Chapter 4
Account of Vegetation and Biodiversity in Mehao Wildlife Sanctuary
Account of Vegetation and Biodiversity in Mehao Wildlife Sanctuary

The unique geographical position, varied topography, high annual precipitation spreading throughout the year and minimum destruction by human interference make the area one of the richest treasure-houses of botanical wealth.

Due to its inaccessibility and remoteness, the vegetation of Mehao Wildlife Sanctuary is still pristine and virgin. It represents a true wilderness of changing, lush green vegetation. There is such a luxuriance and floral diversity that no single species can be said to be dominant in the area.

The vegetation can be broadly classified into tropical, subtropical and temperate. The tropical and sub-tropical evergreen forests predominate the areas. The tropical wet-evergreen forests are mostly in lower reaches and temperate vegetation is met with in upper reaches. The low-land tropical evergreen forests of Mehao Wildlife Sanctuary are the large remaining Dipterocarpus forests.

The vegetation of Mehao Wildlife Sanctuary can be broadly categorized based on the altitude and species composition into following main forest types:

1. **Tropical forests**: up to 900m.
2. **Subtropical forests**: between 900-1800m.
   a. Subtropical broad leaved forests.
   b. Subtropical/Temperate Pine forests.
3. **Temperate forests**: between 1800-3500m.

**Tropical Forests**

These forests occur throughout the district along the foothills, river valleys and are characterized by broad leaved evergreen or semi-evergreen tree species. The region experiences heavy rainfall, high summer temperature and mild cold during winter months. The top canopy composed of tall trees. viz. Terminalia myriocarpa. The other prominent species of the top canopy are *Anthus grandis*, *Duabanga grandiflora*, *Terminalia bekerica*, *Magnolia spp.*, *Elaeocarpus arisatus*, *Gmelina*
arborea, Acrocarus fraxinifolius, Artocarbus chaplasea, Dellenia indica, Sterculia villosa, Castanopsis indica, Bombax ceiba, Albizia procera etc.

The middle storey is dominated by Castanopsis indica, Syzygium cumini, Magnolia hodgsonii, Quercus lanceaefolia, Macaranga denticulate, Albizia lucida etc.

In the shrubb and herbaceous layers Clarodendrum, Mussaenda, Bochmieria, Maesa is seen occasionally.

These forests support a variety of climbers namely Acacia, Vitis, Mucuna macrocarpa, Thunbergia grandiflora, Tinospora, Ficus scandens, Mikania micrantha.

The tall trees with their dense close canopy enhances humidity in the atmosphere thus provide excellent conditions for the luxuriant growth epiphytic orchids namely, Aerides, Pholidota, Dendrobium, Bulbophyllum, Cymbidium, Eria, Halaenopsis etc. and various types of ferns.

In certain places, low hill plain and semi-evergreen riverine forests are also found which occur in areas affected by floods and occasional inundations by large rivers.

Subtropical Forests: These can be divided into 2 subtypes.

(i) Subtropical broad leaved evergreen Forests:

The top storey of canopy is dominated by species namely Quercus lamellosa, Q. elegans, Q. spicata, Acer niveum, Michelia oblonga, Schima wallichii, Albizia arunachalensis, Ficus sp., Photinia sp., whereas, species of Cinnamomum, Rhododendron, Wendlandia, are the main constituent of the middle storey.

The shrubby and herbaceous layer is much more pronounced and is composed of Mahonia nepalensis, Plectranthus ternifolius, Camellia caduca, Vernonia saligna, Rosa indica, Rubus, Gaultheria, Justicia khasiana, Plantago major, Oxalis, Polygonum. Potentilla sp., Clematis, Thunbergia, Clitoria, Dioscorea, Jasminum, Lagenaria, Lygodium etc. are common.

These forests offer congenial climate for the epiphytic forms which include a large number of orchids, ferns, bryophytes, lichens, etc. The moist, humus rich forests floor harbour a variety of ground orchids, like species of Anthogonium, Calanthe, Phaius, Malaxis, Oberonia, Nervilia, Chrysoglossum, etc.

(ii) Subtropical/Temperate Pine Forests:

These forests extend both in subtropical and temperate zones and normally
occur in rain shadow areas. Such forests are represented mainly by species of Pinus and are generally associated with Alnus nepalensis, Rhododendron arboretum, Artemisia nilagirica, Rubia, Rabus spp., These forests lack epiphytic forms.

**Temperate Forests:**

This group can be divided 2 subtypes depending upon the moisture availability.

(i) Temperate broad leaved forests:

This type is found between 1800 and 2800m in cold climatic regions with severe winter coupled with moderately high rainfall. They exhibit complex structure. The top canopy is represented by tall trees, like Betula, Magnolia, Alnus nepalensis, Quercus lamellose, Michelia sp., Rhododendron sp. The lower storeys are occupied by small trees and shrubs like – Lyonia ovalifolia, Vaccinium doniannum, Myrsine semiserrata. The ground flora consists of species of Frangaria, Begonia, Geranium, Corydalis. Polygonum, Thalictrum, Anaphalis, Valeriana and Coptis teeta. In some places. Various kinds of epiphytes such as Rhododendron, Agapetes, Vaccinium Aeschynanthus along with orchid species of Eria, Vanda, Cymbidium, Otochilus, Coelogyne, Bulbophyllum are of common occurrence along with many types of ferns and fern allies like species of Lycopodium, Selaginella, etc.

(ii) Temperate coniferous forests:

These forest type are confined to hill tops between 2800 and 3500 metres which experiences regular snowfall during winter months. These are dominated by top canopy species like Abies densa, Tsuga dumosa, Cupressus torulosa, Taxus baccata sub sp. wallichiana, Larix sp., etc. Sometimes broad leaved tree species of Rhododendron, Sorbus, Photinia, Betula, Quercus, Ilex. etc. are seen associated with these conifers.

**FAUNA:**

The richness and diversity of the flora composition provides rich varieties of faunual species. The density of vegetation provides food and shelter to the various insects, reptiles, birds and mammals, all together forming a balanced environment and abode of aesthetic beauty. The common species of the mammals, birds and insects which were recorded in the sanctuary are stated below:-

<27>
MAMMALS:
• Tiger (Panthera tigris)
• Leopard (Panthera pardus)
• Clouded Leopard (Neofelis leopard)
• Leopard Cat (Felis bengalensis)
• Jungle Cat (Felis chaus)
• Fishing Cat (Felis viverrina)
• Spotted Linsang (Prionodon pardinus)
• Common Mongoose (Herpestes edwardsi)
• Wild Dog (Cuon alpinus)
• Jackel (Canis alpinus)
• Yellow bellied Weasel (Mustela kathiah)
• Burmes Ferret Badger (Melogale personata)
• Malay Treeshrew (Tupaia glis)
• Common Otter (Lutra lutra)
• Indian Porcupine (Hystrix indica)
• Himalayan Black Bear (Selenarctos thibetanus)
• Assamese Macaque (Macaca assamensis)
• Stumptail Macaque (Macaca speciosa)
• Slow Loris (Nycticebus coucang)
• Hoolock (Hylabates hoolock)
• Indian Elephant (Elephas maximus)
• Gaur (Bos gaurus)
• Sambar (Cervus unicolor)
• Barking Deer (Muntiacus muntjak)

And the high mountains mammals of following species are recorded:
• Red Panda (Allurus fagaris)
• Musk Deer (Moschus moschi ferus)
• Mishmi Takin (Budorcas taxicolor)
• Serow (Capricornis sumatraensis)
• Goral (Nemorhaedus goral)
• Snow Leopard (Panthera uncia)

BIRDS:

The fauna is also very rich and varieties of birds species are found in this sanctuary. Uptill now 200 species of birds have been identified. Some of the birds from this check list are stated below:-
• Goosander (Mergus merganser)
• Large Cormorant (Phalacrocorax carbo)
• Mallard (Anas platyrhynchos)
• Godwall (Anas strepera)
• Cotton Teal (Netta coromandeliana)
• Three Toed Forest Kingfisher (Cetx erithacus)
• Himalayan Pied Kingfisher (Ceryle lugubris)
• Blue Throated Barbet (Megalaima asiatica)
• Temmink’s Tragopan (Trogopan temminckii)
• Monal Pheasant (Lophophorus impejanus)
• Japanese Awfinch (Coccocraustes personatus)
• Whitnaped Yuhina (Yuhina bakeri)
• Silverreared Mesia (Leiothrix argentauris)
• Large Niltava (Musciaca grandis)
• White Throated Red Stilt (Phoenicurus schisticeps)
• Spotted Short Tailed Wrenbabbler (Spelaornis formosus)
• Alpine Chough (Pyrrhocorax graculus)
• White Spotted Laughing Thrust (Garrulax ocellatus)
• Blue Wing Laughing Thrust (*Garrulax squamatus*)
• Red Headed Laughing Thrust (*Garrulax erythrocephalus*)
• Great Pied Hornbill (*Buceros bicornis*)
• Tibetan Greybacked Shrike (*Lanius tephronotus*)
• Green Magpie (*Cissa chinensis*)
• Large Racket-tailed Drongo (*Dicrurus hottentototutus*)
• Wren (*Troglodytes troglodytes*)
• Black Napped Oriole (*Oriolus chinensis*)
• Longtailed Broadbill (*Psarismus dalhousiae*)
• Blue Napped Pitta (*pittanipalenisis*) etc.

**SNAKES:**

Varieties of snake species, both poisonous and non-poisonous are found in this sanctuary. Among the poisonous snakes the following deserve special mention:

• Black Krait (*Bungarus Niger*)
• Banded Krait (*Bungarus Bungarus*)
• Cobra Naja Naja (*Monocellants & Bicellente*)
• King Cobra (*Naja Bennah*)
• Pit Viper (*Trumeresurus Monticols*)

Among the non-poisonous snakes are the following:

• Python (*Python Nolurus*)
• Reticulate Python (*Python reticulate*)
• The Whip Snake

• Common Indian Black Snake
• Checkered Keel Back
• Himalayan Cat Snake
• Green Whip Snake
• Stripedracer (*Eleph tainitura*)

**FISH:**

The rivers / streams contain various types fish species. Some of the identified fishes are listed below:

• *Garra annandalei*
• *Garra gotyla gotyla*
• *Garra lamta*
• *Aborichthys elongates*
• *Botia dayi*
• *Cyprinion semiplotum* etc.

**BUTTERFLY:**

The sanctuary is also rich in butterfly species. About 232 species of butterfly were identified. The common butterflies are stated below:

• Common Peacock (*Princeps polctorganesa*)
• Paris Peacock (*Princeps paris paris*)
• Yellow Helen (*Princeps nephelus chaon*)
• Red Helen (*Princeps helenus helenus*)
• Glassy Bluebottle (*Graphium cloanthus*)
• Great Zebra (*Princeps xenocles phrontis*)
• Chocolate Albatross (*Appias lyncidaelanaor*