

Nature is an amazing environment for our survival. We should maintain this gifted hidden treasure for sustainable future.

Similipal National Park derives its name from the abundance of red silk cotton trees growing in the area. The common names of the tree are simal, red cotton tree, kapok and simply bombax. Scientifically or botanically the name is *Bombax ceiba* which belongs to the family Malvaceae. *Bombax* is a genus of mainly trees in the mallow family. These are native to western Africa, the Indian subcontinent, Southeast Asia and the subtropical regions of East Asia and

this tree is that realizing the importance of this tree, this tree appears on the flag of Equatorial Guinea. Because of the abundance of this species in the protected area of Biosphere Reserve and National Park, the natural scenic beauty of Similipal area attracts the attention of tourists and visitors of India and abroad. Moreover, several species of trees, herbs, shrubs, creepers, orchids etc. provide a congenial habitat for enormous species of invertebrates on the surface, under the soil along with prominently visible larger vertebrate fauna.

Similipal of Odisha : Nature's Paradise

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northern Australia. It is distinguished from *Ceiba* which has white flowers. Taxonomically, *Bombax* is classified as follows. It belongs to the clade – Angiosperms, Order – Malvales, Family – Malvaceae and Subfamily - Bombacideae with Genus – *Bombax* and species – *ceiba*. So far four species are recognised.

Bombax species are used as food plants by the larvae of some butterfly and moth species of the arthropodan invertebrates under the Order Lepidoptera including the insects like leaf-minor (*Bucculatrix crateracma*) which feeds exclusively *Bombax ceiba*. The unique aspect of



Fig.1 Dense Sal forest of Similipal National Park.

UNIQUENESS OF SIMILIPAL

Similipal is unique as far as biodiversity is concerned. Because of floral and faunal coexistence in the dense forest area (Fig.1), it is regarded as the lungs of Odisha and is one of the cockpits of India. It embraces all natural entities in its surrounding (Fig. 2) for which it has achieved the distinction in the world map (Fig. 3).

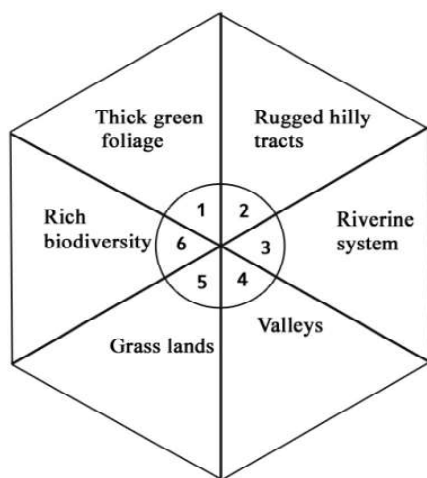


Fig. 2 Existence of natural entities in Similipal ecosystem.

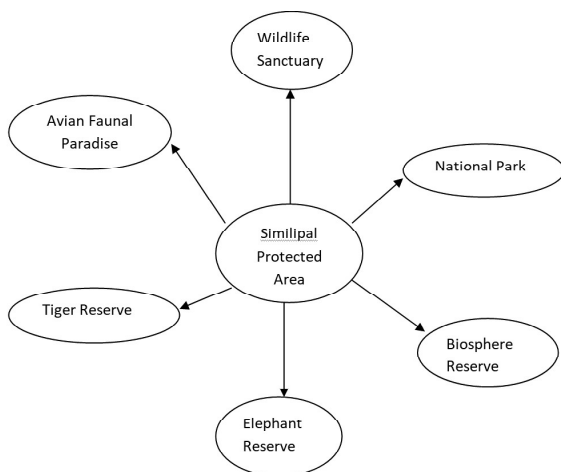


Fig. 3 Uniqueness of Similipal sanctuary.

GEOMORPHOLOGY, LOCATION AND AREA OF SIMILIPAL

The Similipal Biosphere Reserve (SBR) is the eighth Biosphere Reserve (Govt. notification no.-16/2/85 MAB CSC declared on 22nd June 1994) in India. The area lies in the northeast region of Odisha, latitude -20° 17'-22° 34' N and longitude -85°40'-87°10' E. The total area covers an area of 2,750 km² of which 845.70 km² forms the “core area” and the rest area of 1,904.30 Km² forms the “buffer zone”. The core area is demarcated from the buffer area by 50 feet’s wide line of cut trees for operational or management convenience (Fig. 4). Of the total area, about 1,400 km² additional area forms “transitional zone (extending up to 10 km from the buffer line)”. Addition of 77 km² Nato conservation forest, and 147 km² Satakoshia conservation forest, has helped to enhance the total area of Similipal to 4,374 sq. km, as of now. It covers 64% of Mayurbhanj District. Similipal Biosphere or Tiger Reserve is approximately 510 km by road from Berhampur (Brahmapur) National Highway number 5 [NH-5]. In view of its rich biotic wealth, both flora and fauna, it has rightly been the focus for biodiversity inventories for evaluation and documentation of its whole gamut of biotic diversity and potential.

DECLARATION OF THE GOVERNMENT

The forest area was first declared as “tiger reserve” in 1973 and had a relatively small area (845 km²). Later, the reserve was upgraded to the status of Wildlife Sanctuary in December,

The protected area is part of UNESCO World Network of Biosphere Reserve since 2009. It covers an area 2,750 km² (1,060 sq. m). Biogeographically, it is a part of Chhotanagpur Plateau, bordering the districts of Balasore and

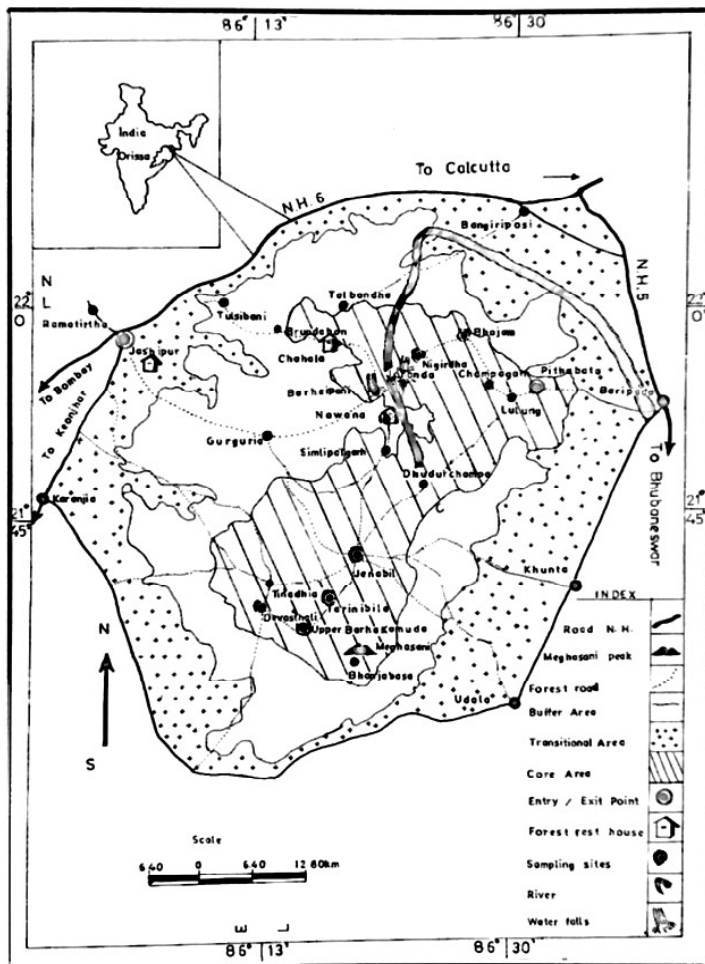


Fig. 4 Topographic map of Similipal Biosphere Reserve, Mayurbhanj, Odisha, showing among others, random sampling sites/ points-12(after Forest Dept., Govt. of Odisha).

Keonjhar at the east and southwest, respectively. The total area under the Biosphere Reserve is 5,569 km² with Similipal Sanctuary at the nucleus or centre.

The hills, with their numerous peaks and valleys, rise steeply from the plains of Udala in the south and Baripada in the southeast and extend up to Jashipur in the north-west, Bisoi in the north

and Thakurmunda to the west. Standing at an average elevation of 900 metres, Similipal has emerald green mountains with vegetation covered peaks smiling at visitors in warm reception. The peaks of Khatriburu (1,178 metres), Meghasani (1,158 metres) and several others have a breath-taking beauty. Rivers like Budhabalanga, Khairi, Salandi, Palpala etc. originate from these hills and flow through the thick jungles of Similipal serving as an excellent habitat for many creatures. The Barehipani (400 metres) (Fig.5) and Joranda (150 metres) waterfalls present a delightful sight and irrigate the area nicely. The tall dense sal trees in abundance add shadow and accelerate the charm of the place.

The Similipal forest is well-wooded, rolling, plateau with deep folds of hills, interlaced with numerous networks of perennial streams and rivers. There are ten perennial streams flowing in different directions. Khadkei, Gangahar, Sono, East Deo, Sanjo and Palpala streams

flow towards the east, joining the river Budhabalanga, which finally drains into the Bay of Bengal. Khairi, Bandhan and West Deo streams join river Baitarani. River Salandi originates in Similipal and drains into Bay of Bengal. Few other streams also drain into river Subarnarekha. From these, it is apparent that Similipal is naturally endowed with a rich watershed both rivers and streams. These water bodies help the floral and faunal diversities to survive, grow and reproduce well for which the population of plants and animals is healthy, dense and abundant.



Fig. 5 The Similipal forest with Barehipani waterfall.

of tigers reverberating in the atmosphere and the thought of leopards couching behind some bush fills the spectators and tourists with adventure.

With a rich biodiversity and unspoilt natural beauty, Similipal beckons the visitors to have a refreshing experience in the lap of nature. The adventure, excitement, thrill and feel at Similipal rarely have any match. The trip, visit, excursion, study tour and nature study to the beguiling world of Similipal are a must to take

Table 1 Profile of Similipal protected area

Sl.No.	NAME OF THE AREA	DECLARED YEAR	AREA IN km ²
1	Wild life Sanctuary	1979	2,750
2	Proposed National Park	1980	845
3	Biosphere Reserve(8 th of India)*	1994	2,750
4	Tiger Reserve	1973	845
5	Total Area		2,750
6	Core Area		845.70
7	Buffer Area		1,904.30
8	Transitional Area		1,400.00

*Similipal Biosphere Reserve (SBR) is the 8th Biosphere Reserve in India vide Government of India Notification No. 16/2/82 MAB CSC declared on 22nd June, 1994.

While moving slowly along the trails of Similipal, every visitor can find the mesmerizing beauty of nature unfold at each step. While the lovely pink orchids peeping from the greenery, serpentine rivers with musical sound meandering through the jungles, cascading waterfalls, tall and straight sal trees competing with each other to witness the sun and the tender foliage shining brilliantly offer a feeling of being one with nature; the rustling of leaves, herds of jumbos walking leisurely across the jungle tracts or elephant corridors, the roars

along the trails of ecological, mythological and spiritual fantasy.

CLIMATIC CONDITION

Climatic condition is a pivotal factor for the habitat of both flora and fauna. This condition speaks of factors such as (i) temperature, (ii) rainfall, (iii) humidity and (iv) photoperiod. Similipal enjoys a wet tropical monsoon type of climate. This area falls under the influence of

southwest monsoon usually from June to October. At times, the region experiences, cyclonic storms from the Bay of Bengal. Therefore, it brings copious rains during July to October from low pressure generated at the Bay of Bengal. This passes over north Balasore and hits at Similipal Meghasan hill range. If the range were absent, the Odisha would have a desert like other deserted states.

Areas of high altitude, i.e., upper basin of Budhabalanga river have maximum temperature of 31.5°C, minimum temperature 5°C and annual rainfall of 1,894.2mm. However, the range varies from higher to lower altitude, where the maximum temperature is 40°C-42°C and minimum temperature of 5°C-8°C and rainfall of 2,500mm. But, according to meteorological reports, the annual rainfall or precipitation recorded in this region is 2,000mm.

The summers are hot and dry with average humidity. Dust and thunder storms is common occurrence during summers. The winters are severe in the valleys with deep frost particularly in south Similipal. The temperature touches below freezing point in the frost valley, Meghasani, upper Barakamra and Debathali during last week of December and first week of January. The precipitation behavior in recent years reflects rising trend of less precipitation.

Table 2 Floral (plant) diversity at Similipal

Sl.No.	Category of Plant	No. of Recorded Species	No. of Family
1	Dicotyledons	713	123
2	Monocotyledons	328	24
3	Gymnosperm	03	
4	Pteridophyte	61	27

FLORAL BEAUTY OF SIMILIPAL

Inventorisation is vital for assessment in evaluation of resources and their conservation options, which in turn rely on adequate use of taxic diversity. Measurement of species abundance, taxic diversity, functional and system diversity, thus contributes in successful, useful and fruitful inventorisation of biodiversity in Similipal. Biosphere Reserve, under Man and biosphere (MAB) program is a worldwide network of protected areas with amazing, threatened and representative ecosystems, declared for conservation and sustainable management of genetic diversity of wild species.

The Similipal Biosphere Reserve is unique in its biotic attributes. The reason of its scenic beauty is charismatic flavor of pristine forest dwells and a treasury of lavish population of wild biodiversity especially floral distribution of varied category. Floristic analysis reveals of approximately 1,107 indigenous species of vascular plants including 713 species of dicotyledons under 123 families, 328 species of monocotyledons under 24 families, three species of gymnosperms (naked-seeded plants) and 61 species of pteridophytes under 27 families. Approximately 274 algal taxa, 43 species of bryophytes, and 128 species of aquatic angiosperms have been enlisted, reported and recorded (Table 2).

5	Algal taxa	274
6	Bryotphyte	43
7	Aquatic angiosperm	128
8	Vascular plants	1107

FAUNAL DIVERSITY OF SIMILIPAL

The ecogeographical condition, ecoclimatic ambience and floral congregation offer a congenial environment and habitat and for the varieties of fauna. Similipal is regarded as a great reservoir of leopards, sambars (State Animal of Odisha) (Fig.6), spotted deer (Chital), barking deer, mouse deer, gaurs, bluejays or neelkanth (State Bird of Odisha) (Fig.7), hill mynahs, hornbills, peacocks and peahens (National Bird of India) (Fig.8), pythons, cobras, varieties of lizard and frogs and toads. Faunal diversity of Similipal is enormous in comparison to other comparable landscapes or Protected Areas in Deccan Peninsula. The recorded fauna include 55 species of mammals, 364 species of birds, 62 species of reptiles, 20 species of amphibians, 66 species of fishes, 188 species of butterflies and many other invertebrates including soil fauna (pedofauna) (Table 3).



Fig. 6 Sambar: the state animal of Odisha.



Fig. 7 Bluejay (Neelkanth or Indian Roller): the state bird of Odisha.

Table 3 Faunal (animal) distribution and inventory of Similipal

Name of the Animal Group	No. of Species approximately
Invertebrates	Many
Butterflies	188
Fish	66
Amphibia	20
Reptilia	62
Aves	364
Mammalia	55

The charismatic and endangered animals of Similipal are elephants (National Heritage Animal of India and an indicator species) (Fig. 9), tigers (Fig. 10), leopards etc. This animal diversity is, no doubt, the nature's benevolent gift and precious support for human life. All these accelerate, add and stimulate the aesthetics and glamour to the rich biodiversity of the protected area.

HUMAN HABITATION AT SIMILIPAL

Tribal population constitutes another segment of Similipal Biosphere Reserve. This population in and around the area share a very close relationship with the wildlife in the biosphere. Long before, there were just 75 villages, (40 in Karanjia, 15 in Baripada and 20 in Udala tahasil) in both core and buffer area of 2,750 km². But, recently the number of villages is decreased particularly in core area due to eviction of human settlements by the Government of Odisha and rehabilitation outside the reserve. Thus, there is a gradual decline of human settlements.

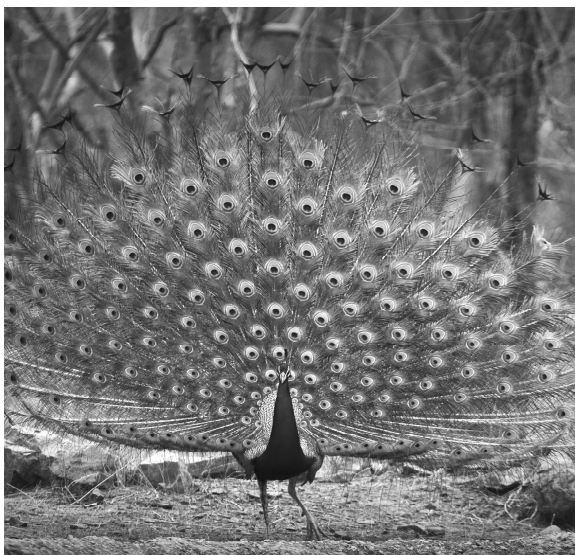


Fig.8 Peacock: the national bird of India.



Fig. 9 Elephant: the national heritage animal of India.



Fig. 10 Tiger: the national animal of India.

Complementing the conservation regulation measures by the authorities of forest, rehabilitations of the tribes to places outside the park have had positive results in conserving wildlife in the reserve and reduction in anthropogenic impact on wildlife. The four villages registered by the Government of Odisha in the core area are Jenabil, Jamuna, Bakua and Kabataghai. The focus of the government was to establish an appropriate settlement of the people of the core area to shape the protected area in order.

The major chunk of people in Similipal Biosphere Reserve are tribals of varied group

namely Bhatudi, Kharia, Mankidia, Gond, Ho etc., besides a minor population of Bhuyan and Paudi Bhuyan with Kharia and Mankidia as majority. Those tribes, are associated with different activities (Table 4).

visitors and hunters. The animals practically are facing the eyes of the poachers and hunters regularly in spite of stringent rules and regulations. Major threats to animal diversity in the Biosphere Reserve include two causes which are as follows.

Table 4 Tribal population of Similipal and their activities

Name of the Tribe	Activity (IES) of the Tribe
Kharia	Collecting forest products like honey, resin, arrowroot, lac, wax etc.
Mankidia	Rope making out of siali fibre
Gond and Bhatudi	Collecting sabai grass
Common activities of tribes	Collection of forest products like tamarind, honey, amla, harida, bahada, tasar silk cocoons, kendu leaves, mohua, siali fibre, sabai grass, bamboo, fruits, resins, medicinal plants, oil extraction, leaf plate making

To summarise, Similipal is the home of several tribal communities such as Ho, Kolha, Santhal, Bathudi, Bhumija, Mahali, Saunti, Munda, Gonda and Paudi Bhuyan including two primitive tribes Erenga Khadias and Mankidias who live inside the reserve and its periphery. Santal is the major tribal group with only limited households. All these tribals exclusively depend on the resources of the forest for their livelihood. The forest and its trees are protected and conserved by these tribal people without any quantum of damage, destruction and degradation. Rather they worship the trees as their gods and goddesses in their traditional way. Biologists and scientists are actively engaged in the protection of traditional knowledge, belief and culture of local inhabitants of Similipal.

THREATS AND CONSERVATION OF SIMILIPAL

Animal diversity is the spectacular attraction and attention of the people, tourists,

- (1) Habitat alteration
- (2) Pressure of human population

The habitat alteration is caused due to the following anthropogenic (man-made) activities (Fig 11).

- (1) Over use of land
- (2) Deforestation
- (3) Degradation
- (4) Fragmentation

The major factors threatening wildlife in the reserve are stated below (Fig. 12).

- (1) Akhand Shikar (Profuse hunting)
- (2) Forest fire
- (3) Poisoning and poaching
- (4) Felling of trees and selling of logs
- (5) Encroachment by tribals for grazing
- (6) Cultivation

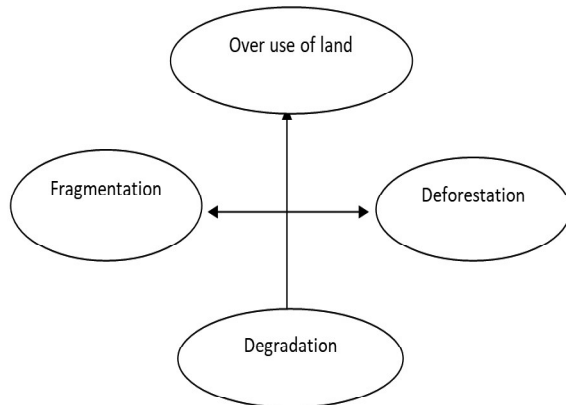


Fig. 11 Causes of habitat alteration.

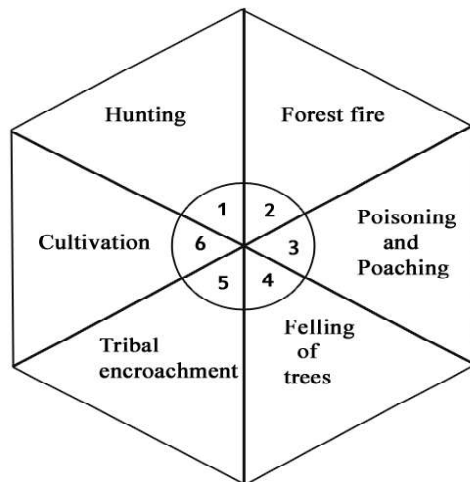


Fig.12 Major factors of threatening of wildlife.

MEASURES OF CONSERVATION AND PROTECTION OF SIMILIPAL

Nature and its associated components are the assets of the state or country. This may be regarded as the heritage of the concerned place. Any damage, loss, degradation, destruction or fragmentation bring out enormous loss for many years to come. Since there is a continuous and regular loss of our natural assets from Similipal, following measures need to be taken against this (Fig. 13) for sustainable development.



Fig. 13 Measures of conservation of Similipal.

- (1) Reduction of human activities.
- (2) Control and regulation of anthropogenic pressure in the forest.
- (3) Complete restriction of human entry in the core area.
- (4) Control of forest fire during summer and as and when required.
- (5) Stringent punishment for cutting of trees.
- (6) Ban and punishment for hunting, poaching and killing of animals (complete restriction on Akhand Shikar).
- (7) Cultivation in demarcated and restricted areas of the forest.
- (8) Prohibition of lighter, kerosene, petrol, candle, crackers, match box, cigarette, bidi etc. (inflammable substances) to the forest by visitors.
- (9) Protection of corridors of animals.
- (10) Cooking, noise, non-biodegradable materials (polythenes, plastics) need to be strictly prohibited.

CONCLUSION

Forests are the lungs of the nature. Similipal Biosphere Reserve is one of the top most protected areas with all possible natural entities like hills, forests, soil, streams, waterfalls, rivers, herbs, bushes, creepers, trees and animals. The assemblage of all these has made the biodiversity possible in a healthy way. The coexistence of diversity with abiotic surroundings in a harmonious manner reflects sustainability. This nature is providing and supplying enormous products for our food and living. So, it is our duty and responsibility to protect and preserve this most valuable gift. Let us value this valuable nature with traditional culture for better future without torture.

“RESPECT AND WORSHIP NATURE FOR HEALTHY AND WEALTHY FUTURE.”

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