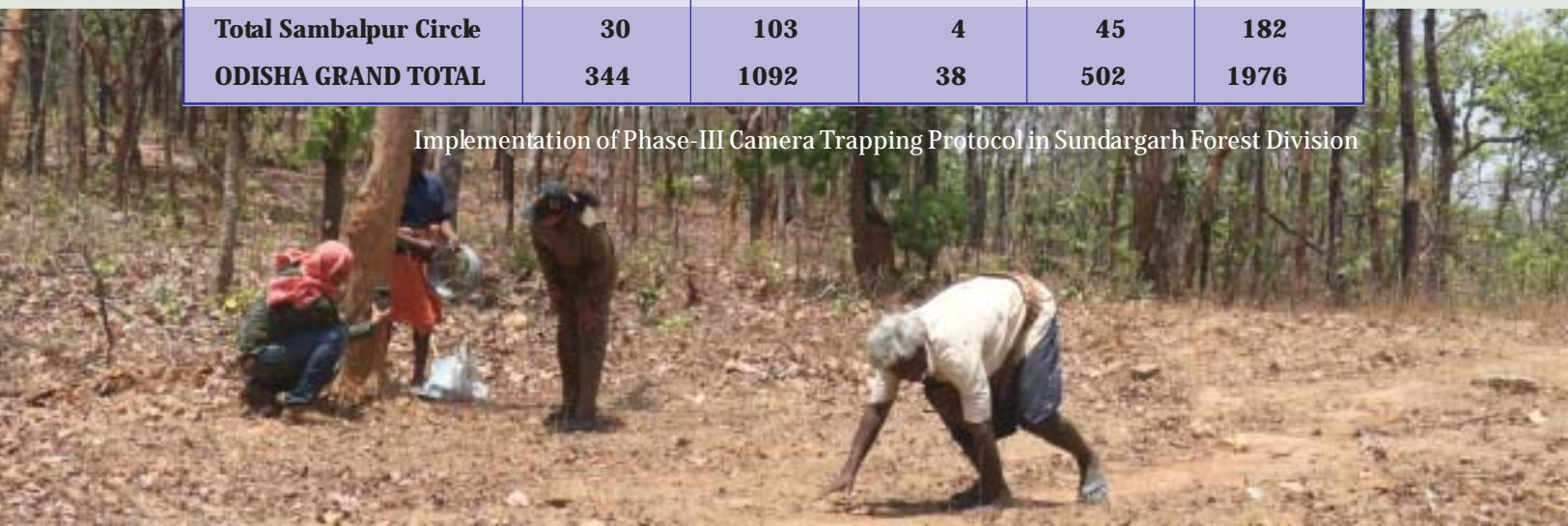


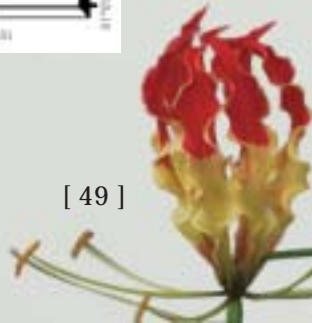


WILDLIFE ODISHA 2019

| Name of the Division | Male | Female | Unknown Sex | Young | Total |
|----------------------------------|------------|-------------|-------------|------------|-------------|
| Kalahandi North | 4 | 9 | 0 | 4 | 17 |
| Kalahandi South | 1 | 0 | 1 | 0 | 2 |
| Subarnapur | 4 | 30 | 0 | 10 | 44 |
| Bolangir | 9 | 20 | 0 | 3 | 32 |
| Khariar | 0 | 0 | 0 | 0 | 0 |
| Total Bhawanipatna Circle | 18 | 59 | 1 | 17 | 95 |
| Chandaka WL | 1 | 0 | 0 | 0 | 1 |
| Chilika WL | 0 | 0 | 0 | 0 | 0 |
| City Forest | 0 | 0 | 0 | 0 | 0 |
| Khurda | 5 | 10 | 1 | 17 | 33 |
| Nayagarh | 2 | 6 | 0 | 6 | 14 |
| Total Bhubaneswar Circle | 8 | 16 | 1 | 23 | 48 |
| Rayagada | 3 | 8 | 1 | 4 | 16 |
| Koraput | 0 | 0 | 0 | 0 | 0 |
| Total Koraput Circle | 3 | 8 | 1 | 4 | 16 |
| Bonai | 14 | 38 | 0 | 7 | 59 |
| Deogarh | 5 | 14 | 1 | 7 | 27 |
| Keonjhar | 9 | 24 | 0 | 7 | 40 |
| Rourkela | 2 | 21 | 2 | 10 | 35 |
| Sundargarh | 9 | 12 | 0 | 5 | 26 |
| Total Rourkela Circle | 39 | 109 | 3 | 36 | 187 |
| Sambalpur | 9 | 31 | 4 | 9 | 53 |
| Jharsuguda | 0 | 0 | 0 | 0 | 0 |
| Rairakhol | 5 | 8 | 0 | 3 | 16 |
| Bamra WL | 12 | 52 | 0 | 30 | 94 |
| Hirakud WL | 4 | 12 | 0 | 3 | 19 |
| Bargarh | 0 | 0 | 0 | 0 | 0 |
| Total Sambalpur Circle | 30 | 103 | 4 | 45 | 182 |
| ODISHA GRAND TOTAL | 344 | 1092 | 38 | 502 | 1976 |

Implementation of Phase-III Camera Trapping Protocol in Sundargarh Forest Division





Elephant Population Trend in Odisha from 1979 to 2017

| Sl. No. | Name of Divisions | May-79 | May-99 | May-02 | May-07 | Apr-10 | Jun-12 | May-15 | May-17 |
|---------|--------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| 1 | Angul | 173 | 162 | 24 | 76 | 40 | 56 | 40 | 45 |
| 2 | Athamallik | 0 | 29 | 37 | 23 | 15 | 28 | 56 | 59 |
| 3 | Athgarh | 75 | 154 | 156 | 139 | 133 | 131 | 114 | 115 |
| 4 | Balasore WL | 0 | 41 | 56 | 67 | 81 | 93 | 89 | 97 |
| 5 | Balliguda | 54 | 17 | 32 | 35 | 41 | 36 | 46 | 30 |
| 6 | Bamra WL | 179 | 183 | 201 | 194 | 152 | 176 | 102 | 94 |
| 7 | Bargarh | 0 | 0 | 0 | 0 | 0 | 15 | 0 | 0 |
| 8 | Baripada | 0 | 0 | 0 | 48 | 48 | 52 | 68 | 70 |
| 9 | Berhampur | 0 | 0 | 0 | 9 | 37 | 35 | 20 | 11 |
| 10 | Bhadrak WL | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 |
| 11 | Bolangir | 0 | 0 | 0 | 0 | 10 | 22 | 28 | 32 |
| 12 | Bonai | 25 | 53 | 82 | 69 | 45 | 42 | 65 | 59 |
| 13 | Boudh | 0 | 15 | 0 | 16 | 8 | 4 | 08 | 15 |
| 14 | Chandaka WL | 0 | 83 | 62 | 67 | 23 | 24 | 08 | 1 |
| 15 | Chilika WL | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 16 | City Forest | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 17 | Cuttack | 0 | 0 | 0 | 8 | 14 | 22 | 35 | 37 |
| 18 | Deogarh | 7 | 21 | 9 | 27 | 58 | 49 | 42 | 27 |
| 19 | Dhenkanal | 92 | 94 | 81 | 132 | 157 | 162 | 164 | 169 |
| 20 | Ghumsur (N) | 5 | 24 | 9 | 17 | 13 | 17 | 21 | 17 |
| 21 | Ghumsur (S) | 8 | 5 | 6 | 0 | 0 | 32 | 42 | 25 |
| 22 | Hirakud WL | 0 | 0 | 0 | 0 | 0 | 16 | 20 | 19 |
| 23 | Jeypore | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 24 | Kalahandi (N) | 0 | 0 | 0 | 26 | 34 | 34 | 19 | 17 |
| 25 | Kalahandi (S) | 60 | 24 | 61 | 27 | 30 | 0 | 7 | 2 |
| 26 | Karanjia | 0 | 28 | 44 | 40 | 32 | 23 | 56 | 43 |
| 27 | Keonjhar | 90 | 75 | 112 | 33 | 41 | 73 | 47 | 40 |
| 28 | Keonjhar WL | 0 | 0 | 0 | 27 | 35 | 40 | 51 | 49 |
| 29 | Khariar | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 30 | Khurdha | 57 | 0 | 0 | 8 | 6 | 14 | 31 | 33 |
| 31 | Koraput | 0 | 0 | 0 | 0 | 14 | 8 | 0 | 0 |
| 32 | Mahanadi WL | 0 | 0 | 25 | 1 | 7 | 5 | 88 | 93 |
| 33 | Malkangiri | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 34 | Mangrove WL | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 35 | Nabarangpur | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 36 | Nayagarh | 51 | 0 | 0 | 6 | 12 | 5 | 17 | 14 |
| 37 | Parlakhemundi | 217 | 86 | 42 | 44 | 21 | 19 | 21 | 27 |
| 38 | Phulbani | 121 | 3 | 6 | 14 | 1 | 6 | 8 | 23 |
| 39 | Puri WL | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 40 | Rairakhol | 51 | 170 | 165 | 11 | 16 | 6 | 9 | 16 |
| 41 | Rairangapur | 0 | 0 | 0 | 48 | 48 | 47 | 48 | 46 |
| 42 | Rayagada | 102 | 10 | 0 | 24 | 12 | 4 | 9 | 16 |
| 43 | Rourkela | 0 | 0 | 0 | 0 | 11 | 11 | 39 | 35 |
| 44 | Jharsuguda | 0 | 0 | 0 | 1 | 4 | 0 | 1 | 0 |
| 45 | Sambalpur | 7 | 54 | 64 | 91 | 77 | 16 | 5 | 53 |
| 46 | Satkosia WL | 0 | 0 | 155 | 194 | 224 | 229 | 146 | 147 |
| 47 | STR Core | 670 | 496 | 412 | 298 | 331 | 334 | 337 | 330 |
| 48 | Subarnapur | 0 | 0 | 0 | 23 | 30 | 31 | 37 | 44 |
| 49 | Sunabeda WL | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 50 | Sundargarh | 0 | 0 | 0 | 17 | 25 | 13 | 10 | 26 |
| | GRAND TOTAL | 2044 | 1827 | 1841 | 1862 | 1886 | 1930 | 1954 | 1976 |



B. Tiger / Leopard Census

'Pugmark Tracking' involves collection of pugmark tracings and plaster casts from the field and analysis of these separately for individual male, female, and cub of tiger and leopard, and their diagnostic track dimensions and study of spatial distribution of tigers.

The final result indicates the (a) total numbers of male, female and cub of tiger and leopard, (b) their pugmark dimensions with stride where available, (c) the names of locations where the pugmarks of each tiger have been traced to show the gross movement areas (d) interrelationship among different tigers by linking each male to female and the latter to cubs tracked in the movement area, and finally (e) spatial distribution map.

192 tigers were estimated to be found in the State during the year 2004 and 40 in 2016 (Table-2) by pug-mark technique.

In the year 2004-05, the Project Tiger authorities and the Wildlife Institute of India together devised a monitoring method. In this method, there were two approaches to collect field data. First, information on habitat conditions and different signs of Tiger evidences were to be collected, and second, by using camera traps Tiger photographs were to be obtained from all Tiger areas.

This process involves following phases namely:

Phase-I: involves field data collection at the beat level using a eight-day standardized protocol after due training to field personnel in states. The eight day protocol consists of field data collection of evidence pertaining to carnivore (tiger, leopard), signs, ungulate abundance, human disturbance and status of habitat. Formats for the eight-day beat level data collection were made available in local vernacular language to help field staff.

Phase-II: involves computation of human disturbance indices, habitat indices and landscape indices from remotely sensed data (done at the Wildlife Institute of India).

Phase-III: involves computation of tiger density using camera traps in a mark recapture statistical framework through research biologists deployed by the Wildlife Institute of India, besides computation of ungulate density using distance sampling. The result of camera trap method are given as below:

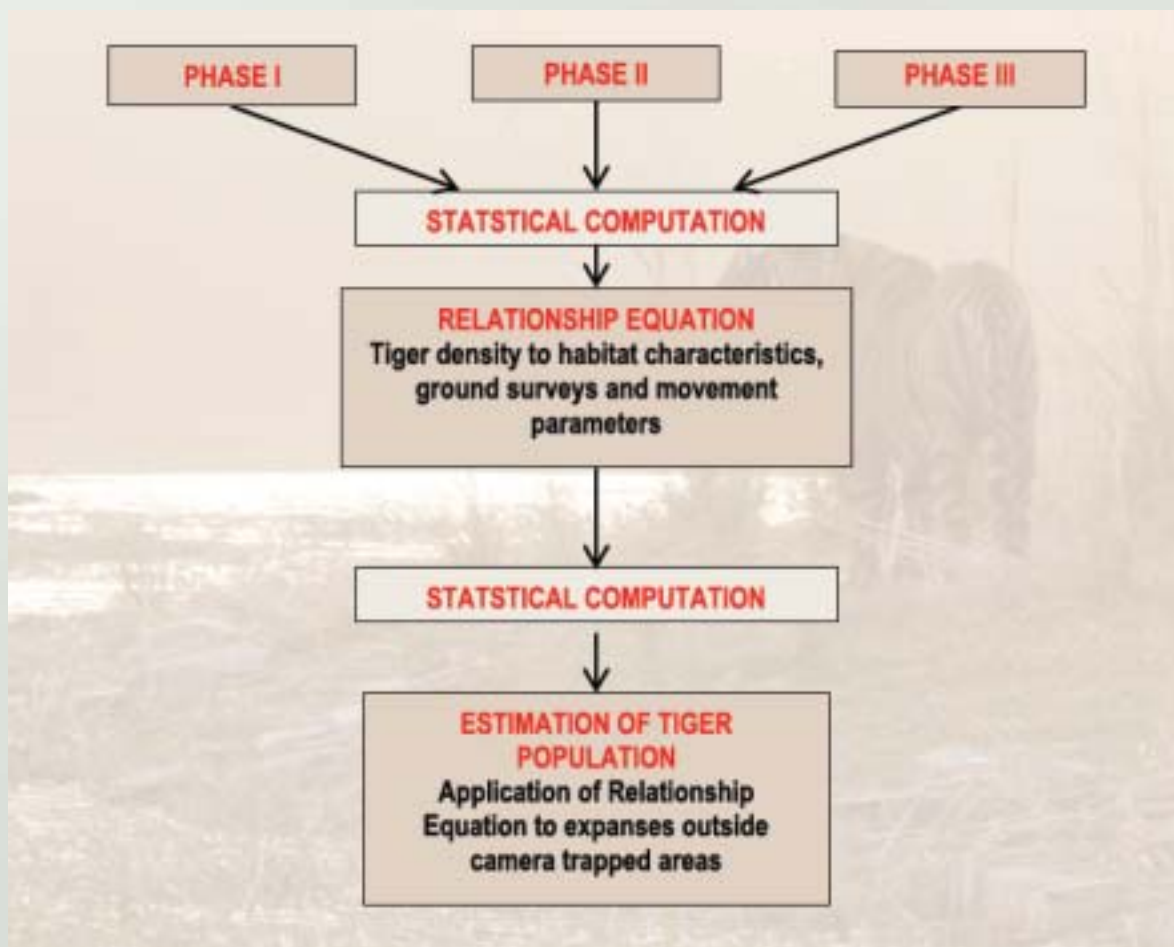
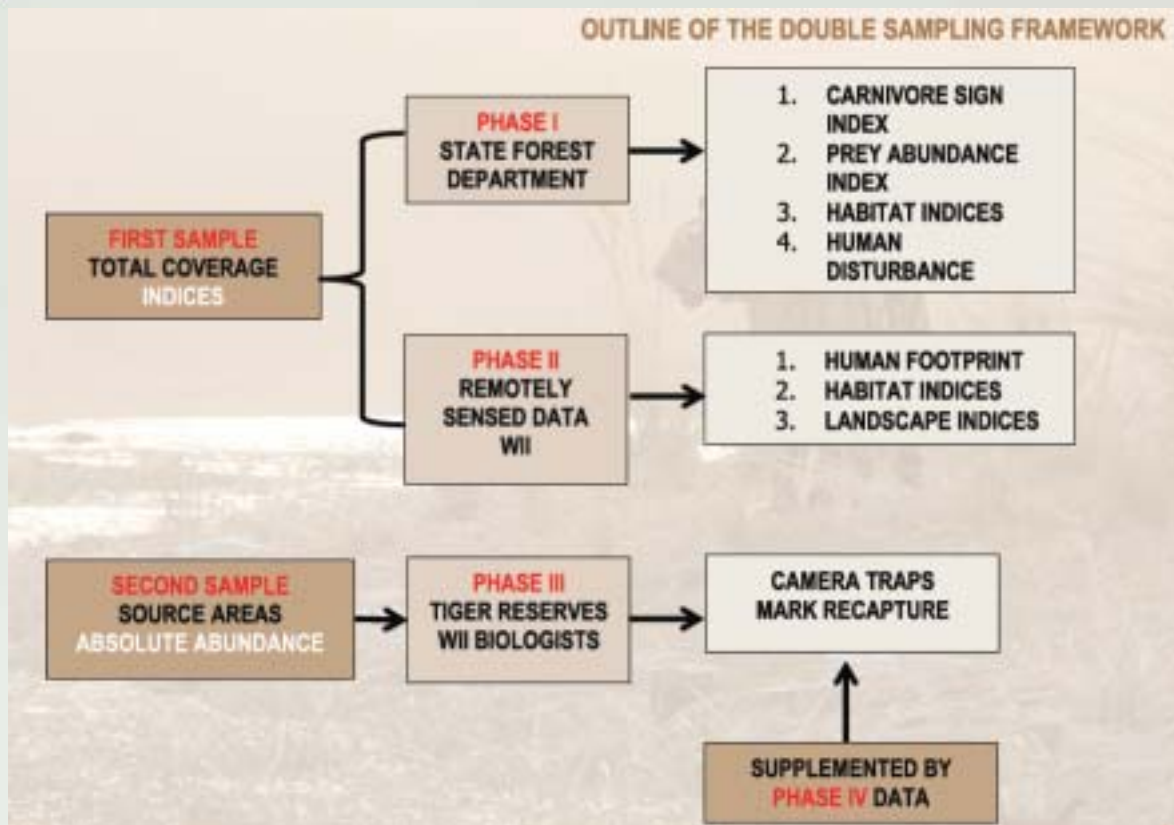


Phase-I sign survey in Bonai Division



Phase-III Camera Trapping Protocol in Sundargarh Division







Summary of AITE-2018 in Odisha

- Out of 51 Divisions, Tiger Estimation conducted in 47 Divisions
- Estimation not conducted in 4 Divisions i.e. City Forest, Bhadrak WL, Mangrove FD (WL), Rajnagar, Chilika WL
- Phase-III exercise was done in both the Tiger Reserves which includes (STR Core, Baripada, Rairangpur, Karanjia, Satkosia WL and Mahanadi WL) and 13 Territorial Divisions (Bonai, Rourkela, Sundargarh, Bamra WL, Hirakud WL, Bargarh, Sunabeda, Bolangir, Khariar, Kalahandi North, Kalahandi South, Keonjhar WL and Balasore WL).

TABLE-1 SHOWING ALL INDIA TIGER ESTIMATION BY CAMERA TRAP METHODS BY NTCA *

| Sl No | Name of the Tiger Reserve | Year 2006 | Year 2010 | Year 2014 | Year 2018 |
|---------------------|---------------------------|-------------------|-------------------|-------------|-------------|
| 1 | Similipal Tiger Reserve | 20(17-23) | 23(12-34) | Whole State | Whole State |
| 2 | Satkosia Tiger Reserve | 6 | 8(7-9) | | |
| 3 | Sunabeda Tiger Reserve | 9 | Census not done | | |
| 4 | Sporadic Occurrence | 6 | | | |
| ODISHA TOTAL | | 45 (37-53) | 32 (20-44) | 28 | 28 |

* This is only CAMERA TRAP estimation conducted by NTCA, which is different from earlier process of sampling through pugmark survey. Hence, they are not comparable.

Earlier Tiger Estimation was carried out by pugmark technique during 2004 and 2016. The details of the estimation for the year 2004 and 2016 is given below:



Implementation of Phase-III Camera Trapping Protocol in Karanjia Forest Division



Table-2 Odisha Tiger Estimations 2004 & 2016

| | Odisha Tiger Census 2004 | | | | Odisha Tiger Census 2016 | | | |
|-------------------------------------|--------------------------|--------|-----|-------|--------------------------|--------|-----|-------|
| | Male | Female | Cub | Total | Male | Female | Cub | Total |
| Bhawanipatna | | | | | | | | |
| Sunabeda | 11 | 10 | 11 | 32 | 01 | 03 | 00 | 04 |
| Khariar | 1 | 2 | 1 | 4 | 01 | 00 | 00 | 01 |
| Kalahandi(N) | 0 | 0 | 0 | 0 | 00 | 00 | 00 | 00 |
| Kalahandi (S) | 0 | 1 | 0 | 1 | 00 | 00 | 00 | 00 |
| Balangir (E) | 0 | 0 | 0 | 0 | 00 | 00 | 00 | 00 |
| Balangir(W) | 0 | 0 | 0 | 0 | 00 | 00 | 00 | 00 |
| Sub-Total | 12 | 13 | 12 | 37 | 02 | 03 | 00 | 05 |
| Koraput Circle: | | | | | | | | |
| Jeypore (incl tigers of Malkangiri) | 1 | 1 | 0 | 2 | 00 | 00 | 00 | 00 |
| Rayagada | 2 | 1 | 0 | 3 | 00 | 00 | 00 | 00 |
| Malkanagiri (Tigers with Jeypore) | 0 | 0 | 0 | 0 | 00 | 00 | 00 | 00 |
| Nawarangpur | 0 | 0 | 0 | 0 | 00 | 00 | 00 | 00 |
| Koraput | 1 | 1 | 0 | 2 | 00 | 00 | 00 | 00 |
| Sub-Total | 4 | 3 | 0 | 7 | 00 | 00 | 00 | 00 |
| Angul Circle | | | | | | | | |
| Satkosia(WL) | 4 | 6 | 1 | 11 | 01 | 01 | 00 | 02 |
| Angul | 0 | 0 | 0 | 0 | 00 | 00 | 00 | 00 |
| Dhenkanal | 0 | 0 | 0 | 0 | 00 | 00 | 00 | 00 |
| Athagarh | 0 | 0 | 0 | 0 | 00 | 00 | 00 | 00 |
| Athmalik | 0 | 0 | 0 | 0 | 00 | 00 | 00 | 00 |
| Cuttack | 0 | 0 | 0 | 0 | 00 | 00 | 00 | 00 |
| Sub-Total | 4 | 6 | 1 | 11 | 01 | 01 | | 02 |
| Sambalpur Circle | | | | | | | | |
| Sambalpur(S) | 0 | 0 | 0 | 0 | 00 | 00 | 00 | 00 |
| Sambalpur(N) | 0 | 0 | 0 | 0 | 00 | 00 | 00 | 00 |
| Rairakhole | 0 | 0 | 0 | 0 | 00 | 00 | 00 | 00 |
| Bamra WL | 1 | 1 | 0 | 2 | 00 | 00 | 00 | 00 |
| Hirakud WL | 2 | 3 | 0 | 5 | 00 | 00 | 00 | 00 |
| Bargarh | 0 | 0 | 0 | 0 | 00 | 00 | 00 | 00 |
| Sub-Total | 3 | 4 | 0 | 7 | 00 | 00 | 00 | 00 |
| Bhubaneswar Circle | | | | | | | | |
| Nayagarh | 0 | 0 | 0 | 0 | 00 | 00 | 00 | 00 |
| Mahanadi WL | 3 | 2 | 2 | 7 | 00 | 00 | 00 | 00 |

| | | | | | | | | |
|-------------------------|-----------|-----------|-----------|------------|-----------|-----------|-----------|-----------|
| Chandka | 0 | 0 | 0 | 0 | 00 | 00 | 00 | 00 |
| Khurda | 0 | 0 | 0 | 0 | 00 | 00 | 00 | 00 |
| Sub-Total | 3 | 2 | 2 | 7 | 00 | 00 | 00 | 00 |
| Berhampur Circle | | | | | | | | |
| Berhampur | 0 | 0 | 0 | 0 | 00 | 00 | 00 | 00 |
| Ghumsur(S) | 0 | 1 | 1 | 2 | 00 | 00 | 00 | 00 |
| Ghumsur(N) | 0 | 2 | 6 | 8 | 00 | 00 | 00 | 00 |
| Phulbani | 0 | 0 | 2 | 2 | 00 | 00 | 00 | 00 |
| Boudh | 0 | 1 | 2 | 3 | 00 | 00 | 00 | 00 |
| Parlakhemundi | 0 | 0 | 0 | 0 | 00 | 00 | 00 | 00 |
| Balliguda | 3 | 1 | 2 | 6 | 00 | 00 | 00 | 00 |
| Sub-Total | 3 | 5 | 13 | 21 | 00 | 00 | 00 | 00 |
| Rourkela Circle | | | | | | | | |
| Anandpur(WL) | 0 | 0 | 0 | 0 | 01 | 02 | 00 | 03 |
| Sundargarh | 0 | 0 | 0 | 0 | 00 | 01 | 00 | 01 |
| Bonai | 0 | 0 | 0 | 0 | 00 | 00 | 00 | 00 |
| Raurkela | 0 | 0 | 0 | 0 | 00 | 00 | 00 | 00 |
| Deogarh | 0 | 0 | 0 | 0 | 00 | 00 | 00 | 00 |
| Keonjhar | 0 | 0 | 0 | 0 | 00 | 00 | 00 | 00 |
| Sub-Total | | | | | 01 | 03 | 00 | 04 |
| STR Circle | | | | | | | | |
| Similipal | 27 | 39 | 28 | 94 | 09 | 14 | 03 | 26 |
| Baripada | 0 | 0 | 2 | 2 | 00 | 00 | 00 | 00 |
| Karanjia | 1 | 1 | 0 | 2 | 00 | 03 | 00 | 03 |
| Rairangpur | 0 | 1 | 2 | 3 | 00 | 00 | 00 | 00 |
| Bhadrak WL | 0 | 0 | 0 | 0 | 00 | 00 | 00 | 00 |
| Balasore WL | 0 | 1 | 0 | 1 | 00 | 00 | 00 | 00 |
| Sub-Total | 28 | 42 | 32 | 102 | 09 | 17 | 03 | 29 |
| Summary | | | | | | | | |
| Bhawanipatna Circle: | 12 | 13 | 12 | 37 | 02 | 03 | 00 | 05 |
| Koraput Circle | 4 | 3 | 0 | 7 | 00 | 00 | 00 | 00 |
| Angul Circle | 4 | 6 | 1 | 11 | 01 | 01 | 00 | 02 |
| Sambalpur Circle | 3 | 4 | 0 | 7 | 00 | 00 | 00 | 00 |
| Berhampur Circle | 3 | 5 | 13 | 21 | 00 | 00 | 00 | 00 |
| Rourkela Circle | 0 | 0 | 0 | 0 | 01 | 03 | 00 | 04 |
| Bhubaneswar Circle | 3 | 2 | 2 | 7 | 00 | 00 | 00 | 00 |
| STR Circle | 28 | 42 | 32 | 102 | 09 | 17 | 03 | 26 |
| Odisha G. Total | 57 | 75 | 60 | 192 | 13 | 24 | 03 | 40 |

Table-3 Odisha Leopard Estimations 2004 & 2016

| date: 08 March 2004 | LEOPARD 2004 | | | | LEOPARD 2016 | | | |
|-------------------------------------|--------------|--------|-----|-------|--------------|--------|-----|-------|
| | Male | Female | Cub | Total | Male | Female | Cub | Total |
| Bhawanipatna Circle: | | | | | | | | |
| Sunabeda | 14 | 17 | 5 | 36 | 6 | 11 | 3 | 20 |
| Khariar | 1 | 2 | 0 | 3 | 2 | 4 | 1 | 7 |
| Kalahandi(N) | 2 | 5 | 1 | 8 | 8 | 4 | 0 | 12 |
| Kalahandi (S) | 0 | 5 | 0 | 5 | 3 | 4 | 1 | 8 |
| Subarnapur | 1 | 2 | 0 | 3 | 1 | 1 | 0 | 1 |
| Bolangir | 1 | 3 | 2 | 6 | 2 | 0 | 0 | 2 |
| Sub-Total | 19 | 34 | 8 | 61 | 22 | 24 | 5 | 51 |
| Koraput Circle | | | | | | | | |
| Jeypore (incl tigers of Malkangiri) | 9 | 7 | 1 | 17 | 3 | 2 | 0 | 5 |
| Rayagada | 5 | 5 | 1 | 11 | 2 | 4 | 0 | 6 |
| Malkanagiri (Tigers with Jeypore) | 5 | 4 | 1 | 10 | 1 | 0 | 0 | 1 |
| Nawarangpur | 1 | 2 | 0 | 3 | 1 | 0 | 0 | 1 |
| Koraput | 4 | 6 | 1 | 11 | 1 | 1 | 0 | 2 |
| Sub-Total | 24 | 24 | 4 | 52 | 8 | 7 | 0 | 15 |
| Angul Circle | | | | | | | | |
| Satkosia(WL) | 9 | 9 | 1 | 19 | 7 | 11 | 0 | 18 |
| Angul | 2 | 2 | 0 | 4 | 0 | 0 | 0 | 0 |
| Dhenkanal | 2 | 0 | 0 | 2 | 0 | 1 | 0 | 1 |
| Athagarh | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 3 |
| Athmalik | 6 | 8 | 2 | 16 | 9 | 5 | 0 | 14 |
| Cuttack | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 |
| Mahanadi WL | 7 | 8 | 0 | 15 | 6 | 10 | 1 | 17 |
| Sub-Total | 26 | 28 | 3 | 57 | 23 | 29 | 1 | 53 |
| Sambalpur Circle | | | | | | | | |
| Sambalpur | 1 | 1 | 0 | 2 | 1 | 0 | 0 | 1 |
| Jharsuguda | 1 | 0 | 1 | 2 | 0 | 0 | 0 | 0 |
| Rairakhole | 2 | 0 | 0 | 2 | 4 | 10 | 0 | 14 |
| Bamra WL | 7 | 8 | 1 | 16 | 5 | 3 | 0 | 8 |
| Hirakud WL | 10 | 11 | 0 | 21 | 9 | 11 | 2 | 22 |
| Bargarh | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 |
| Sub-Total | 21 | 21 | 2 | 44 | 20 | 24 | 2 | 46 |
| Bhubaneswar Circle | | | | | | | | |
| Nayagarh | 2 | 0 | 0 | 2 | 1 | 0 | 0 | 1 |

| | | | | | | | | |
|-------------------------|------------|------------|-----------|------------|------------|------------|-----------|------------|
| Chandka | 4 | 4 | 0 | 8 | 0 | 0 | 0 | 0 |
| Khurda | 4 | 4 | 0 | 8 | 3 | 7 | 0 | 10 |
| Sub-Total | 10 | 8 | 0 | 18 | 4 | 7 | 0 | 11 |
| Berhampur Circle | | | | | | | | |
| Berhampur | 1 | 0 | 0 | 1 | 2 | 3 | 0 | 5 |
| Ghumsur(S) | 4 | 4 | 0 | 8 | 4 | 7 | 0 | 11 |
| Ghumsur(N) | 25 | 21 | 3 | 49 | 6 | 10 | 1 | 17 |
| Phulbani | 4 | 11 | 2 | 17 | 2 | 1 | 0 | 3 |
| Boudh | 6 | 6 | 0 | 12 | 4 | 5 | 0 | 9 |
| Parlakhemundi | 2 | 0 | 0 | 2 | 2 | 1 | 0 | 3 |
| Balliguda | 4 | 5 | 0 | 9 | 4 | 6 | 0 | 10 |
| Sub-Total | 46 | 47 | 5 | 98 | 24 | 33 | 1 | 58 |
| Rourkela Circle | | | | | | | | |
| Anandpur(WL) | 0 | 2 | 1 | 3 | 2 | 3 | 0 | 5 |
| Sundargarh | 3 | 6 | 1 | 10 | 4 | 7 | 1 | 12 |
| Bonai | 2 | 6 | 0 | 8 | 1 | 0 | 0 | 1 |
| Raurkela | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| Deogarh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Keonjhar | 0 | 4 | 0 | 4 | 0 | 0 | 0 | 0 |
| Sub-Total | 5 | 18 | 2 | 25 | 8 | 10 | 1 | 19 |
| STR Circle | | | | | | | | |
| Similipal | 32 | 50 | 18 | 100 | 23 | 11 | 7 | 41 |
| Baripada | 4 | 9 | 0 | 13 | 1 | 2 | 0 | 3 |
| Karanjia | 4 | 3 | 1 | 8 | 7 | 3 | 3 | 13 |
| Rairangpur | 4 | 2 | 0 | 6 | 2 | 2 | 0 | 4 |
| Bhadrak WL | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Balasore WL | 1 | 4 | 0 | 5 | 2 | 2 | 0 | 4 |
| Sub-Total | 45 | 68 | 19 | 132 | 35 | 20 | 10 | 65 |
| Summary | | | | | | | | |
| Bhawanipatna Circle | 19 | 34 | 8 | 61 | 22 | 24 | 5 | 51 |
| Koraput Circle | 24 | 24 | 4 | 52 | 8 | 7 | 0 | 15 |
| Angul Circle | 26 | 28 | 3 | 57 | 23 | 29 | 1 | 53 |
| Sambalpur Circle | 21 | 21 | 2 | 44 | 20 | 24 | 2 | 46 |
| Berhampur Circle | 46 | 47 | 5 | 98 | 24 | 33 | 1 | 58 |
| Rourkela Circle | 5 | 18 | 2 | 25 | 8 | 10 | 1 | 19 |
| Bhubaneswar Circle | 10 | 8 | 0 | 18 | 4 | 7 | 0 | 11 |
| STR Circle | 45 | 68 | 19 | 132 | 35 | 20 | 10 | 65 |
| Odisha Total | 196 | 248 | 43 | 487 | 144 | 154 | 20 | 318 |



CHAPTER VII

ACHIEVERS IN THE FIELD OF WILDLIFE CONSERVATION

STATE LEVEL

- The Govt. of Odisha in Forest and Environment Department vide their resolution No.14585-I-Affn-6/2012-F&E dtd 03.08.2012 had approved the modalities for the “Biju Patnaik Award for Wildlife Conservation”, to be presented each year in the month of October to recognize the contribution of individuals/institutions towards conservation of wildlife.
- This award is given every year to individuals or institutions operating in the State of Odisha and engaged in wildlife and biodiversity conservation, research and education. The award is given at the State level as well as in the Sub-Divisional level.
- The State level award consists of a certificate with cash award of Rs.2,00,000/- (Rupees two lakhs) only. Initially the cash award was Rs.50,000/-; subsequently enhanced to Rs.1,00,000/- and Rs.2,00,000/- during the year 2007 and 2008 respectively. The amount of cash award for sub- division is Rs 5000/-.

THE AWARDEES OF PREVIOUS YEARS ARE AS FOLLOWS:

- 2018:** Prof. Sushil Kumar Dutta for his sustained contribution for protection and conservation of reptiles and amphibians of the state in Odisha.
- 2017:** Shri Chakradhara Hembram for his sustained contribution for protection and conservation of wildlife. He has played a vital role in village relocation in around Similipal Tiger Reserve, Mayurbhanj.
- 2016:** Dr Gauranga Charan Rout for his sustained efforts for protection and conservation of Wildlife in Odisha.
- 2015:** Shri Satrughna Rout for his sustained contribution for protection and conservation of wildlife. He played a vital role in providing valuable information for detection of wildlife offence cases and effecting seizure and recovery of ivory, skins of tiger and leopard around Similipal Tiger Reserve.
- 2014:** Prof. Priyambada Mohanty-Hejmadi for her life time sustained contribution towards Conservation of Wildlife, especially Olive Ridley Sea turtles & Estuarine Crocodile in the State.
- 2013:** Dr Lala Aswini Kumar Singh and Swaraj Kumar Kanhar for their life time contribution for wildlife conservation in Odisha.





- 2012:** Shri Shyama Om Prasad Mishra-for his sustained contribution for conservation of House Sparrows with own initiatives at local level to build up its dwindling population in the State.
- 2011:** Dr. Lakshmi Narayan Acharjyo and Sri Prasanna Kumar Behera-for their life time contribution for wildlife conservation and protection in Odisha.
- 2010:** Sri Amarendra Lal Bose-for sustained campaigning in the print media over last forty years for conservation of wildlife, emphasizing flora and fauna of Similipal.
- Sri Saroj Kumar Patnaik-who made a mark nationally as a wildlife expert and a professional in the field of ex-situ management.
- 2009:** Dr Udaya Narayan Dev-for his sustained lifetime contributions in wildlife, particularly the birds of Odisha.
- Dr. Sundara Narayana Patro- for sustained life-time contributions and campaign for the cause of conservation of wildlife and biodiversity of Odisha.
- 2008:** Prof. Basanta Kumar Behura-for sustained work for over sixty years on all faculties of wildlife science, i.e. Education, Research and Conservation.
- 2007:** Sri Mahabir Pakshi Surakshya Samiti of Mangalajodi for taking exemplary initiatives for bird conservation in and around Chilika lagoon.
- 2006:** The Peacock Protection Committee, Ganjam for collective effort of villagers that have made the peafowl sustain and thrive in the Pakidi hill area.
- 2005:** Blackbuck Management Committee, Ganjam – for outstanding contribution to the cause of protection of blackbucks, and for the larger cause of spreading the wildlife conservation ethos.



BIJU PATNAIK AWARD FOR WILDLIFE CONSERVATION 2018

Prof. Sushil Kumar Dutta

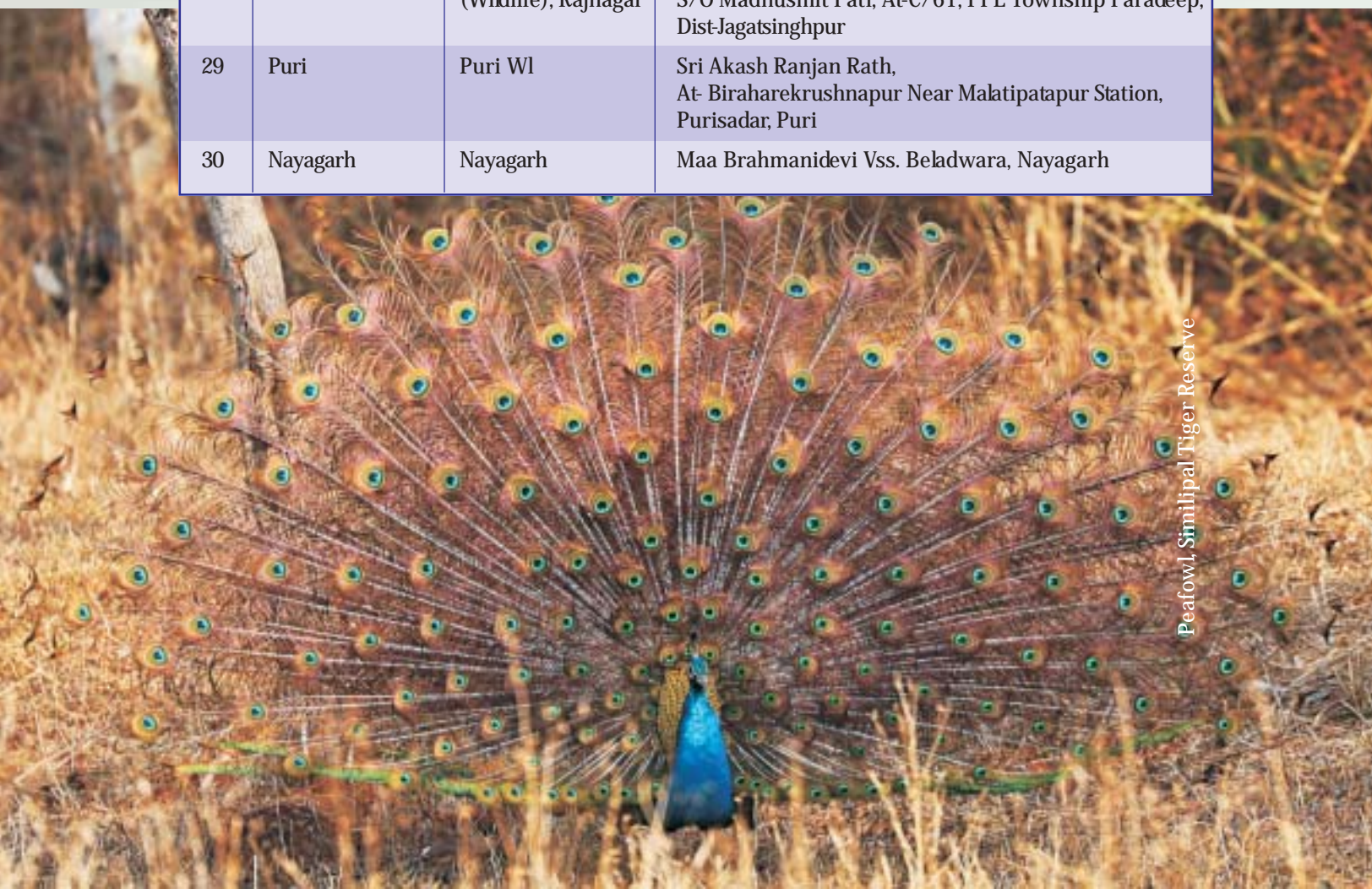


AWARDEE LIST FOR SUB-DIVISIONAL LEVEL BIJU PATNAIK AWARD 2018

| Sl No | Name of the Sub-division | Name of the Division | Name of the Individual/ Institution |
|----------------------------|--------------------------|----------------------|-----------------------------------------------------------------------------------------------------|
| Angul Circle | | | |
| 1 | Angul | Angul | Sri Subrat Kumar Pradhan, S/O- Basanta Kumar Pradhan, At: Jamunali, Po: Kuio, Dist: Angul |
| 2 | Talcher | Angul | Balarampur Vana Surakhya Samiti At: Balarampur, Po: Balipashi, Dist : Angul |
| 3 | Jajpur | Cuttack | Sri Anil Kumar Das, At: akabarabad, Po: Chandikhol, Dist: Jajpur |
| Baripada Circle | | | |
| 4 | Panchpir | Karanjia | Sri Sarat Kumar Tripathy Thakurmunda, Dist- Mayurbhanj |
| 5 | Baripada | Baripada | Nilakantha Mohanta, Badsole |
| 6 | Anandapur | Keonjhar WL | Sri Bhagirathi Lenka, Fakirpur |
| Berhampur Circle | | | |
| 7 | Berhampur | Berhampur | Sri Gopinath Behera, President, Ghodahada Cluster Committee, Burubandha |
| 8 | Chatrapur | Berhampur | Sri W. Someya, President, Radha Krushna Kainchasurakhya Sangha, Gokharkuda |
| 9 | Boudh | Boudh | Sri Arun Kumar Mendili |
| 10 | Paralakhemundi | Paralakhemundi | Sri Gopal Chandra Satapathy Mutyalustreet, Paralakhemundi |
| 11 | Phulbani | Phulbani | Sri Madhusudan Kanhar, Vill: Lambagudri |
| 12 | Balliguda | Balliguda | Sushree Menaka Mallik, Sarapancha, Battaguda |
| Bhawanipatna Circle | | | |
| 13 | Biramaharajpur | Subarnapur | Sri Jitendra Pardia, At/Po- Chadaipank, Via- Ullunda, Dist- Subarnapur. |
| 14 | Bhawanipatna | Kalahandi (S) | Sri Prasanna Kumar Sunani, At: Sareghapara, Po- Bhawnipatana, Dist- Kalahandi |
| Koraput Circle | | | |
| 15 | Koraput | Koraput | Sri Biswajit Majhi, S/O- Satyanaryan Majhi, Age-16, At/Po/Ps- Sunabeda, Dist-Koraput |
| 16 | Jeypore | Jeypore | Sri Girish Chandra Pal, At/Po- V.I.P. Colony, Ps- Baipariguda, Dist- Koraput |
| 17 | Malkangiri | Malkangiri | Sri Dasaratha Challan, S/O- Govinda Challan, At/Po- Govindaplli, Ps-Mathili, Dist- Malkangiri |
| Rourkela Circle | | | |
| 18 | Panposh | Rourkela | Sri Jyotirmay Rout |



| | | | |
|---------------------------|--------------|-------------------------------------|----------------------------------------------------------------------------------------------------------------------|
| 19 | Bonai | Bonai | Dr Sudhakar Behera |
| 20 | Keonjhar | Keonjhar (T) | Begunakhaman U.P(M.E.) School |
| 21 | Champua | Keonjhar (T) | Sri Purusottam Mahanta |
| 22 | Sundargarh | Sundargarh | Sri Baikuntha Jagat |
| Sambalpur Circle | | | |
| 23 | Sambalpur | Sambalpur | Sri Arun Kumar Dehury, S/O- Upendra Dehury, At/Po- Juujomura, Dist- Sambalpur |
| 24 | Rairakhol | Rairakhol | Sri Muralidhar Swain, S/O- Chhalu Swain, At- Losara (Kadobahal), Po-Similipal, Ps- Rairakhol, Dist- Sambalpur. |
| 25 | Jharsuguda | Jharsuguda | Sri Ganesh Mirdha, S/O- Parakshit Mirdha, At-Meherpada (Badmal), Po- Badmal, Ps- Jharsuguda, Dist- Jharsuguda |
| Bhubaneswar Circle | | | |
| 26 | Banki | Khordha | Sri Lalit Mohan Panda, S/O Dhuba Charan Panda, At-Medical Road, Banki, P.O.-Banki, Dist-Cuttack |
| 27 | Bhubaneswar | Khordha | Smt. Prasanna Pati, Flat No. 4061, Terra Dnoxy Park, Dumduma Khadagiri, Bhubanswar |
| 28 | Jagatsingpur | Mangrove FD (Wildlife), Rajnagar | Sri Saswat Pati, S/O Madhusmit Pati, At-C/61, PPL Township Paradeep, Dist-Jagatsinghpur |
| 29 | Puri | Puri WI | Sri Akash Ranjan Rath, At- Biraharekrushnapur Near Malatipatapur Station, Purisadar, Puri |
| 30 | Nayagarh | Nayagarh | Maa Brahmanidevi Vss. Beladwara, Nayagarh |



Peafowl, Similipal Tiger Reserve



CHAPTER

VIII

HUMAN-ANIMAL CONFLICT

Human – Animal Conflict in the State

Odisha is rich state in biological diversity; exclusively large mammals. Protected areas are the main focus for the conservation of wildlife resources. Human-wildlife conflict (HWC) is one of the most complex challenges facing conservationists and the local inhabitants living in the fringe of the forest areas. This is especially the case, and worst, where people's livelihood directly depends on the forest products, agricultural activities and other land uses in the buffer zones.

Therefore mitigation and preventive strategies for conservation measure is needed in order to manage wildlife in sustainable manner. The continuous growth of the human population and shrinking of forest area have brought wildlife and humans together which further generates these conflicts. The frequency and severity of human-wildlife conflict has continually increased over the years in the state resulting from human kill, human injury, house damage, crop damages and livestock depredation. Odisha State has enhanced the compassionate grant due to damages made by wildlife to maintain a co-existence among various stakeholders.

Preventive Measures

Measures that can prevent or minimise the risk of conflicts arising between people and animals include the extreme one of completely removing either the people or the animals, physically separating the two by the use of barriers, managing by a variety of means the numbers of animals to reduce the risk of conflict and employing a variety of scaring and repelling tactics.

1. Use of Physical Barriers

Use of physical barriers can, in many situations, be an effective method of settling human-wildlife conflicts. If they are properly designed, constructed and maintained, fences can be completely effective in preventing conflict between people and wild animals. The major factor limiting the wider use of wildlife fences is their cost. This will vary depending on many factors among them topography, type of fence and the species it is designed to contain.

In our State three types of fences are used i.e. Stone wall, Solar Fencing and trench fencing.

2. Guarding Crops and Livestock

Watchtowers that provide good vantage points, built around fields of crops, increase the farmers' chances of their being alerted to the presence of wildlife before damage has occurred. Local simple alarm systems, with tins, are used for scaring away the wild animals.





3. Use of Repellents

Another way to alter animal behaviour with the goal of minimising human-wildlife conflicts is the use of repellents like bee sound as repellents to elephants. In Sadashipur of Dhenkanal Division this is being implemented on trail basis. Depending on the success this will be extended to other Divisions. Use of chilli extract that caused irritation to the elephant is also being tried but is not so effective as the elephants gets acclimatized to the irritation.

4. Sharing Information

The Wildlife App developed by the Wildlife Organisation helps to track the elephants straying near human habitation to prevent any untoward situation. Gaja Bandhu will be deployed for early warning system by engaging local youths. The information received is being mapped for deployment of appropriate conflict mitigation measures. Explicit GIS analyses and maps to document distribution and type of conflict, species involved, severity, causal factors of conflict and to produce predictor variables for conflict. Such information is being used to combat the problem, and also to inform the authorities like railways, energy department etc. who want to help but have inadequate information for prompt action.

5. Detusking

Lone tusker in Talcher Range of Angul Division was successfully detusked that had created havoc in the area by killing 5 persons in a day. This helped in reducing the aggression of the tusker.

6. Capture and release

Saving a life is critical, but more crucial is sustaining the saved life. In case of wildlife, the factor of sustenance of the rescued animal becomes more essential than just saving it from death. The post-rescue care to rehabilitate a wildlife is a major area of concern since the injured animal can't just be left alone to struggle for life in the jungle. The entire process of 'Back to the Wild' for a wildlife is an amalgamation of medical treatment, physiological and psychological remedy, humane touch and a careful rehabilitation of the animal in the forest with constant supervision. Rehabilitation begins when an animal is found and reported to a wildlife rehabilitator, or seized from the illegal wildlife trade or a poacher. The rehabilitator will examine the animal to determine the extent of the injury and the probability of successful rehabilitation. If it appears that the animal can make a sufficient recovery to be able to return to the wild, the animal will be fed, nurtured, provided safe temporary housing, and medically treated as necessary. To achieve this end an association has been developed with WTI, a leading NGO in the field.

"Wild Rescue and Rehabilitation" is one of the nine Big Ideas of Wildlife Trust of India. Wildlife Trust of India (WTI) is a leading Indian nature conservation organization committed to the service of nature. Its mission is to conserve wildlife and its habitat and to work for the welfare of individual wild animals, in partnership with communities and governments. Wild Rescue functions by conducting rescue, rehabilitation and release of temporarily displaced wild animals, through appropriate veterinary services and operates either by direct action (establishment of rescue-rehab centers and mobile veterinary service (MVS) units or indirectly







through involvement of members from Emergency Relief Network (ERN). WTI's MVS units are a means to rapidly address reported wildlife emergencies and meet the welfare needs of distressed wild animals through rescue, rehabilitation, conservation translocations and the diagnosis and effective control of emerging infectious diseases (EID) associated to wildlife. WTI has thus far deployed MVS units in places where (some or all of) the following wildlife emergencies are reported: (i) high instances of Human Wildlife Conflict, (ii) frequent wildlife displacements due to man-made and/or natural calamities, and (iii) reports of wildlife health issues like epidemics due to infectious and non-infectious diseases.

With the rise in the instances of Wildlife Displacement, the wildlife rescue and rehabilitation has got a new dimension. Wildlife displacement, as defined with respect to the Big Idea of WTI "Wild Rescue and Rehabilitation" is incapacitation (often temporary) of a wild animal in its habitat or range (or sometimes even their ecosystem functional role) due to either a man-made or a natural reason. Such a disadvantaged animal cannot survive and fulfill its role in ecosystem process without human assistance through efforts like confiscation, repatriation, treatment, translocation, rewilding, etc. many of which form part of the rehabilitation process of an individual. The Mobile Veterinary Service (MVS) project envisages the deployment of trained wildlife veterinarians in Protected Areas and across India to ensure that 24×7, quality veterinary support is made available to such displaced wildlife in distress. The tremendous pressure due to environmental changes had led to the huge loss of biodiversity on one side and on the other hand increased local abundance of a range of opportunistic *taxa*, demanding the intervention by wildlife veterinarians. Veterinarians have not only become an integral part of a team attending to wildlife emergencies but also have key responsibilities when it comes to alleviating stress and improve welfare aspects of the displaced wildlife. This importance of a veterinarian in rescue, conservation and mitigation of conflicts has given rise to the need for establishment of Mobile veterinary service (MVS) units. At its core, the project aims at facilitating the safe and prompt return of displaced wild animals to their habitat to restore natural ecosystem functions/processes and consequently reduce biodiversity loss. This is achieved using scientifically designed and universally accepted protocols and guidelines. The units in addition, also address the welfare needs of distressed wildlife through rescue and rehabilitation, conservation translocations and diagnosis and prevention of wildlife diseases. The biggest contributor to widespread animal displacements are anthropogenic – including habitat destruction and fragmentation and poaching and hunting for trade or local consumption. Wildlife Trust of India (WTI) is working diligently towards this cause and has been successful in the rescue and rehabilitation of wildlife in different parts of Odisha.

In Odisha, WTI came up with this unique method of conserving the Wildlife by setting up its Mobile Veterinary Service at Similipal Tiger Reserve, Odisha in 2014. After the success of this unit, the organization will launch another such unit in Keonjhar. A few more such centres are being planned to effectively carryout rescue and release operation.

Such projects are set up with the formation of local rescue teams and their capacity building through regular trainings and mock drills. Specific attention is given to training on Conflict animal management, basics of wildlife rescue, rehabilitation and scientific principles to be utilized, First-aid and transportation of injured animals, Best management practices for handling human-snake conflict and Tactical rescue.





CHAPTER IX

MITIGATION OF HUMAN-ANIMAL CONFLICT

Approaches to Managing Human-Animal Conflicts

There are two basic approaches to managing human wildlife conflicts: prevention and mitigation. A rather different approach is represented by changing attitudes to wildlife through education and by ensuring that affected communities and individuals are active participants in, and enjoy tangible benefits from, wildlife management.

Steps taken by State Government for reducing Human-Animal Conflict

1. Reducing and mitigating crop damage by wild animals through fencing, alternative crop cultivation, use of audio deterrents, etc

Methods

2. Use of solar / stone wall and trench fencing in high damage areas.
3. Support to local villages for subsidize fencing materials.
4. Develop forest enrichment plantations to provide food sources for wildlife and deter them from coming to villages/settlements.
5. Plantation of trees to connect between two habitat to avoid habitat fragmentation and relocation of villages to provide inviolate area to the wild animals.
6. Encourage rearing improved breeds of cattle through training and education to reduce dependency on forest and to avoid venturing into forest.
7. Identifying human-wildlife conflict hotspots and poaching hotspot areas for patrolling and anti-poaching purposes involving local communities.
8. Identifying corridors where wild animal enter and cause damages.
9. Form anti-poaching squads involving communities and organizing regular patrols.

Depredation trend over years

Man-animal conflicts, involving Elephant, Saltwater crocodile, Sloth Bear, Wild Boar and Leopard have been recorded in our State.



Table showing depredation trend over last eight years

Year wise figure of depredation due to wild animals

| Year | Human Kill | | | Human Injury | | | Cattle Kill | | | House Damage | | | Crop Damage (in Acres) | | | Total Victim / Area | |
|---------|-----------------|---------------|-------|-----------------|---------------|-------|-----------------|---------------|-------|--------------|------|-------|-------------------------------|-----------------------------|--------|---------------------|--|
| | Due to Elephant | Due to Others | Total | Due to Elephant | Due to Others | Total | Due to Elephant | Due to Others | Total | Part | Full | Total | Due to Elephant Victim / Area | Due to Others Victim / Area | Total | | |
| 2011-12 | 41 | 17 | 58 | 28 | 81 | 109 | 0 | 7 | 7 | 498 | 303 | 801 | - 20763 .00 | - | 0 | 20762 .617 | |
| 2012-13 | 80 | 12 | 92 | 28 | 154 | 182 | 0 | 34 | 34 | 732 | 313 | 1045 | - 13265 .73 | - | 0 | 14034 .0803 | |
| 2013-14 | 67 | 26 | 93 | 38 | 170 | 208 | 9 | 29 | - | 863 | 176 | 1039 | 24378 11769 .22 | 967 | 25345 | 12235 .6307 | |
| 2014-15 | 65 | 9 | 74 | 34 | 106 | 140 | 8 | 22 | - | 570 | 209 | 779 | 25819 9638 .27 | 828 | 26647 | 10764 .891 | |
| 2015-16 | 89 | 18 | 107 | 65 | 244 | 309 | 6 | 50 | - | 521 | 144 | 665 | 34260 11643 .75 | 2459 | 36719 | 12621 .14480 | |
| 2016-17 | 66 | 30 | 96 | 29 | 219 | 248 | 20 | 35 | - | 536 | 185 | 721 | 35342 9596 .47 | 2031 | 37373 | 10151 .7902 | |
| 2017-18 | 105 | 27 | 132 | 51 | 232 | 283 | 30 | 82 | 178 | 814 | 464 | 1278 | 40585 10390 .54 | 3527 | 44112 | 11246 .85268 | |
| 2018-19 | 85 | 27 | 112 | 63 | 174 | 237 | 50 | 77 | 30 | 847 | 685 | 1532 | 37782 10513 .28 | 3528 | 41310 | 11450 .42135 | |
| Total | 598 | 166 | 764 | 336 | 1380 | 1716 | 123 | 336 | 208 | 5381 | 2479 | 7860 | 198166 97580 .258 | 13340 | 211506 | 103267 .428 | |



Animal Casualty Scenario...

Human-wildlife conflict refers to the interaction between wild animals and people and the resultant negative impact on people and their property, or wild animals and their habitat. It occurs when growing human populations overlap with established wildlife territory, creating damage of property or life to some people and/or wild animals. In Odisha, several wildlife die due to different reasons. Elephant being a mega species is always in focus.



Flagging off the Herbivore Rescue Van



Gaja Rescue Van, Keonjhar Forest Division

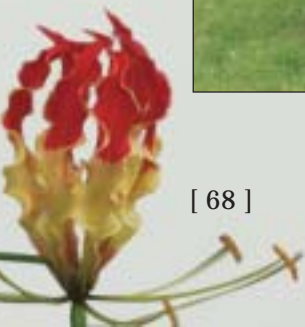




Table showing Elephant death due to various reasons in Odisha during last eight year

Death of Elephants For various Reasons in Odisha

| Sl No | Year | Poaching | Poisoning | Electrocution | | Accident | | | Disease | | Natural | RNK (Inconclusive postmortem) | Retaliatory killing | Total |
|-------|---------|----------|-----------|---------------|------------|----------|------|---------------------------------------------------------------------------|---------|-------|---------|----------------------------------|---------------------|-------|
| | | | | Accidental | Deliberate | Train | Road | Other Accident (Infighting, falling from hill top like natural causes) | Anthrax | Other | | | | |
| 1 | 2011-12 | 4 | 4 | 5 | 8 | 2 | 0 | 5 | 0 | 8 | 17 | 15 | 0 | 68 |
| 2 | 2012-13 | 5 | 3 | 6 | 7 | 11 | 0 | 4 | 0 | 24 | 8 | 14 | 0 | 82 |
| 3 | 2013-14 | 11 | 1 | 1 | 5 | 1 | 0 | 5 | 0 | 14 | 15 | 17 | 0 | 70 |
| 4 | 2014-15 | 4 | 1 | 2 | 2 | 0 | 1 | 12 | 4 | 12 | 9 | 8 | 0 | 55 |
| 5 | 2015-16 | 2 | 0 | 5 | 9 | 1 | 1 | 11 | 12 | 17 | 11 | 16 | 0 | 85 |
| 6 | 2016-17 | 2 | 0 | 3 | 3 | 0 | 0 | 15 | 12 | 23 | 4 | 13 | 0 | 75 |
| 7 | 2017-18 | 2 | 1 | 5 | 4 | 2 | 0 | 19 | 2 | 25 | 4 | 14 | 0 | 78 |
| 8 | 2018-19 | 2 | 0 | 15 | 9 | 7 | 0 | 19 | 3 | 26 | 4 | 8 | 0 | 93 |
| | Total | 32 | 10 | 42 | 47 | 24 | 2 | 90 | 33 | 149 | 72 | 105 | 0 | 606 |

*RNK (Reason not known / inconclusive postmortem)

*Other accident (Infighting, stampade, falling from hill, falling in well, muddy tank & nala, lightening, heart stock tc.)



Species wise mortality trend during 2013-14 to 2017-18 in the State

| Sl No. | Name of Animal | 2011-12 | 2012-13 | 2013-14 | 2014-15 | 2015-16 | 2016-17 | 2017-18 | 2018-19 |
|--------|-----------------|------------|------------|------------|------------|------------|------------|------------|------------|
| 1 | Barking Deer | 26 | 37 | 34 | 52 | 35 | 62 | 46 | 42 |
| 2 | Bat | | 95 | | | | | | |
| 3 | Bird | 117 | 71 | 182 | 72 | 113 | 75 | | 128 |
| 4 | Bison /Gaur | 1 | 5 | | 1 | 3 | 7 | 13 | 6 |
| 5 | Black buck | 5 | 10 | 18 | 16 | 21 | 18 | 40 | 38 |
| 6 | Chowsingha | | 2 | | 1 | 4 | 2 | 5 | 1 |
| 7 | Civet cat | 2 | 4 | 3 | | | 2 | 4 | 1 |
| 8 | Common Langur | 1 | 8 | 12 | 5 | 6 | 22 | 25 | 7 |
| 9 | Crocodile | 2 | 2 | 7 | 9 | 4 | 8 | 1 | 4 |
| 10 | Dolphin | 14 | 16 | 2 | 7 | 8 | 6 | 5 | 10 |
| 11 | Elephant | 68 | 82 | 70 | 55 | 85 | 75 | 78 | 93 |
| 12 | Fishing Cat | | 4 | | | 2 | 3 | 2 | 2 |
| 13 | Flying squirrel | | | | | | 1 | | |
| 14 | GSS Turtle | | | | | 1 | | 2 | |
| 15 | Hyena | 16 | 8 | 10 | 4 | 5 | 9 | 7 | 4 |
| 16 | Jackal | | 1 | 1 | | 2 | | 2 | |
| 17 | Jungle cat | | | | | 1 | | 4 | |
| 18 | Jungle fowl | | | | | | | 3 | |
| 19 | King Cobra | 1 | | | | | 1 | 3 | |
| 20 | Leopard | 1 | 3 | 4 | 5 | 8 | 4 | 2 | 6 |
| 21 | Monitor Lizard | 1 | 1 | 16 | | 2 | 1 | 1 | |
| 22 | Mouse Deer | 2 | | | 1 | 4 | 6 | 7 | 1 |
| 23 | Nilgai | 1 | 1 | | 1 | 1 | | 1 | |
| 24 | Olive ridley | | | | | | | 3 | 1 |
| 25 | Pangolin | 2 | 2 | | 1 | 2 | 5 | 1 | 1 |
| 26 | Peacock | 13 | | 1 | 2 | 31 | 4 | 2 | 4 |
| 27 | Porcupine | 4 | 2 | 1 | 4 | 1 | 7 | 5 | 4 |
| 28 | Porpoise | | | | | | | 2 | 1 |
| 29 | Python | 4 | | 2 | 1 | 4 | 5 | 2 | 2 |
| 30 | Rabbit/Hare | 2 | | | 6 | 4 | 4 | 9 | |
| 31 | Ratel | 3 | 5 | 1 | 1 | | 1 | 4 | 5 |
| 32 | Sambar | 9 | 14 | 9 | 18 | 25 | 27 | 23 | 31 |
| 33 | Shark | | | | | | | 1 | 26 |
| 34 | Sloth Bear | 17 | 25 | 38 | 32 | 38 | 34 | 39 | 33 |
| 35 | Snake | | | | | | 7 | | |
| 36 | Spotted Deer | 41 | 33 | 40 | 42 | 78 | 70 | 103 | 79 |
| 37 | Squirrel | | | 1 | 1 | 6 | 4 | 2 | 2 |
| 38 | Tiger | | 1 | | 1 | | 1 | 1 | 2 |
| 40 | Whale | | | | 2 | 2 | 2 | 1 | 2 |
| 41 | Wild Boar | 27 | 36 | 32 | 49 | 64 | 81 | 96 | 104 |
| 42 | Wild Cat | 2 | | | | | 4 | | |
| 43 | Wolf | | | 1 | 2 | 2 | 4 | 4 | |
| | Total | 382 | 468 | 485 | 391 | 562 | 562 | 549 | 640 |

The instances of man animal interface have grown in the recent years in Odisha, particularly with respect to wild elephants and bears.

Steps to Mitigate the Issues

In order to mitigate human-animal conflict issue, a three-pronged strategy is being adopted. Which are implementation of Site specific wildlife conservation plan, reprisal of conflict through deployment of anti-depredation squads and prompt payment of compassionate grant at Govt. approved rates.

A. Site specific Management Plan

Odisha, being rich in wildlife wealth has excellent mineral resources also. It is very likely that during the process of mining and other developmental activities the wildlife and their habitats are affected adversely. So, a site specific wildlife conservation plan has been made mandatory wherever required for any clearance of mining or industrial projects. The Plan takes care of protection & conservation requirements of wildlife and improvement of their habitat.

Site specific Wildlife Management Plan for Mining

| SL No | Division | No. of Projects | Total Project Area (Ha) | Forest Area (Ha) | Total Amount (in lakhs) for Wildlife Conservation |
|-------|---------------|-----------------|-------------------------|------------------|---------------------------------------------------|
| 1 | Keonjhar | 62 | 20150.33 | 11164.79 | 15807.20 |
| 2 | Bonai | 41 | 8742.93 | 6416.08 | 13624.04 |
| 3 | Angul | 22 | 16209.45 | 3277.69 | 12239.56 |
| 4 | Cuttack | 19 | 3902.50 | 1783.18 | 5739.87 |
| 5 | Dhenkanal | 8 | 1838.12 | 287.99 | 2946.55 |
| 6 | Athgarh | 5 | 285.62 | 22.473 | 4976.93 |
| 7 | Athmallik | 1 | 109.69 | 20.72 | 363.29 |
| 8 | Sundargarh | 8 | 4527.45 | 899.72 | 3139.82 |
| 9 | Deogarh | 3 | 258.98 | 92.68 | 1283.63 |
| 10 | Rourkela | 4 | 1586.33 | 13.22 | 1081.07 |
| 11 | Jharsuguda | 11 | 8338.51 | 2669.65 | 5785.67 |
| 12 | Sambalpur | 4 | 1901.79 | 307.81 | 1545.32 |
| 13 | Bargarh | 1 | 502.22 | 73.32 | 238.00 |
| 14 | Rairakhol | 1 | 153.27 | 70.05 | 868.82 |
| 15 | Rairangpur | 5 | 1618.64 | 1134.88 | 1684.17 |
| 16 | Kalahandi (S) | 2 | 1442.55 | 1321.50 | 5223.00 |
| 17 | Khariar | 1 | 5100.00 | 230.13 | 250.00 |
| 18 | Berhampur | 2 | 2516.66 | 2464.05 | 186.98 |
| 19 | Boudh | 1 | 31.45 | 3.54 | 163.80 |



WILDLIFE ODISHA 2019

| | | | | | |
|-------|-----------------------------------------|-----|---------|----------|----------|
| 20 | Rayagada | 4 | 675.99 | 493.62 | 705.23 |
| 21 | Koraput | 4 | 2709.95 | 1699.63 | 3965.10 |
| 22 | Baripada | 2 | 66.99 | 45.81 | 1024.61 |
| 23 | Karanjia | 1 | 119.23 | 19.40 | 463.24 |
| 24 | Chandaka WL | 5 | 11.28 | 11.17 | 1992.65 |
| 25 | Keonjhar WL | 3 | 1376.10 | 962.60 | 1953.39 |
| 26 | Balasore WL | 2 | 0.59 | 0.19 | 371.88 |
| 27 | Mangrove Forest Division (WL), Rajnagar | 2 | 1389.80 | 38.70 | 2004.00 |
| 28 | Bamra WL | 1 | 63.38 | 23.61 | 166.34 |
| Total | | 225 | 85629.8 | 35548.20 | 89794.16 |

List of EDC involving in Wildlife Conservation

| SLNo | Name of the Division | Name of the District | No of EDC |
|-------|----------------------|----------------------|-----------|
| 1 | Satkosia WL | Angul | 37 |
| 2 | Mahanadi WL | Nayagarh | 15 |
| 3 | Balasore WL | Balasore | 03 |
| 4 | STR | Mayurbhanj | 182 |
| 5 | Puri WL | Puri | 29 |
| 6 | Chandaka WL | Khurda | 27 |
| 7 | Rajnagar WL | Kendrapara | 48 |
| 8 | Bhadrak WL | Bhadrak | 0 |
| 9 | Kalahandi south | Kalahandi | 14 |
| 10 | Sunabeda WL | Nuapara | 04 |
| 11 | Keonjhar WL | Keonjhar | 05 |
| 12 | Baamra WL | Sambalpur | 25 |
| 13 | Hirakud WL | Sambalpur | 23 |
| 14 | Balliguda | Kandhamal | 80 |
| 15 | Parlakhemundi | Gajapati | 04 |
| 16 | Dhenkanal | Dhenkanal | 23 |
| Total | | | 519 |

Debasthali , Similipal Tiger Reserve





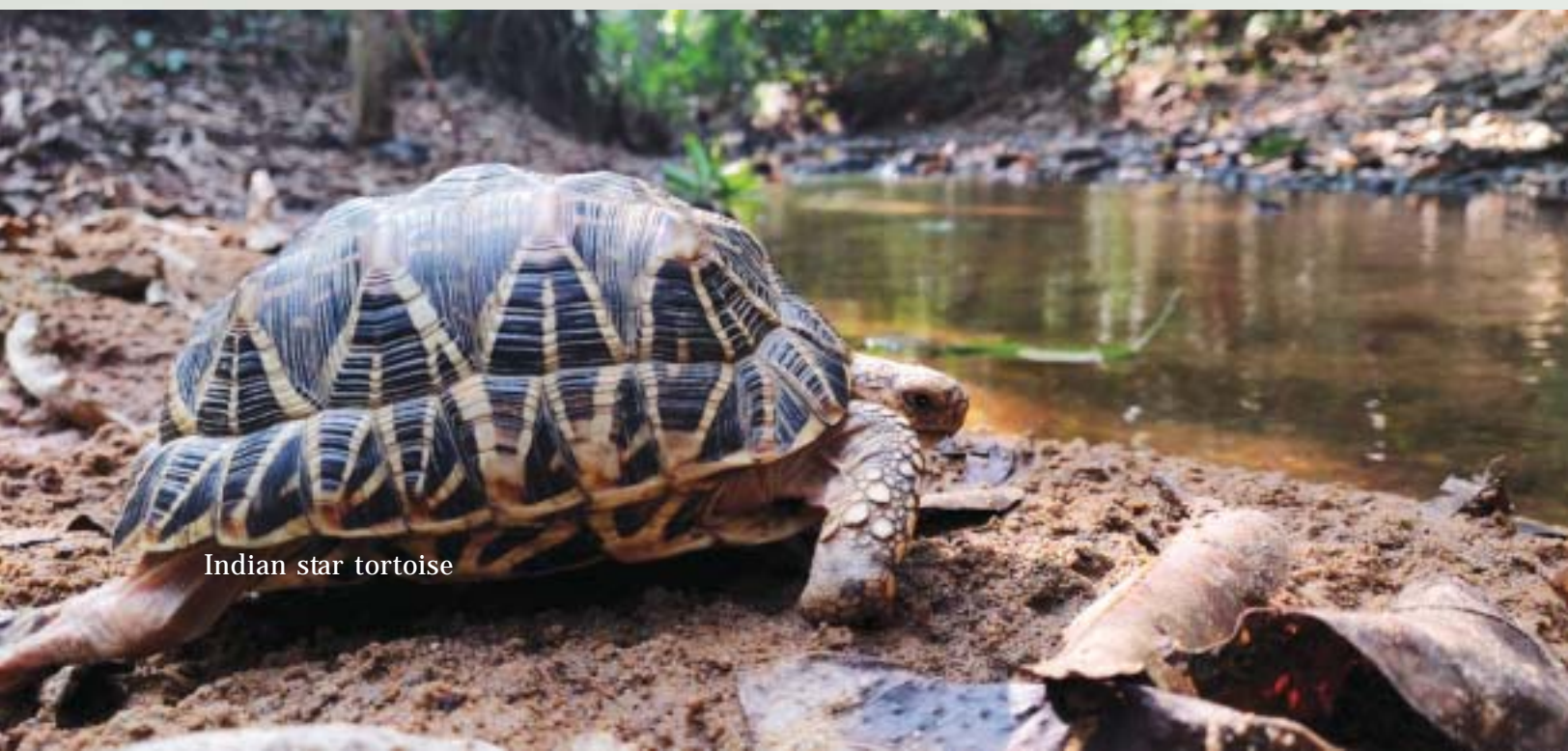
Payment of Compassionate Grant

Compassionate payment is one of the most important mitigational measure in the field of animal depredation. In the current year, the amounts for some items of compassionate payment have been revised.

Table showing Amounts Approved for Compassionate payments

Rate of Compassionate payment due to depredation by specified wild animals under provisions of Wildlife (Protection) (Odisha) Rules, 1974

| Sl No | Type of depredation | Reference of Wildlife (Protection) (Odisha) Rule | Current Rate of Compassionate payment |
|-------|-------------------------------|--------------------------------------------------|-------------------------------------------------------|
| 1 | Human kill | 45-AA | Rs.4.0 lakhs |
| 2 | Permanent injury | 45-BB | Rs.1.0 lakh |
| 3 | Temporary injury | 45-BB | Rs.5000/- + free treatment in Govt. Hospital |
| 4 | Bullock/Cow/Buffalo | 45-CC | Rs.5000/- |
| 5 | Calf | 45-CC | Rs.2500/- |
| 6 | Sheep / Goat | 45-CC | Rs.2000/- |
| 7 | Lamb | 45-CC | Rs.750/- |
| 8 | Crop damage (paddy & Cereals) | 45-EE | Rs.10000/ per Acre |
| 9 | Crop damage (Cash crop) | 45-EE | Rs.12000/ per Acre |
| 10 | House damage (part) | 45-FF | Rs.2000/- |
| 11 | House damage (full) | 45-FF | Rs.10000/+ allotment of house under 'Mo Kudia' Scheme |



Indian star tortoise



Trend of Compassionate Grant Payment in Odisha

Compassionate Amount paid in Odisha for elephant depredation from 2010-11 onwards (Rupees in lakhs)

| Year | Human Kill | | Human Injury | | Cattle Kill | | House Damage | | Crop Damage | | | Total |
|---------|----------------|-------------|----------------|-------------|----------------|-------------|----------------|-------------|-------------|-----------------|-------------|----------|
| | No. of victims | Amount paid | No. of victims | Amount paid | No. of victims | Amount paid | No. of victims | Amount paid | Victims | Area (in acres) | Amount paid | |
| 2011-12 | 61 | 70.130 | 28 | 2.893 | 7 | 0.260 | 1149 | 46.417 | | 11092 | 267.448 | 387.148 |
| 2012-13 | 80 | 147.930 | 35 | 9.650 | 6 | 0.314 | 1075 | 38.666 | | 18456.26 | 800.318 | 996.877 |
| 2013-14 | 64 | 122.400 | 32 | 9.923 | 9 | 0.375 | 916 | 29.645 | | 13211.534 | 983.210 | 1145.552 |
| 2014-15 | 99 | 196.565 | 27 | 8.320 | 7 | 0.350 | 1196 | 46.465 | | 14788.3482 | 1346.045 | 1597.745 |
| 2015-16 | 80 | 203.210 | 65 | 19.710 | 4 | 0.175 | 1136 | 47.097 | 38239 | 12496.7612 | 1149.065 | 1419.257 |
| 2016-17 | 88 | 251.333 | 43 | 17.770 | 4 | 0.200 | 955 | 36.941 | 43201 | 11273.61 | 1203.076 | 1509.320 |
| 2017-18 | 90 | 259.800 | 27 | 8.900 | 26 | 1.245 | 1557 | 94.848 | 43831.3 | 11545.0811 | 1176.289 | 1541.082 |
| 2018-19 | 80 | 270.787 | 34 | 16.700 | 42 | 2.138 | 1557 | 86.535 | 33838 | 9176.99365 | 955.004 | 1331.164 |

Note: The numbers of victims, area of crop damaged and amount of compassionate grant paid during any year reflect the position of payment during that year. It includes the victims of the said year as well as back log of previous years.





GAJABANDHU SCHEME

The instances of man-animal conflict have grown in recent years in our state. There are cases of human kill, human injury, cattle kill, house damage and crop damage and also retaliating killing of wild elephant. Elephants are killed due to poaching, electrocution, road accidents, railway accident and deliberate electrocution. Perceived reasons for human-elephant conflict in our state are habitat destruction, fragmentation of corridors due to urbanisation, industrialisation, electrification mining operation, roads, railways, irrigations increasing civil constructions etc. Escalation of human-elephant conflict is noted with deep concern now.

Steps taken:

Forest department is strategically working in the field for mitigation of human-elephant conflict. (1) Dedicated trackers elephant squads have been deployed in the vulnerable locations for the protection and conservation of heritage animal. (2) For conservation of the mega Species, tracking of movement of elephants, fixation of signages in vulnerable area, pairing of VHF with railways, creation of WhatsApp group and limitations of speed for trains are being adopted in state. (3) Coordination meeting with Railway and Energy Department are being organised to prevent train accident / electrocution. (4) Anti-depredation committee and rapid response team have also been constituted. (5) Forest field staffs are being trained to improve intelligence to prevent poaching and handling effectively and processing wildlife cases to ensure higher rates for conviction. (6) Gaja vehicles are also introduced for the purpose. (7) Restoration of natural habitat, planned management and landscape approach of protection measures are given importance.

However, still the need of people participation is felt to minimise the elephant-man conflict to protect life of animal and human being due to following.

Constraints:

- (1) Though the elephant trackers and dedicated protection squads are engaged in each division, the number of personnels are not sufficient to control the conflict in every nook and corner of forest area / village area of a broad part of our state.
- (2) Habitat fragmentation resulted in movement of elephants in large habitat area and not confined to a particular forest / nearby village / surrounding village area, demands landscape approach of strategies for the protection of elephant in a wider aspect, which need involvement of people participation.
- (3) Changing food habitats of elephants covers larger areas of elephant movement towards village area / nearby crop fields and the local inhabitants encountered elephants and sometimes became victim and killed by elephants.
- (4) Change in their migratory routes frequently creates a challenge to get information and immediate reach to the point to access the problem by limited number of field staffs.
- (5) Limitations of Networks / communication accessibility in remote area is also a hindrance for quick reach by the field staffs from one station to remote village areas / forest area.





- 6) Elephants separated from the herd/loan tusker also showed aberrant behaviours, leading to human casualty.
- 7) Time duration to reach the area is also a cause of intensifying loss to villagers of elephant movement area

Purpose

Therefore involvement of people participation to minimize the man-animal conflict and improvement of motivation / awareness among villagers/ getting cooperation, proposal for “Gajabandhu” has been formulated.

1. The vulnerable villages of frequent elephant movement will be identified by DFO / RO / FR/ FG in each Division.
2. Gajabandhu will be engaged by Forest Department. One of the villagers will be selected by the members of the VSS/EDC of that village of elephant movement area.
3. Gajabandhu will help the field staff to minimize the man-animal conflict.
4. Gajabandhu will track the elephant movement in nearby forest and the villages and also inform to the field staff immediately.
5. He will make alert the villagers regarding anticipated movement and will motivate villagers not to venture into forest particularly during elephant movement and during early morning, the wee hour, when most of human kill happens by attack of elephants.
6. He will coordinate with field staff and villagers for drive out of elephants to forest area.
7. Gajabandhu will create awareness regarding improvement of natural habitat.
8. He will help the farmers/ victims to get the compassionate grant for crop damage/ house damage/human kill/ animal kill in that area.
9. Gajabandhu will improve the intelligence networking to counter poachers and suspected people planning to illegally damage elephants in order to protect own crop field etc.
10. It will help our field staffs not to be targeted and assaulted by villagers/mob.

Modalities Proposed

1. Gajabandhu will be selected by VSS/EDC of the affected village.
2. For cluster of villages, all the VSS/EDC will be involved in engagement of Gajabandhu.
3. It is proposed to pay him incentive of Rs9000/-PM (including mobile phone recharge) to Gajabandhu through VSS/EDC.
4. He will make immediate communication to villagers and also to forest staffs on point of incident and regarding elephant movement.
5. He is supposed to be in good coordination with villagers.





CHAPTER

X

COMMUNITY BASED NATURE TOURISM IN ODISHA

40 Community Managed Nature Tourism destinations are now successfully functioning in different parts of State. Forest dependent communities are stakeholders in these Ecotourism projects and around 600 trained local community members are managing these destinations (285 rooms, 613 capacity) and earning their livelihood. It has been an alternative source of livelihood for the forest dependent communities. During the year 2018-19 the revenue generated was 5.6 Crore and twenty thousand visitors stayed in different Nature Camps which is a giant leap as compared to 1.56 Crore revenue during 2016-17. More than One Crore revenue was generated by each, Similipal Nature Camps & Satkosia Sands Resort & Nature Camp during the year 2018-19. Booking of all destinations is online through www.ecotourodish.com.

Activities and works taken up during 2018-19

Boating facilities have been created in different Ecotourism destinations like Bhitarkanika, Debrigarh, Nuanai, Bichitrapur, Satkosia, Chilika, etc. For safety of tourists Decks & Floating Jetties have been constructed and life saving jackets have been made available for all ecotourists. Other activities like Cycling, Birding, Sports, Trekking, Farm land visits, Cultural programmes, etc. by local communities is being introduced in all destinations. Ecoguides (one person acquainted with local trees, herbs, birds, animals, etc. from the community) are present in all Nature Camps. Display of wildlife movies, library facilities along with Souvenir shops in all destinations. Strengthening of existing infrastructures created during previous years and creation of new infrastructures has been the prime focus this year beside adding different activities to Nature Camps like Cycling, Boating (Boats & Jetties), Jungle Safaris, etc. Major thrust was also given on training of village communities managing those Nature Camps by IHM, BBSR & IITTM, BBSR in hospitality sector and certificate has also been awarded to them by the institutions. 8 new rooms have been added in Debrigarh Nature Camp adjoining Hirakud Lake and Jungle Safari with 4 Safari vehicles was initiated for the visitors. Khandadhar Nature Camp with 10 number of cottages facing Khandadhar Water fall was opened for visitors during this year. Deras & Godibari Nature Camps with 16 rooms in Chandaka Sanctuary was also opened for nature lovers with all activities like Cycling, Trekking, Birding, etc. The other major attraction has been opening of Mangalajodi Nature Camp in Chilika with 12 rooms on hill slope overlooking Chilika lake. Rajhans Nature Camp also started in Chilika with 10 numbers of air conditioned tents on Rajhans Island within Chilika Lagoon. Amenities for day visitors to Mangalajodi i.e., watch tower, sitouts, cafeteria, toilets, etc. has been created. Some major





Debrigarh Nature Camp



Community members of Satkosia Nature Camp



Deras Nature Camp, Chandaka



Satkosia Sands Resort and Nature Camp, Badmul



Daringibadi Tribal Cottages



Mangalajodi Nature Camp, Chilika





ETG members of Mandasaru Nature Camp, Phulbani



Tree house at Kaliamba Nature Camp, Ganjam



National Bird Festival



Eco-tourism Workshop



Polythene free campaign



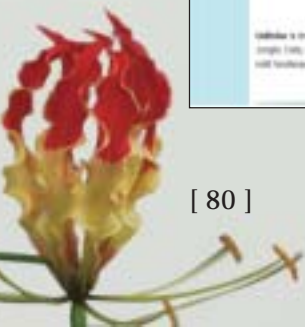
improvements have been made in Nandankanan Zoological Park - 66 hector of Kanjia Lake is being deweeded (work under process) and boating has been introduced for visitors. Bharatpur Jungle Safari at Chandaka with 9 numbers of 12 seated open Jeeps started for the visitors this year. 20 Sq.km area has been developed for Bharatpur Jungle Safari. 28 km of road is used for safari (patrolling route has been developed for safari) which moves through meadows and deep forests. Special focus is given for enrichment of wildlife habitat inside the Safari area and process for introduction of herbivores is under progress. A new entry gate at Bharatpur has also been created.

Eco-tour website:

www.ecotourodisha.com has been embedded in the website of Odisha Tourism website www.odishatourism.gov.in for better promotion of ecotourism destinations & increasing booking of Nature Camps. Social media promotion of tourism & ecotourism destinations of Odisha has started since 2018 by Tourism Department on regular basis in Face book, Twitter, Instagram etc. Photography Trail was organised by Forest Dept and Tourism Dept in which 30 wildlife photographers from all over India participated and visited all important wildlife areas of Odisha. The trail was scheduled from 25th Feb 2019 to 3rd March 2019 covering Bhitarkanika, Chandaka, Chilika, Debrigarh&Satkosia. The photographers were given an opportunity to stay in the Nature Camps in those places. Interactive session was scheduled with local community managing Ecotourism destinations for sharing the relevance & objectives of the project with them. From January 2019 online registration for Travel Agents & Taxi Operators are made available in www. ecotourodisha.com with 8 % instant commission at the time of booking. Provision to book for up to 3 destinations through Package Tour Booking option has been provided for increasing the involvement of travel agents.



Cover Page of website www.ecotourodisha.com





2nd National Chilika Bird Festival was organised at Mangalajodi on 27th-28th January 2019 followed by visit to Bhitarkanika on 3rd day of festival. Fest attracted tourist, bird watchers, wildlife photographers, painters and researchers. Around 500 participants from Odisha and outside participated in the fest.

Promotions

Wildlife Wing, OFDC, Ltd. and Tourism Department have jointly organised workshops on Odisha Ecotourism in different parts of India i.e. Delhi, Kolkatta, Gauhati, etc.



Steps taken to integrate the project with the local community :

1. All the 40 Ecotourism destinations in Odisha are completely managed by the local forest dependent communities, mostly tribal's and rural women. Project is therefore "Community Managed Nature Tourism in Odisha". They have been trained in hospitality & allied sector by Govt institution.
2. Directly, 600 community members are managing 40 Ecotourism destinations and indirectly 5 to 6 villages per Ecotourism destination are earning their livelihood from those by providing vegetables, food items, milk, nonveg products, travel etc.
3. Eco guides, travel agents, boatman etc. employed in those Ecotourism destinations are local villagers only.
4. Rural women & tribal communities in protected areas who were dependent on forest products for their livelihood and were also involved in poaching have been enrolled in the management committee of the Nature Camps.
5. Programme like "Poacher Turned Protectors", "Know Your Birds" etc. are running in all destinations by the local community.





Awards & Recognitions:

Odisha Ecotourism has received Best Eco Tourism Initiative by FICCI (Federation of Indian Chambers of Commerce & Industry). The award was awarded to Forest & Environment Department, Govt Of Odisha on 23rd August at New Delhi.



Success Stories:

One of those 40 Ecotourism destinations in Odisha is “Satkosia Sands Resort & Nature Camp” at Badmul in Satkosia Tiger Reserve managed by 28 villagers of 3 villages inside the Tiger Reserve. The destination has earned 1.03 Crore during the financial year 2018-19, highest ever income recorded by any community managed project in India. During the year 2018-19, Similipal Nature Camps too earned One Crore Seventy Lakh.



Printed from

TIMES OF INDIA

Similipal earns Rs 1 crore from nature tourism projects

TNN | Mar 3, 2019, 11.09 AM IST

BHUBANESWAR: The Similipal Tiger Reserve, the fourth largest reserve in India, has earned Rs 1 crore from the community-managed nature tourism projects this fiscal. The local tribal communities engaged in it took home 90% of the amount as wages, for managing and maintaining the camps, while 10% went to the government.

Similipal has four nature tourism sites located at Jamuani, Kumari, Gurguria and Ramtirtha. The project has been so named because it aims to motivate people to protect nature through tourism activity. These facilities developed by the forest department offer a natural ambience and local delicacies to tourists to spend the night in the forest. The visitors can also enjoy trekking and cycling.

Nodal officer (eco-tourism) Anshu Pragyan Das said tribal communities like Kolha, Bhumija, Saunti, Santal, Bhuyana and Bathudi have been engaged in nature tourism camps to provide hospitality to the tourists. "Around 400 locals benefit from these camps in Similipal alone," she said.

The Gurguria nature camp has generated Rs 14,00,783, Jamuani Rs 36,63,564, Kumari Rs 34,61,236 and Ramatirtha Rs 14,75,710. Altogether 9,000 tourists stayed at these facilities, apart from those who visit the forest during the day and return by evening.

Sisir Naik, president of ETG at Kumari and one of the beneficiaries, said it is like advocating forest

protection and giving hospitality to tourists. "It is so satisfying. We are running the camps on our own and earning," he said.

Forest officials said villagers and forest department were at loggerheads before 2009 when Maoists had launched an attack at Chahala inside the reserve. Gradually, the forest department strategised to win the hearts of locals, who were engaged in the eco-tourism process. "This helped us control forest and poaching to a great extent. Many transformed hardcore poachers are now working as eco-guides," said an officer.

Similipal spread over 2,750 sq km which boasts Tigers in its core area according to the last census. It is the only Tiger Reserve in the world to have melanistic tigers. Besides tourists from the country, visitors from Italy, Korea, Afghanistan and France have visited Similipal and stayed in the nature camps, officials said. In this financial year 40 nature tourism sites in the state have earned Rs.5.2 crore.



Measures taken to mitigate negative impacts :

1. Use of plastic is prohibited in Ecotourism destinations.
2. Tourists and vehicles are permitted as per the approved "Carrying Capacity" of the landscapes as mentioned in the State Ecotourism policy and respective Management Plans.
3. Booking of Ecotourism destination is through a common portal ie. www.ecotourodisha.com and sharing of this revenue is directly through online banking managed by the community themselves. Financial transparency is ensured.
4. Loud music, parties and functions are prohibited in Nature Camps.
5. As Ecotourism destinations are providing job opportunities for the local communities, they themselves are conserving & protecting the forest & wildlife and also maintaining cleanliness of the landscape.
6. The landscapes neighboring those 40 Ecotourism destinations have witnessed zero forest fire & poaching in last three years.



CHAPTER

XI

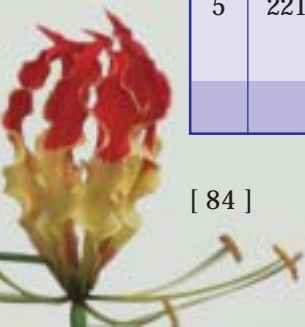
BUDGET

Projects and Schemes....

Wildlife organization has different schemes for wildlife management which are funded under Administrative Expenditure and Programme Expenditure.

Budget provision, Funds released by GoI, sanctioned by State Govt. and Expenditure incurred under Administrative Expenditure (EOM) & Programme Expenditure in respect of Wildlife Organisation during 2018-19 (*Rs. in lakh*).

| Sl. No. | Code No. | Name of the Scheme | Budget Provision | Released by Govt. of India | Sanctioned by State Govt. (Central + State share) | Expenditure incurred |
|------------------------------|----------|-------------------------------------------------------------------------------------------|------------------|----------------------------|---------------------------------------------------|----------------------|
| 1 | | Administrative Expenditure (Establishment, Operation & Maintenance Expenditure) | 7125.49 | 0.00 | 7125.49 | 6362.95 |
| PROGRAMME EXPENDITURE | | | | | | |
| STATE SECTOR SCHEMES | | | | | | |
| 1 | 1184 | Relocation of villages from Sanctuaries and National Parks | 0.01 | | 0.00 | 0.00 |
| 2 | 3128 | Wildlife protection and conservation measure | 2220.00 | | 2220.00 | 2219.00 |
| 3 | 3173 | Management of Elephant & Corridor | 1110.00 | | 1110.00 | 1109.51 |
| 4 | 2316 | Development of Eco-Tourism | 854.99 | | 854.99 | 844.41 |
| 5 | 2216 | Development and beautification of Nandankanan Zoo | 588.01 | | 588.01 | 588.01 |
| | | Total State Sector | 4773.01 | 0.00 | 4773.00 | 4760.93 |





| Sl No. | Code No. | Name of the Scheme | Budget Provision | Released by Govt. of India | Sanctioned by State Govt. (Central + State share) | Expenditure incurred |
|------------------------------------|----------|--------------------------------------------------------------|------------------|----------------------------|---------------------------------------------------|----------------------|
| CENTRALLY SPONSORED SCHEMES | | | | | | |
| 1 | 0361 | Elephant Management Project | 595.00 | 197.2800 | 328.8000 | 328.800 |
| 2 | 2313 | Integrated Development of Wildlife Habitats | 986.61 | 497.18904 | 828.6484 | 806.0884 |
| 3 | 2239 | Satkosia Tiger Reserve | 1732.04 | 422.8720 | 775.2760 | 622.810 |
| 4 | 1283 | Similipal Tiger Reserve | 1554.33 | 679.8500 | 1283.490 | 1264.3327 |
| | | 4th All India Tiger Estimation (Revalidated) | | 42.0000 | 70.0000 | 70.000 |
| 5 | 1282 | Similipal Bio-sphere Reserve | 1000.00 | 134.6454 | 224.4090 | 224.4090 |
| 6 | 0175 | Conservation and management of Mangroves | 185.96 | 0 | 68.3840 | 68.384 |
| | | Total Central Sector | 6053.94 | 1973.83644 | 3579.0074 | 3384.8241 |
| | | Grand Total Programme Expenditure | 10826.95 | 1973.83644 | 8352.0074 | 8145.7541 |
| OUTSIDE BUDGET | | | | | | |
| 1 | 0175 | CSS-Conservation and management of Mangroves (Central share) | | 102.576 | | 102.576 |



Watch tower Talaganda, Dhenkanal Forest Division



WILDLIFE PROTECTION, CONSERVATION AND MANAGEMENT UNDER CAMPA

There was approved outlay of Rs.12244.00 lakh under CAMPA APO: 2017-18 against which the financial achievement has been made for Rs.10654.24 lakh for different activities under taken in the interest of Wildlife Conservation & Management as per details shown below

Table showing the details of wildlife protection, conservation and management in the action plan for 2017-2018 under CAMPA

| Activities | Approved financial outlay (Rs. in lakhs) | Financial Achievement (Rs. in lakhs) |
|---------------------------------------------------------------------------|------------------------------------------|--------------------------------------|
| A-Wildlife Management | | |
| Protection Activities | 1865.37 | 1676.09 |
| Anti-depredation Activities | 2283.00 | 2077.94 |
| Communication | 956.97 | 907.24 |
| Infrastructure Development | 1206.32 | 1157.22 |
| Habitat Improvement | 1009.38 | 912.10 |
| Maintenance of Zoos, Rescue centre and Protected areas | 871.96 | 852.52 |
| Research Activities | 35.00 | 28.31 |
| Others | 60.00 | 46.93 |
| Total-A Wildlife Management | 8288.00 | 7658.35 |
| B-Implementation of Site Specific Wildlife Conservation Plan | 3000.00 | 2126.89 |
| C-Preparation of Comprehensive Wildlife Management Plan | 73.00 | 0.00 |
| D-Relocation of families from protected Areas/Tiger Reserve | 750.00 | 750.00 |
| E-Implementation of Action Plan for Soil & Moisture Conservation Measures | 100.00 | 100.00 |
| F-Implementation of Train-collision-mitigation Plan | 33.00 | 19.00 |
| Grand Total (A+B+C+D+E+F) | 12244.00 | 10654.24 |

Anti-poaching camp Hitinda, Dhenkanal Forest Division





Keeping in view the CAF Act, 2016 and the CAF Rules, 2018, the financial target for **Rs.15655.68** lakh has been proposed in **CAMPA APO 2019-20** for different activities to be under taken for Management of wildlife inside and outside the protected areas as per details shown below:

Table showing the details of wildlife management activities inside and outside the protected area in CAMPA APO 2019-20.

| Activities | Approved financial outlay (Rs. In lakh) |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|
| A-Wildlife Management (80 % NPV) | |
| Protection Activities | 1926.11 |
| Forest Fire Prevention and Control | 574.12 |
| Anti-depredation Activities | 2885.16 |
| Voluntary Relocation of Villages from Protected Areas and Tiger Reserve | 1571.00 |
| Habitat Improvement | 1547.73 |
| SMC in Wildlife Habitat | 470.885 |
| Implementation of Action Plan for Soil Moisture Conservation Measures | 100.00 |
| Establishment, Operation and maintenance of animal rescue centre and veterinary treatment facilities for wild animals | 471.50 |
| Supply of wood-saving cooking appliances and other forest produce saving devices in forest fringe villages as specified by the National Authority from time to time; | 141.88 |
| Management of Biological diversity and Biological resources. | 10.00 |
| Total- (80 % of NPV) | 9698.385 |
| Wildlife Management (20 % NPV) | |
| Strengthening of Communication facilities. | 1112.57 |
| Infrastructure Development | 1090.00 |
| Research Activities | 35.00 |
| Publicity & Awareness | 75.00 |
| Total- (20 % of NPV) | 2312.57 |
| Total- (80 % + 20% of NPV) | 12010.96 |
| B- Preparation of Comprehensive Wildlife Management Plan | 73.00 |
| C- Implementation of Site Specific Wildlife Conservation Plan | 3571.72 |
| Grand Total {A(80 % + 20%)+B+C} | 15655.68 |

Otter, Bhitarkanika National Park



Site Specific Management Plan for different Divisions in Odisha

| Sl. No. | Division | No. of Projects | Total Project Area (in Ha) | Forest Area (in Ha) | Total Amount (Rs. in lakh) for Wildlife Conservation |
|---------|-----------------------------------------|-----------------|----------------------------|---------------------|------------------------------------------------------|
| 1 | Angul | 26 | 16345.56 | 3320.66 | 13813.44 |
| 2 | Athgarh | 5 | 285.62 | 22.47 | 4668.84 |
| 3 | Athmallik | 2 | 117.90 | 24.66 | 503.51 |
| 4 | Balasore WL | 2 | 0.59 | 0.19 | 371.88 |
| 5 | Bamra WL | 2 | 63.38 | 23.61 | 190.74 |
| 6 | Bargarh | 1 | 502.22 | 73.32 | 272.08 |
| 7 | Baripada | 2 | 66.99 | 45.81 | 1024.61 |
| 8 | Berhampur | 2 | 2516.66 | 2464.05 | 186.98 |
| 9 | Bhadrak WL | 1 | 0.33 | 0.33 | 28.08 |
| 10 | Bonai | 44 | 9049.78 | 6592.38 | 15722.80 |
| 11 | Boudh | 1 | 31.45 | 3.54 | 163.80 |
| 12 | Chandaka WL | 5 | 11.28 | 11.17 | 1992.65 |
| 13 | Cuttack | 23 | 4339.36 | 1896.66 | 7096.58 |
| 14 | Deogarh | 7 | 744.14 | 306.47 | 2722.34 |
| 15 | Dhenkanal | 10 | 2769.46 | 396.95 | 5154.93 |
| 16 | Hirakud WL | 1 | 0 | 0 | 13.82 |
| 17 | Jeypore | 1 | 2.89 | 2.89 | 282.51 |
| 18 | Jharsuguda | 13 | 9650.17 | 3515.21 | 6421.18 |
| 19 | Kalahandi (S) | 2 | 1442.55 | 1321.50 | 5666.83 |
| 20 | Karanjia | 2 | 135.74 | 30.74 | 1166.50 |
| 21 | Keonjhar | 66 | 22425.15 | 12056.17 | 19947.11 |
| 22 | Keonjhar WL | 3 | 1376.10 | 962.60 | 1953.39 |
| 23 | Khariar | 1 | 5100.00 | 230.13 | 250.00 |
| 24 | Khordha | 1 | 86.53 | 0.00 | 238.02 |
| 25 | Koraput | 5 | 3157.20 | 2146.88 | 4902.84 |
| 26 | Malkangiri | 1 | 9.19 | 7.74 | 258.75 |
| 27 | Mangrove Forest Division (WL), Rajnagar | 2 | 1389.80 | 38.70 | 2004.00 |
| 28 | Nayagarh | 1 | 510.17 | 59.72 | 561.96 |
| 29 | Rairakhol | 1 | 153.27 | 70.05 | 868.82 |
| 30 | Rairangpur | 5 | 1618.64 | 1134.88 | 1684.17 |
| 31 | Rayagada | 4 | 675.99 | 493.62 | 1234.34 |
| 32 | Rourkela | 8 | 1950.17 | 91.34 | 3813.85 |
| 33 | Sambalpur | 5 | 2504.20 | 500.43 | 2167.79 |
| 34 | Sundargarh | 11 | 4527.45 | 899.72 | 3777.07 |
| | Total: | 266 | 93559.93 | 38744.59 | 111126.21 |





Wildlife Organisation
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