

## DIBRU-SAIKHOWA NATIONAL PARK, ASSAM- AN OBSERVATION

**Dr. Kamaleswar Kalita**

Department of Geography

Tinsukia College, Tinsukia-786125, Assam

### ABSTRACT

*Dibru-Saikhowa National Park of Tinsukia-Dibrugarh districts of Assam is famed for its biotic diversity. Located at the midst of the Lohit-Brahmaputra river and Burhi-Dangari-Dibru rivers have an area of 340 sq. km. However, due to recurring reverine stresses of the Lohit-Brahmaputra, Burhi-Dangari and Dibru rivers, the land area has been dwindling in the past decades. Floods, erosions, siltation and river bank shifts are the prime factors for the decrease of the area of the park. It is found that an area of 77.14 sk. km has already been wash away due to the reverine stresses on the area. The present paper tries to identify and estimate the flora and fauna diversity of the park and analyze the reverine stresses on the park and propose strategies for the conservation of its biodiversity.*

**Keywords:** Biodiversity, Stress, Erosion.

### STUDY AREA

Dibru-Saikhowa National Park presently covers an area of 340 sq. km situated in the Tinsukia-Dibrugarh district of Assam. It is extend between the latitude  $27^{\circ}30' N$  to  $27^{\circ}48' N$  and  $95^{\circ}10' E$  to  $95^{\circ}45' E$  longitudes (Fig-1). The area lies at an average altitude of 118m above mean sea level. It is an active flood plain zone of the Brahmaputra rivers and its tributaries. The terrain of the area is almost flat and composed mainly of new and old alluvium. The Dibru-Saikhowa Biosphere Reserve was declared as National Park in 1999.

### OBJECTIVES

The objectives of the study are-

- i). to identify and estimate the flora and fauna of the park.
- ii). to examine the reverine stresses on the flora and fauna diversity.
- iii). to recommend some measures to preserve the biodiversity of the park.

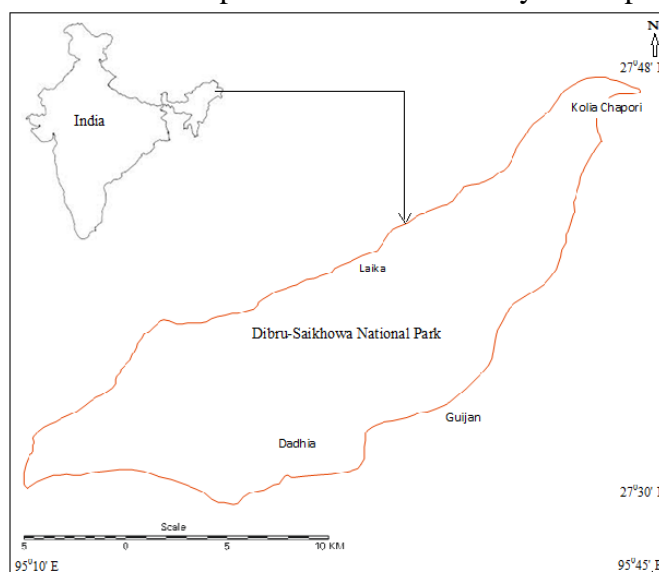


Fig-1:  
Location  
Map of  
Dibru-  
Saikhowa  
National  
Park

## DATABASE & METHODOLOGY

The data used for the study is based on the field visit and toposheets base information, satellite data, secondary sources and interviews. Both primary and secondary data have been collected from different locations of the area. Collection of data and also the verification of ground truth were the major activities during the field visit. However, secondary data relevant to the study have collected mainly from different government and concerned departments. Personal interview was conducted by the researchers during the time of their field work to know the perception of the people of the area regarding various issues of the park. Finally, tabulated data on various aspects are interpreted and analyzed to the requirements of the objectives.

## OBSERVATION & FINDINGS

Dibru-Saikhowa National Park is known to all for its rich floral and faunal diversity. It holds large varieties of vegetation and forest types as already stated above. Since, the reserve enjoys hot, humid and wet sub-tropical climate, here researcher finds tropical evergreen, semi evergreen, tropical-moist deciduous, swampy marshy vegetation and grassland vegetations. There are 680 plant species belonging to 468 genera and 143 families of flowering plants. On the other hand, there are 511 species of dicotyledonous plants, 25 species of orchids, 212 species of medicinal plants (e.g. *Hydnocarpus kurizii*, *Holarrhen*, *Costus species*, *Dioscorea alata*, *Rauvolfia serpentine*). Some popular species of the orchid flora found in the area are *Bischofia javanica*, *Bombax ceiba*, *Mesua ferrea*, *dalbergia*, *Ficus*, *Terminalia myriocarpa spp.* etc. Some rare varieties of orchids are also found in Dibru-Saikhowa. However, smuggling of orchids in recent years has been threatened the species. It is learnt that 61 plant species of Dibru-Saikhowa has been traditionally used as folk medicine to ailment of different diseases of locales of Dibru-Saikhowa. Again, *Imperata cylindrical*, *Phragmaties karka*, *Erianthus ravanea*, *Arundo donax and saccharum* etc are some of the dominant grasses observed in the reserve. *Hymenodicton excelsum* and *Temarix dioca* exclusively occurs abundantly in marshy-swampy and *chaponi* area. Sharma et al, 1997 listed the some of the dominant vegetation seen in the Dibru-Saikhowa.

Dibru-Saikhowa Biosphere Reserve is also rich habitat of wide range of wild animals and birds. Data shows that there are 36 species of mammals, 43 species of reptiles, 104 species of fishes, 105 species of butterflies, 2 species of monitor lizards, 8 species of turtles, 8 species of Snakes, and about 502 species of birds. It is mentionable that out of 36 species of mammals recorded in the reserve so far, 12 have been listed in the schedule-1 species, under the Wildlife Protection Act, 1972. Some of the schedule-1 species listed in Dibru-Saikhowa is Capped Langur, Slow Lories, Hoolock Gibbon, Asiatic Wild Buffalo, Tiger and Elephant etc. According to a report, there are at present 400 wild buffalos, 324 elephants, 31 tigers, 836 Assamese Macaques and 48 feral horses. It reveals from the serious study done by some wildlife lovers that there are 80 feral horses were there in the reserve in few years back, but



as mentioned above there are only 48 horses are recorded at present. The mammalian families recorded so far in the Dibru-Saikhowa are- Leopard, Royal Bengal Tiger, Jungle Cat, Golden Cat, Small Indian Civet, Indian Here, Slow Loris, Sloth Bear, Dhole, Chinese Pangolin, Hollock Gibon, Asian Elephant, Samber, Hog Deer, Capped Langur, Malayan Giant Squirrel, Rhesus Macaque, Water buffalo, Barking Deer, Pig tail Macaque, Himalayan Mole, Ground Shrew, Small Asian Mongoose, Common Mongoose, Golden Jackal, Common Giant Flying Squirrel, Common Otter, Chinese Porcupine, Gangatic Dolphin, and Himalayan Hoary Billed squirrel etc.

Apart from these, Dibru-Saikhowa is very rich for native and migratory species of birds. There are 350 species of birds are observed in Dibru-Saikhowa. The main reasons for the suitable home of different species of avian families are the congenial climate, flat homogeneous plain with grassland and swampy-marshy lands. Mentionable that there are 50 important *beels* (wetlands) of different shapes and size are scattered in Dibru-Saikhowa. Kalita and Gogoi, 2010 noted that some of the migratory birds observed here are common, which are also observed in the Kaziranga National Park and Panidihing Birds Sanctuary. The Panidihing Birds Sanctuary and the Kaziranga National Park is situated only a distant of about 138 km and 280 km away from Dibru-Saikhowa.

The common birds found in the reserve are the White winged Wood Duck, Grey Heron, Purple Heron, Night Heron, Water Cock, Lesser Adjutant Stork, Bar headed Goose, Swamp Francolin, Grey headed Fishing Eagle, Crested Serpent Eagle, Bengle Florican, Spotted Owlet, Lesser Pied Kingfisher, Lesser Golden backed Woodpecker, Indian Roller, Hoopoe, Yellow Bittern, Rose Ringed Parakeet, White Winged Pochard, Spot billed Pelican, Black Stork, Large Whistling Teal, Black Breasted Parrot-bill, Great East Indian Hornbill, Blyth's Kingfisher, Great Grebe, Griffon Vulture, Osprey, march Babbler, etc.

It is important to note that by identifying and measuring the species richness of high biotic diverse area, it is easy to take right decision in the field of planning and conservation of biodiversity. It is clear from the species richness map that about 11 % of area has been covered by the very high concentration of species diversity. On the other hand, 44 % of the area of the reserve has been come under the high, 32% medium 9% low and 4% very low concentration of species diversity respectively. High concentration and density of species diversity is seen in the core area of the reserve and also low richness is observed in the area of dry river beds and sand bars. Medium density of the species is observed in the buffer zone of the reserve. Density of the species is seen high in the semi-evergreen and mixed deciduous vegetations of the core area and also in the grass-land and swampy marshy areas.

## REVERINE STRESSES ON THE DIBRU-SAIKHOWA

The Brahmaputra river basin and the Barak river basin are the two major flood prone regions in the north east India. Floods in Assam is mainly the cause of the excessive rains received the river basins during monsoon. The average annual rainfall of the Brahmaputra

and the Barak Valley are recorded as 500 cm and 350 cm respectively in the recent years. It is observed that floods of the Dibrugarh-Tinsukia districts are the interplay of excessive rain, high discharge, inadequate to carry to rain water and channel shifting are the causes of floods particularly, during the monsoon period. It is observed that on an average 120 to 130 rainy days are spread in a general year. Again, it receives about 250 cm of annual rainfall, of these, 90% from the rainy season.

Floods are common and serious problems in the Dibru-Saikhowa. On an average two to three floods hit the area almost every year. Along with the floods, bank erosion and siltation activities have also been going hand in hand. These recurring phenomenons have been always causing severe damage to the habitat of the park. Gogoi and Kalita (2002) observed that Dibru-Saikhowa had been affected by the serious destruction of Dangari and Dibru river on the one hand and Lohit-Brahmaputra on the other hand. It is also observed that the destruction of the forest has been more pronounced after the severe floods of 1995. In their study, it is found that an area of 20.2 sq.km has been captured by the changing of course of Burhi-Dangari and Dibru river. Again, an area of 22.35 sq. km had been eroded away by the destructive forces of the Lohit Brahmaputra. The Burhi Dangari river, which was only 0.2 km breath is extended to about 500 m wide. The district reduction of the land cover has now remained under water level and siltation. However, the floods, erosion and siltation problems of the reserve are mainly due to the unequal input and output of the rivers of the area. The speedy flow of discharge compound with low slope of the rivers of the area cannot accommodate the larger volume of water particularly during monsoon. Hence, flooding and overflow in the vicinity of the drainage channels. The silt carried by the rivers and it deposited in the low lying area of the area cause deforestation and siltation of many areas. The district changes of the courses of the Brahmaputra and Burhi-Dangari has lead to tress on the biodiversity of the park. It is observed that the course of the Lohit has been changed through Burhi-Dangari river in recent years. The geomorphological formation of the area is one of the strong reasons for changing courses of the rivers and also the increasing volume of discharge and sedimentation of the area. There is a fault line passing through the Dibru-Burhi-Dangari rivers. It is important to mention here that illegal felling of trees is common and active during floods. Besides, smuggling of tree, medicinal plant, herbs, birds and animals are reported often from the different areas of the reserve.

From the above introspection it may be said that the erosion, deposing and changing courses of rivers of the area is not for a single cause but many as mentioned in the above. However, after the comparison of 1990 and 2006 maps, which have been prepared from the topo sheet and satellite imageries, it is found that an area of 77.14 sq. km has been reduced from the Dibru-Saikhowa. It is a very serious problem for not only the biotic diversity of the reserve in particular but also for the entire region in general. Due to the reduction of area of the reserve, some flora and fauna species have been found vanished, some other threatened and restricted already.



Besides, fluvial stress the Dibru-Saikhowa has been suffered from the pressure of human and the cattle population. It is to mention that Laika and Dadhia are two forest villages situated in the core area of the park. The two villages are dominated by the people of Mishing community, and their main stay of livelihood is cattle rearing, fishing and agriculture. The production of *milk* is the major activities of the people of the area. Therefore, more than 24 large *Khuties* (milk producing centre) are seen in different location here. They are supplying the milk and the milk production to the nearby Tinsukia Town. It is need not to mention that cattle rearing is mainly depends upon the good and abundant grasslands. The *chars areas* of the reserve are covered with different varieties of grasses. These grasslands are the habitat of the innumerable species of biotic diversity. But, in the recent years the pressure of human and the cattle population on the area has been increased in many folds, which has been disturbed the health and habitat of the species of the area.

## RECOMMENDATIONS AND CONCLUSION

The management of biodiversity is a bold step to preserve and conserve the species diversity. To conserve and preserve the species diversity of Dibru-Saikhowa, the state and central Government has been taking different steps in time to time. The state and the Central Govt., particularly the Tinsukia Wildlife Division has been taking measures in respect of protection, preservation and improvement of the reserve. Legally they are the sole authorities to take any decision and step regarding any matter related to it. Of course, some local nature lovers and entrepreneur groups and people have been taking some bold steps to the overall development of the Dibru-Saikhowa. However, the ecologically significant flora and the fauna of Dibru-Saikhowa are in needs of immediate identification for to protect endangered species, threatened species and extinct species categories. The checklist of the species should be completed with proper filed survey with modern tools and technology. On the other hand, the approaches like species preservation, assemblage protection and habitat protection may be time appropriate. Besides, to adopt and execute any plan and step on the reserve, the concerning sectors should always undertake the Environmental Impact Assessment (EIA) in advance. Both the short and long term plan and strategies can be adopted in this regards. Geotourism of the area also be initiated in a proper manner. However, every quarter related and associated to the park should be deep concerned to restrain the serenity and tranquility of Dibru-Saikhowa.

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