

# ODISHA

Odisha, the most captivating region of India, is often referred as an attractive treasure house of cultures and customs, religions and traditions, languages and literature, art and architecture, scenic beauties and wildlife. Exquisite temples and historic monuments, abundant greenery, virgin beaches, serpentine rivers, mighty waterfalls, forest-clad blue hills of Eastern Ghats with rich wild life, makes Odisha an unforgettable destination of India where travellers feel the magic and always return for more. The land, while retaining its pristine glory, also offers the visitors the most modern amenities.

A visual feast of colours, varieties and surprises, a cultural journey into one of the oldest civilizations in the world and as a holiday destination, Odisha promises wonderful experience.

## PEOPLE OF ODISHA

Odisha accounts for 3.47 per cent of the total population of country. The population density of the state is 269 as against the national average of 382 per sq.km. The sex ratio (Females per one thousand males) of the state encouragingly stands at 978 against the national ratio of 940. However, urban sex ratio of Odisha remains lower at 934 as

against the rural sex ratio of 988. The total decadal growth is 13.97 per cent. It was at 16.25 in 2001 census.

**Literacy :** Literacy of Odisha has been increased from 63.08 in 2001 census to 73.45 in 2011 census. The female literacy rate stands at 64.36 whereas the male literacy rate is 82.40.

## Language

Odia, one of the oldest languages in the country having Sanskritic origin, is the predominant language spoken in the State and its outlying tracts. It is spoken by about 84 per cent of the population of Odisha. Hindi, Urdu, Bengali and Telugu are widely understood and sometimes spoken. Odia is the official language of the State. English is spoken by the educated few.

Though Odisha possesses fewer cities than most other states of the country, almost all the languages recognised by the Constitution have their speakers among the people. Apart from the speakers of Hindi and Urdu, there are the speakers of other languages like Punjabi, Gujarati, Malayalam, Tamil and so on. Odisha may be described as a polyglot state, there being hardly any instance of linguistic intolerance.

## GEOGRAPHY OF ODISHA

Odisha extends from 17-degree 49 N to 22-degree 34N latitude and from 81-degree 27-E to 87-degree 29' E longitudes on the eastern coast of India. It is bound by the States of West Bengal on the North East, Jharkhand on the North and Chhatisgarh on the West, Andhra Pradesh on the South and Bay of Bengal on the East.

Morphologically Odisha can be divided into five parts. The coastal plains, the middle mountainous country, the rolling upland, the river valleys and the subdued plateaus.

The coastal plains of Odisha stretch from the Subarnarekha in the North to Rushikulya in the South. They are narrow in the North, widest in the middle, narrowest in the lake Chilka coast and broad in the South.

The coastal plains are the gift of six major rivers, which bring silt from their catchments, has reclaimed this area from the depths of the Bay of Bengal. The rivers from North to South are the Subarnarekha, the Budha Balanga, the Baitarani, the Brahmani, the Mahanadi and the Rushikulya. The coastal plains can be termed as a land of 'six deltas' of the Subarnarekha and the Budha Balanga, the middle coastal plains the combined deltas of the Baitarani, the Brahmani and the Mahanadi and the South coastal plains (The Rushikulya plains).

The mountainous region of Odisha covers about three-fourths of the area of the State. This region is a part of Indian peninsula. Here deep and broad valleys are cut by the Baitarani, the Brahmani, the Mahanadi, the Rushikulya, the Vansadhara and the Nagavali rivers. They are fertile, well-drained and thickly populated. Morphologically this region can be divided into the following units (a) the Simulia and the

Meghasan mountains, (b) the Baitarani and the Brahmani interfluuous, (c) the water shed between the Brahmani and the Mahanadi, (d) the water shed of Rushikulya and the Vansadhara. The elevation ranges from 610 to 1, 068 meters.

The rolling uplands are lower in elevation than the plateaus. They vary from 153m. to 305m. They are the products of continued river action, are rich in soil nutrients, and are situated in the Koelsankh basin of the upper Brahmani in the IB, the Suktel and the Tel of the middle Mahanadi and the Sabari basins. The rolling uplands may be grouped as follows : the Rajgangpur uplands, the Jharsuguda uplands, the Bargarh uplands, the Bolangir-Titilagarh-Patnagarh uplands, the Bhawanipatna uplands, the Malkangiri uplands and the Rairangpur uplands.

River valleys are net product of the action of rivers. They are fertile and at times present an undulating topography. The major river valleys of Odisha are associated with the Brahmani, the Mahanadi and the Vansadhara rivers.

The subdued plateaus (305–610m.) reveal all the peculiarities of peninsular tablelands. They are almost flat and the monotony of orography is interrupted by the river valleys. These features are commonly met within the upper Baitarani and the Sabari basins of the Keonjhar and Koraput Districts, respectively. In these uplands sheet erosion is most common while gullying is confined to the river valleys. These plateaus can be divided into the Panposh-Keonjhar-Pallahara plateaus and the Nawrangpur-Jeypore plateaus.

## FLORA & FAUNA

### Forest

The State has a recorded forest area of about 58166.683 Sq.kms. According to the 'State of Forests Report 2009' published by the Forest

Survey of India, the actual Forest and tree cover is 53,290 sq.kms. Thus, while the recorded forest area constitutes about 37.34% of the total geographical area of the State, actual forest cover exists over only 31.38% of the geographical area. But there is tree cover over 2.85% of geographical area in the State. Hence forest and tree cover constitutes 34.23% of geographical area. The Forest Department has been constantly endeavouring to protect the forest areas and regenerate the degraded forests. According to 'State of the Forests report 2009' published by Forest Survey of India, there has been an increase in the forest cover in the State by 100 sq.kms in comparison to 'State of the Forests Report 2007'. This is attributed to both afforestation and protection of forest through the successful participatory Forest Management efforts.

Based on the relief, rainfall and vegetation types, the forests of Odisha are divided into the following types:

(i) Northern Tropical Semi-evergreen Forests : These occur in the lower hills and valleys above 600 m elevation in the forest divisions of Mayurbhanj, Dhenkanal, Athgarh, Puri, Nayagarh, Parlakhemidi, Koraput and Kalahandi. While the top storey trees are deciduous and remain leafless for a short time, the second storey is evergreen. The important tree species are: Arjun, Mango, Mankar Kendu (*Diospyros embryopteris*), Champak, Rai, Manda and Nageswar.

(ii) Tropical Moist Deciduous Forests also known as Monsoon Forests : These occur in the lower elevations in Mayurbhanj and Keonjhar districts and the districts bordering on Madhya Pradesh and Andhra Pradesh. The top canopy is formed by Sal (*Shorea robusta*) and its allies Asan, Piasal, Kurum, Kangra and Dhawra and Daba bamboo (*Bamboosa arundinacea*).

(iii) Tropical Dry Deciduous Forests : They occur in the drier central and western areas in parts of Balangir, Kalahandi, Sambalpur, Khariar, Deogarh and Gobindpur divisions. Teak instead of Sal, and Salia bamboo (*Dendrocalamus strictus*) instead of Daba bamboo predominate in these forests.

(iv) Tidal Mangrove Forests: These are limited in extent, scattered and confined to the sea-coast, especially in Bhitarkanika (Balasore) and the Mahanadi delta. The characteristic tree species are Karika (*Bruquiera*), Sundari (*Heritiera*), Bani (*Avicennia*), Rai (*Rhizophora*), Guan (*Exocaria*), etc. As Hental (*Phoenix paludosa*) grows here abundantly in clusters, the mangrove forests are locally called 'Hental van' or Hental forests.

Forests are a major constituent of the state's natural resources in the form of timber, firewood and a large number of profitable forest products like sabai grass, lac, resin, catechu, tassar silk, honey, natural dyes, etc. The valuable timber species are Teak, Seesam or Rose wood, Piasal, Kassi, Kurum, Arjun, Gambhari, Giringa and such other varieties of polishable wood that are used for furniture, and Sal, Asan, Dhau, Bandhan, Kangra, etc. which are hard and utilised in various construction works. Kendu (*Diospyros xylocarpus*) leaves which are used for wrapping bidi constitute a profitable source of revenue as they are largely in demand all over the country. Bamboo is of extensive utility not only in the life of the common man but also as essential raw material for paper industry. It is used in the paper mills of the state and supplied outside, especially to West Bengal. Sabai grass is also used for making paper pulp, but mostly for rope making. Sericulture, undertaken in the forest areas, provides a good source of income to the people. Certain parts of the forest, for example the Gandhamardan hill in Balangir, abound in

medicinal plants and herbs. *Nux vomica* which grows widely in most forests and *Rauwolfia serpentina*, which grows in the jungles of the south are common examples.

### Animals

Living in the deep, dense forests are a few tigers confined to their natural habitats. However a natural habitat is improvised for the species in the Project Tiger, Similipal, which was launched as a part of the national programme in 1973 with only 17 inmates to start with; today their number stands at 101 wildlife census 2005. The Project Tiger covers an area of 850 sq. km in the heart of the 2750 sq. km wide Similipal Reserve Forest. The Odishan tiger belongs to the race of panther (*Panthera tigris tigris*-Odia, Badabagha), the other reported species like leopard (last reported in 1960 from Dhenkanal) and cheetah are by now extinct. The Nandankanan Biological Park is famous for its white tigers.

A large number of carnivores inhabit the forests in almost all districts. They (with their local names given in brackets) are the common wolf (heta), sloth bear (bhalu), honey badger or ratel (gada bhalu), hyaena (gadhia or nekeda bagha), jackal, wild dog (balia kukura), leopard cat (baghata), jungle cat (bana bilei), civet cat (katasha), otter, teddy cat (saliapatini) and the common mongoose (hatia neula). The wolf of the species *Canis lupus pallipes* is occasionally seen in the jungles of Deogarh, Angul and Koraput.

Historically, the pride of place among the wild animals of Odisha goes to the elephant. In the past Odisha used to have an elephant wing in its army and the historic royal dynasties took pride in calling themselves 'Gajapati' or the lord of elephants. Odisha's famed elephants are found in the jungles of Mayurbhanj, Keonjhar, Dhenkanal,

Puri (near Balugan), Ganjam and Sambalpur districts. The Wild Life Sanctuary at Chandaka provides a natural forest abode to elephants. There are elephants in the Mahanadi Baisipali Sanctuary near Nayagarh and Ushakothi Sanctuary on the National Highway No.6 some 40 km from Sambalpur. The latter offers shelter to bisons (gayala) in particular and any visitor to the sanctuary is sure to meet a herd of them.

Other animals found widely in forest areas include: the wild bear (barha), spotted deer (chital), sambar, the barking deer (kutra), the black faced langur or Hanuman monkey, the pink-faced bandar (patimankada), several species of bats, the tailed hare and pangolin (bajra kapta), porcupine (jhinka), the giant squirrel and palm squirrel. Found in the restricted areas are the wild buffaloes (arana mainshi) traceable in Balimela and Sunabeda areas; four-horned antelope charisinga in the isolated corners of Cuttack, Puri, Dhenkanal, Sambalpur and Mayurbhanj districts and the black buck (krushnasara or baliharina) in Bhetanai near Aska in Ganjam district. The Irrawadi dolphin (bhuasuni machha) and the gangetic dolphin (sisumara) are found in the Chilika and the rivers respectively.

### Birds

The bird kingdom of Odisha, vast, varied and colourful, offers a most attractive sight. Here is a list of some typical birds representing different orders of the bird families, with their local names given in brackets:

Grebe (hansarali), cormorant and darter (pani-kua and panikoili), grey heron and pond heron (badakanka and kantibaga), white-necked and black-necked stork (gendalia), flamingo (marala/era) and ibis (bajeni), brahminy duck (chakua-chakoi), bar-headed goose (kaja) and

whistling teal (sarali); king vulture (phula shaguna), tawny eagle (chhanchana), kestrel (baja), brahmīn kite (sankha chila) and pariah kite (matia chila), peacock (mayura), partridge (titir) and quail (punduki chadhei), crane (sarasa) and waterhen (dahuka), jacana (pani dahuka), plover (tentei), sandpiper (cha-chadhei), snipe (kadua-khurmpī) and tern (machhakhia); rock-pigeon (deuli para), green pigeon (harada chadhei), spotted and ring doves (kantikiri, kapta); parrot (sua) and parakeet (madana); cuckoo (koili) and crow pheasant (kumhatia); owl and barn owl (lakshmi pecha); nightjar (bhūin chhapuli); horn-bill (dhanesh); kingfisher (machharanka); copper barbet (tukura basanta) and woodpecker (kathahana); drongos (kajalapati) and oriole (haladibasanta); jungle and common myna (bani, ghukalika, sari), bulbul (gobara chadhei), weaver bird (baya chadhei) and babbler bird (satabhaya), etc. in addition to the types commonly observed like crows and sparrows. Odisha has an almost inexhaustible treasury of folk songs and folk lore poetising most of the birds listed above. Birds constitute a befitting accompaniment to the rhythm of rural life along with the soul stirring song birds that put up the daily rounds of morning and evening choirs.

## Reptiles

Among the reptiles the most endangered species today is the crocodile on account of the high price offered for its skin. Odisha has all the three species of crocodile, namely the Gharial, the estuarine crocodile (Baula) and the marsh crocodile and sanctuaries have been set up for their preservation and growth. The Gharials which are found only in the Mahanadi and its tributaries are reared in the sanctuary at Satkoshia on the river Mahanadi covering an area of 795.5 sq km. The other two types have their resort in Bhitār

Kanika covering an area of 161.76 sq. km of water encompassed with mangrove forests. To each of these sanctuaries is attached a corresponding Crocodile Research and Conservation unit. There is also a small crocodile sanctuary at Ramirth inside the Similipal forest.

There are two important species of turtle commonly found in Odisha—the Green Turtle, a big marine species attaining a length of 1.2 metres and weighing between 135 to 180 kg each found in the Chilika and the Pacific or Olive Ridley Sea Turtle (*Lepidochelys olivacea*), a migratory species. The latter come in thousands from far off parts of the Pacific coasts during winter to lay their eggs at Gahiramatha and Satabhaya in Bhitār Kanika. The place where these turtles lay eggs has come to be known as ‘Arribada’ (a Spanish word meaning breeding ground).

As usual there are the snakes and frogs of different species as in any other part of the country.

## MINERAL RESOURCES

Odisha, situated on the eastern seaboard of India is one of the gifted parts of the world, where a gamut of mineral resources exist in bounty. The state is endowed with large reserves of bauxite, china clay, chromite, coal, dolomite, fireclay, graphite, gemstones, iron ore, limestone, manganese ore, mineral sand, nickel ore, pyrophyllite and quartz. Recent discovery of diamond in the Dharambandha area of Nuapada district by the State Directorate of Geology has added a coloured feather in the cap of the state. Other minerals of the state include copper ore, lead ore, titanium bearing vanadiferous magnetite, talc/soap stone and high magnesia igneous rocks. Recent boom of the mineral industry has turned

the state into a hotspot, with entrepreneurs from all over the world crowding for their share of fortune.

The rich mineral wealth of the state is attributed to its favourable geological set-up. Situated on the eastern fringe of the peninsular India, Odisha has about 72.5% of the area occupied by Precambrian metamorphic rocks (of Archaean and Proterozoic age) which host the majority of the minerals. The Gondwanas hosting the coal resources occur over about 8% of the land mass. The Tertiary and Quaternary formations, occupying rest of the area, provide avenues for aluminous/nickeliferous laterite and heavy minerals (in beach sand).

The Archaean rocks in northern Odisha include the Supracrustal belts of metasedimentary rocks including Iron Ore Super Group having deposits of iron, manganese, gold and basemetals. These are also represented by the gneisses, granite, migmatite (Singhbhum, Bonai and Mayurbhanj Plutons) and mafic/ultramafic intrusives. These intrusives are associated with the chromite, titaniferous vanadiferous magnetite and PGM. The Bastar cratonic complex of Archaean age in the Western Odisha includes gneisses, granite, migmatite and Strontium-Tantalum-Niobium bearing pegmatites.

Proterozoic rocks in the Western Odisha exhibit platformal sedimentary formations and associated limestone deposits. In north-western Odisha they contain metasediments of low to medium metamorphic grade classified as the Gangpur Group, which host manganese, limestone and Lead-Zinc deposits. In central and southern Odisha, the Proterozoics are represented

by the Eastern Ghats granulite belt comprising of khondalite, charnockite, migmatite, anorthosite and alkaline rocks accounting for the mineralisation of bauxite, manganese, graphite and gemstones.

The Mesozoic rocks of Gondwana Super Group host the major coal resources of the state.

Formations of Cenozoic age occupy the eastern coastal plains in form of alluvial sediments, ash beds and low level laterite, providing avenues for occurrence of beach sand minerals and building materials. The deltaic fans extending into offshore regions play hosts for oil and gas.

Odisha has a lion's share of the Country's mineral reserves. The chromite, nickel, bauxite, iron ore and coal resources of the state respectively stand at a staggering 83, 92, 55, 38 and 26 percent of India's total reserves. Some of these minerals also account for a visible spot in the world's mineral map. The state's mining revenue during 2009-10 amounted to Rs.2020.71 crore.

Several mineral based industries have already come up in the State. The major ones include Rourkela Steel Plant, Alumina Refinery and Smelter of Nalco at Damanjodi and Angul, Charge Chrome plants at Baminipal, Bhadrak, Choudwar and Theruvali by OMC, FACOR, ICCL and IMFA respectively, Mineral sand separation unit at Chatrapur by IRE. Many cement and sponge iron plants have been set up. Coal based thermal power plants have been set up at Talcher, Kanihan and Banaharpali. Captive thermal power plants have also been set up by NALCO, RSP, ICCL, INDAL etc. and many more are in the pipeline.