

STUDIES OF VALMIKI NATIONAL PARK, BIHAR WITH REFERENCE TO FLORA AND FAUNA

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ABSTRACT

Early man lived harmoniously with nature one shared its benefits with other forms of life. There is a global concern for conservation today. Already India has lost some of the most precious plants and animals. That fate of may others is having on a dedicate threat. The survival of a single animal or a plant depends on an entire ecosystem. One of the objectives of creation of Valmiki National Park (Tiger Reserve) is to maintain a viable population of the supreme predator; The tiger and other fauna as well as flora for scientific, economic, aesthetic, cultural and ecological values. The forests under the proposed area have been known to be one of the best floral and faunal area in the state. Special attraction of this area has been the existence of large no of faunal species like Tiger and Leopard, Spotted deer, Hog deer, Barking deer, Wild boar besides a large number of floral species like Karma, Semal, Siris, Satsal, Harra, Bhand.

Key words: Vamliki National Park, Ecology, Conservation, Flora, Fauna.

1. INTRODUCTION

The Valmiki National Park is India harbours one of the biggest unfragmented tiger population in the Far East. The National Park is the 18th Tiger Reserve of the country and 2nd in Bihar is located in the northern part of the West Champaran district. Core area was declared as National Park in 1989. The National Park is unfragmented and in-accessible to people, which offers excellent potential for long term conservation of the tigers. Hence the Valmiki National Park has been identified as a high priority area for tiger conservation. The tiger is the pride of the fauna of Valmiki National Park. Tiger is also considered as the flagship or umbrella species to conserve the unique biodiversity of the National Park. The tract is located in the Himalayan Terai region of outer Siwalik hill range region. It is also the origination region of the great "Gandak" and Masan rivers, that collect all the water from numerous tortuous tributaries. The Bhabar Dun sal Forest, Dry Siwalik Sal Forest, Cane Brakes, Wet Alluvial Grass Land and Barringtonia Swamp Forest dominate the forest type. This type of habitat is very favourable for Tigers, Leopards, Wild dog, Fishing cat, Chital, Sambar, Hog deer, Gaur, Sloth bear, Mugger, Gharial and Python snake.

2. MATERIALS AND METHODS

Two year visiting were performed in the selected areas of the Park to observe the nature of different types of forests containing a unique floral distribution. Besides this faunal diversity were also observed. Six main blocks were selected for observation.

3. RESULTS AND DISCUSSION

The forest under the Valmiki National Park (Tiger Reserve) are located in the northern most part of West Champaran district of Bihar. From the viewpoint of biogeography, the area falls in the Oriental Realm according to Wallace. Good (1953) describe the area on the basic of flora under the Palaeotropical. The Palaeotropical was sub divided in to the three sub division vide African, Indomalayan and Polynesian. Wallace's faunal regions have been modified by Udverdy (1975). It does not differ greatly from Wallace's original classification but also takes into accounts the distribution of plant life as well as animals.

A. CLIMATE

The track has damp moist climate although it is much cooler than the neighbouring districts of Bihar. Summer, rain and winter are the three definite seasons of the year. During summer season hot westerly wind is often experienced. Monsoon usually sets in from mid June. Maximum precipitation is obtained in the month of July and August. In November cold season is ushered by chilly north winds blowing from the hills. These all climatic conditions affects upon the unique flora and fauna of this tract.

B. FLORA

The forests of the Valmiki National Park and Wild Life Sanctuary can be broadly classified into seven types, according to the "Revised Survey of Forest Type" by Champion and Seth(1968) as under:

Table 1: Types of forest in Valmiki National Park (Wildlife Sanctuary).

| S.N. Classification | Forest type |
|---------------------|--|
| I | Bhabar-Dun Sal Forest |
| II | Dry Siwalik Sal Forest |
| III | West Gangetic Moist Mixed Deciduous Forest |
| IV | Khair Sissoo Forest |
| V | Cane Brakes |
| VI | Eastern Wet Alluvial Grassland |
| VII | Barringtonia Swamp Forest |

Due to diverse topographical and edaphic factors the reserve harbours varied vegetation type. The Botanical Survey of India has categorised seven vegetation type within the limits of Sanctuary and National Park.

Table 2: Types of vegetation in Valmiki National Park (Wildlife Sanctuary).

| S.N. | Vegetation type |
|------|--|
| I | Moist Mixed Deciduous |
| II | Open Land Vegetation |
| III | Sub Mountainous Semi Evergreen Formation |
| IV | Fresh Water Swamps |
| V | Riparian Fringes |
| VI | Alluvial Grasslands And High Hill Savannah |
| VII | Wetlands. |

I. Bhabar –Dun Sal Forest

This type occurs on the gentle lower slopes of the hills and adjoining flat ground with very porous and aerated soil underlain by gravels and boulders. It is noticed in the Trivoni Block. The common associates are as under.

Top Canopy:

Lannea Coromandelica, *Terminalia tomentosa*(Asan), *T.belerica* (Bahera), *Adina Cordifolia* (Karma), *Albizia Procera* (Safed Siris), *Lagerstroemia parviflorra* (Asidh), *Salmalia malabarica* (Semal), *Anogeissus latifolia* (Banjhi).

Middle Storey:

Careya arborea (Kumbhi), *Mitragyna parvifolia* (Tikul), *Garuga pinnata* (Kenkar), *Syzygium cumini* (Jamun), *Terminalia Chebula* (Harra), *Eugenia operculata* (Bodera), *Sterospermum suaveolens* (Pandar), *Kydia calycina* (Patei).

Under Wood:

Dillenia pentagyana (Aghai), *Milusa velutina* (Kaariota), *M. tomentosa*, *Mallotus Philippensis* (Rohana), *Casearia tomentosa* (Beri), *C. graveolens*, *Holarrhena antidysenterica* (Koraiya), *Litsea glutinosa*, *Bauhinia malabarica* (Sahul), *B. variegata* (Kachnar), *Symplocos racemosa* (Lodh).

Ground Cover:

Clerodendrum viscosum (Titbhant), *Clausena excavata* (Agnijar), *Leea crispa* (Gorar,), *Indigofera pulchella* (Jirhul), *Randia longispina* (Mauna), *Thespesia lampas* (Bankapas), *Litsea monopetala* (Motwa), *L. glutinosa*, *L. chinensis*, *Grewia helicterifolia* (Banbhunja), *Asperagus racemosus* (Shatavari), *Flacourtia indica*, *Saccharum munja*.

Climbers:

Climbers are rather heavy, the common species being- *Bauhinia vahlii* (Mahulan), *Butea parviflora* (Mahai), *Millettia auriculata* (Gauj), *Cissus repanda* (Syn. *Vitis repanda*) (Paanilat), *Acacia pennata*, *Smilax parviflora* (Ramdatwan), *caesalpinia digyna* (Hainsakant), *Ventilago maderaspatana* (Keoti), *Pueraria tuberosa* (Patal Konhra). A very striking shrub *Piper peepuloides* is found here in damp localities in hilly region. Which belongs to the community of the lower Himalayan flora. *Piper longum* is found as a creeper specially in Raghia Block in damp areas.

II. Dry Siwalik Sal Forest

This type includes the elevated Valley Sal and Hill Sal. The associates of Sal may be classified as under.

Top Canopy:

Buchanania Lanza (Piar, charoli), *Semecarpus anacardium* (Bhelwa), *Terminalia chebula* (Harra), *Embllica officinalis* (Amla), *Madhuca indica* (Mahua), *Wendlandia exserta* (Tilai).

Ground Cover:

Gardenia turgida (Baniain, Mhaner), *Randia longispina* (Mauna), *Randia uliginosa* (Pidar), *Holarrhena antidysenterica* (Koraiya), *Indigofera pulchella* (Jirhul), *Flacourtia indica* (Syn. *F. ramontchi*) (Katachi), *Grewia helicterifolia* (Banbhunja), *Nyctanthes arbor-tristis* (Harsingar).

Shrubs:

Phoenix humilis and *Phoenix acaulis* are most prevalent. *Clausena pentaphylla* (Rowana) is a characteristic species.

Grass:

On the slopes the occurrence of grass is patchy but higher up on exposed spurs and ridges there is growth of tall trees. *Eulaliopsis binata* (Sabai), *Heteropogon contortus* (Suara) and *Cannabis indica* (Kush) are common species.

Climbers:

Bauhinia vahlii (Mahulan) and *Acacia pennata* (Arar) are common climber species.

III. West Gangetic Moist Mixed Deciduous Forest

This type of forest is very abundant in Madanpur Block. The main species are as under.

Top canopy

Adina cordifolia (Karma), *Terminalia tomentosa* (Asan), *Lannea coromandelica* (Jhingna), *Terminalia belerica* (Bahera), *Anogeissus latifolia* (Anjhi), *Garuga pinnata* (Kenkar), *Stereospermum suaveolens* (Pandar), *Salmalia malabarica* (Semal), *Albizia procera* (Safed Siris), *Terminalia chebula* (Harra), *Albizia lebbeck* (Kala Siris).

Middle story:

Lagerstroemia parviflora (Asidh), *Syzygium cumini* (Jamun), *Eugenia operculata* (Bodra), *Mitragyna parvifolia* (Tikul), *Trewia nudiflora* (Bhilor), *Mallotus philippensis* (Rohina), *Bridelia retusa* (Khaja), *Bauhinia malabarica* (Sahul), *Randia uliginosa* (Pindar), *Cassia Fistula* (Amaltas), *Casearia tomentosa* (Beri), *Ehretia laevis* (Datrang), *Spondias pinnata*, (*Syn. S. mangifera*) (Amra), *Cordia dichotoma* (Lasorha), *Kydia calycina* (Patai), *Dalbergia latifolia* (Kala Shisham), *Salix tetrasperma* (Baisa, Bod, only in Madanpur Block), *Ficus glomerata* (Gular), *Aegle marmelos* (Bel, only in Someshwar Block).

Ground Cover:

Clerodendrum viscosum (Titbhant), *Colebrookea oppositifolia* (Pansra), *Grewia helicterifolia* (Banbhunja), *Flacourtia indica* (Ketahi, Bilangada), *Crinum asiaticum* (Sudarshan), *Litsea* species and *Moghania* species.

Climbers:

Acacia pennata (Arar), *Millettia auriculata* (Gauj), *Butea parviflora* (Mahai, Palas), *Ventilago maderaspatana* (Keoti), *Caesalpinia digyna* (Hainskant).

IV. Khair Sissoo Forest

The distribution of this type of forest is largely confined along the Gandak river and its tributaries in Madanpur Block. It is usually seen that grasses *saccharum munja* and *Tamarix dioica* appear first on fresh alluvial deposits followed successfully by *Acacia Catechu*, *Dalbergia Sissoo*, *Salmalia malabarica* and *Adina cordifolia*.

V. Cane Brakes

This type of forest is found in wet hollows and depressions along the various tributaries of Gandak river in Madanpur Block and some compartment of Triveni Block. *Calamus tenuis* (Cane) occurs under large sized miscellaneous tree and rise to heights up to 60ft.

VI. Eastern Wet Alluvial Grasslands

This type of forest occupy a sizeable area in almost all compartment of Madanpur Block as extensive Savannah land. A few compartments of Triveni and Someshwar Blocks also contain grassy blanks. Common grass species are; *Phragmites karka*, *Erianthus munja*, *Vetiveria zizanioides*, *Cymbopogon nardus*, *saccharum spontaneum*, *Typha elephantina*.

VII. Barringtonia Swamps

This type is confined to only one compartment of Madanpur Block, M-19, situated beside the river Gandak. The species naturally occurring are *Salix tetrasperma*, *Barringtonia acutangula*, *Bischofia javanica*, *Syzygium cumini* with some Sissoo, Khair and semal on slightly raised ground and grasses along with canes in depressions.

C. FAUNA

The tract is considerably rich in variety of wildlife. A knowledge of the fauna has been acquired on the basis of actual sightings by staff and others.

Mammals:

The tract is very rich in tiger (*Panthera tigris*) population. The important prey animals are Chital, Sambar and Nilgai. Among other carnivores are Leopard, Hyena, Jungle cat, Indian civet, Wild dog, Jackal, Sloth bear, Wild bear, Wolf etc. Among herbivores are Spotted deer, Barking deer, Hog deer etc. Beside Monkey and Langoons, Squirrels, Rats and Mongoose are commonly found.

Birds:

The tract is very rich in avifauna. The common birds are Peafowls, Partridges (black and grey), Quails, Pigeon, Mynas, Bulbul, Hornbill, Parrot, Woodpeckers, Vultures, Eagles, Flycatchers, Sunbirds etc. Kalij pheasant, locally known as Churcha is also found.

Reptiles:

Ghariales are found in Gandak river. Python, Cobra, Krait, Dhamin are commonly found. Beside this tortoises are also found.

Fish:

Rohu, Katla, Kahawai, Naini, Garai, Channa, Tengra, Banguri and several other edible fishes are found in various nallah, dabras (pool) streams, Rohua and Gandak river.

4. CONCLUSION

From the present study concluded that the flora and fauna of the Valmiki National Park is very unique. To conserve the ecosystem of Valmiki National Park we must conserve this unique biodiversity. Conservation of soil and water is also essential. Controlled grazing will be allowed in buffer zone. Poaching of wild animals must be stopped. Wildlife Protection Act, 1972, the act for the protection of wild animals, birds and plants must be enforce. It shall be the duty of every citizen of India to protect and improve the natural environment including forests and wildlife.

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