Chapter 2

PHYSIOGRAPHY OF THE STUDY AREA
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INTRODUCTION

North-eastern region of India forms part of three zoo-geographic subregions—the Himalayan, the Indian and Indo-Chinese, broadly falls within the Oriental Zoogeographic Region (often called the Indo-Malayan region). However, The Himalayan Subregion is also transitional to the Palaeartic Region as a number of Palaeartic taxa occur in the area. The zoogeographic regions are still broadly categorised on Sclater (1858) and Wallace (1876), who divided the world into six regions (Choudhury, 2013).

The Barak-Valley districts (i.e., Cachar, Karimganj and Hailakandi) include a total of sixteen Reserve Forests, out of which two lies in Hailakandi, seven each in Karimganj and Cachar respectively. Amongst all of the reserve forest the Inner-line reserve forest is the largest. The Inner-line covers an area of 424 sq. km. inside the Cachar district and almost 81 sq. km. in the district of Hailakandi. Also, the same reserve forest is continuous to the neighbouring state of Mizoram.

The topography of the valley is having hills, low lands and plain areas. The Barak-Surma-Kusiara river system passes through this valley. It is geographically the part of ‘Surma Valley’ of the undivided India consisting of the old districts of Sylhet (now included in Bangladesh) and Cachar. Out of the areas under erstwhile Surma Valley, only Cachar and a part of Karimganj sub-division of Sylhet district form the present Barak Valley.

The valley has derived its name from the main river, Barak. The valley is covered with a network of sluggish streams and saucer-like depressions. Numerous
hillocks stand all over the valley. The valley is also covered by hill ranges from north, east and south. It has vast tracts of forest land in its southern side. The forest cover of the valley has been on the steady decline and the forest areas have decreased from 44.4 percent (in 1951) to 34.9 percent (in 1994-95) (Bhattacharjee and Nayak, 2003). In 1979, out of the total land area of 6948 sq. km., the area had the coverage of 2023 sq. km. under non-forest category, 2549 sq. km. under moderate forest cover and 2376 sq. km., under dense forest cover. With further progress of time, the scenario has worsened more. In 1999 the non-forest cover, moderate forest cover, and dense forest cover were 2144 sq. km., 3081 sq. km., and 1723 sq. km. respectively whereas in 2010 the areas were 1731 sq. km., 3747 sq. km., and 1470 sq. km. respectively (Das and Joshi, 2013). The hilly terrain in the valley has been in use for tea plantation and the principal crops produced in the plain areas are rice, jute, sugarcane, potato, rapseed, mustard seed etc. About 90 percent of the gross cropped area is used for cultivation of rice and tea plantation.

As mentioned earlier, the Inner-line Reserve Forest (ILRF) is the largest reserve forest in the southern part of Assam having an area of 424 sq. km. This reserve forest came into existence in 1876-77 through a gadget notification of the colonial government of Assam (Hunter, 1879). The ILRF is bound by the state of Mizoram in the South, Part of Mizoram and Manipur in the East, and Hailakandi district of Assam in the West. On its North lies the Barak R.F., Sonai RF along with Dholai Tehsil areas.

ILRF harbours a number forest types. Along with ‘Sonai’ and ‘Rukni’ rivers, the two major tributaries of River Barak flow through this forest. Besides, a number
of small springs, streams, marshes and other water bodies are also common in the area.

Geography of the study area:

The Inner-line Reserve Forest covers a total of 424 sq. km. inside Cachar District. The same reserve forest is continuous in the neighbouring Hailakandi District and Mizoram state. The Barak Valley, Assam includes three districts, covering an area of 6222 sq. km. and is administratively divided into 27 Blocks, 321 Gaon Panchayats and 1050 Villages. The valley lies between 92°15' and 93°15' E longitude and 24°08' and 25°08' N latitude. Undulated hilly terrain of North Cachar Hill district and Jaintia Hills geographically isolates the area from rest of the state of Assam as well as India. The area is surrounded by the state of Manipur and a small part of Mizoram state in the east, on the west lies the Katakhal RF and Hailakandi part ILRF. On the north lies the Sonai and Barak RF and part of Cachar district, while on the south lies the Mizoram part of ILRF.

Climate of the study area:

The climate of Inner-line Reserve Forest as well as the Barak valley is characterised by higher temperature during the summer and highest humidity during the rainy months/wintry mornings. Range of minimum and maximum temperature in the valley during winter is 8°C to 10°C and summer is 35°C to 39°C respectively. In the early parts of the year, scorching wind occurs. Average rainfall is as high as 2700 to 2800 mm and the minimum and maximum annual rainfall have been noted are 1700 mm and 4000 mm respectively. Consequently, the valley often
experiences flood. The air during the monsoon remains surcharged with moisture. The average morning humidity during winter months have been observed to be as high as 100%, whereas the afternoon humidity ranges between 60-65% on an average, but on wet season, it may reach near to 100%. (Choudhury, 1999)

Geological features:

CACHAR AND BARAK VALLEY: The soil of the plains of Cachar is an alluvial deposit of mixed sand and clay, in which sand predominates. On the hills and other elevated tracts, the surface soil is a rich vegetable mould, and the rocks underneath are composed of quartz, schist, and conglomerate (Hunter, 1879).

The hillocks of Barak valley are weathered sand dunes of Tertiary period. The spurs which run into the valley are Tipam sandstones of Pliocene age and geologically speaking are very young rocks (Harler, 1928). The alluvium of plain areas is derived almost wholly from the Tipam sandstones. Barak Valley, like rest of the Assam is a seismic area. The area receives frequent earthquakes. The Valley lies in the ‘Oil belt’ running from Assam to Arakan, through Barak valley districts and Chittagong of Bangladesh. The proliferous beds occur in a series of tertiary rocks known as the ‘Coal measures’ (Harler, 1928).

INNER-LINE RESERVE FOREST: The ILRF includes undulating plains and small hillocks. The South-Eastern part of the Reserve Forest is hilly which borders the state of Manipur and Mizoram. The northern and western side of the reserve forest includes small hillock with undulating plains areas. The soils of the study areas include alluvial deposit of mixed sand and clay in the plains, in which sand
The ILRF includes approximately 424 sq. km areas. The South-Eastern part is dominated by forest covered hills and hillock. The high hill areas have 'Pan-jhum' cultivation done by the P'nar tribe. Such cultivations are observed along with dense evergreen forest. All other parts of ILRF are dominated with small sized hillock, undulating plain and agricultural fields cultivated by the people of Forest Villages and bordering villages. The northern part of the ILRF have good communication with the district head quarter Silchar and includes high 'built up' areas including RCC construction like market shades, Assam type houses, black topping roads etc. The extreme western part of the reserve forest has a high rate of monoculture plantation apart from agricultural fields and tea plantation. The river 'Barak' forms the eastern boundaries of this reserve forest that also flows from the south to the north. Other than 'Sonai' and 'Rukni', another river 'Dholai' passes through the north-western side of the reserve forest and meets 'Rukni' near Palonghat area.

Vegetation characteristics:

The vegetation in the Inner-line Reserve Forest is mostly Tropical evergreen. The vegetation of the ILRF represents a diverse type with a variety of man-made disturbances. The Reserve Forest includes of mixed forest types like evergreen forest, semi evergreen forest along with a number of deciduous plant species. The vegetation of ILRF includes 'jhum' cultivated areas, agricultural cropland of various communities with a variety of rice species and monoculture plantation by the forest.
department etc. An elaborate description of the trees and shrubs occurring in the ILRF has been given in the chapter-III.

The North Eastern region is one of the biodiversity rich areas and has the highest mammalian diversity within India territory (Choudhury, 2013). The Cachar District covers 3.786 km² and constitutes 4.83% of the total area of Assam. The Inner-line Reserve Forest is a part of this area and is hitherto unexplored or under explored.

OVERVIEW OF THE STUDY AREA:

The Inner-line is the largest reserve forest in southern Assam and the same forest embraces to the neighbouring district of Hailakandi and the state of Mizoram. Southern parts of Assam along with northern parts of Mizoram are widely occupied by this reserve forest. Forest of Katakhal, Sonai, and Barak reserve of Assam are continuous with Inner-line and possess several wildlife corridors within themselves.

Inner-line reserve forest, Cachar, is lying in the transitional zone between Himalayan and Indo-Burma Hot Spots. Topography of this forest is undulating one with hills, and plain areas. River Barak passes through eastward border of it. The forest cover of Inner-line is evergreen and semi evergreen deciduous type.

The climate of forest areas is hot with high percentage of humidity. The winter season starts from the last part of October to first part of February. Hill and hillocks of Inner-line are weathered sand dunes. Geologically, sandstones of this area are very young rocks.

Inner-line reserve forest, Cachar part have three distinct areas i.e. Loharbond part, Hawaithang range and Monierkhal division. Areas of Loharbond are a uniform
mixture of plain and small hillock except the far eastern part, where a hill range separates this area with Hawaithang range and Dholai tehsil area. Hawithan areas are large plain areas surrounded by high hill from all three directions except the northern part from where the Sonai reserve forest begins with. The third part of Inner-line, i.e. Monierkhal division is highly terrain and it continuous with forest areas of the state of Manipur. The sole barrier between the reserve forest and Manipur is the river 'Barak'. This river is very constricted throughout the stretches and can be crossed during dry season when water level becomes low.

The reserve forest includes twenty two forest villages within it and also during study period encroached areas are also observed. Loharbond part has few 'jhum' cultivating area that comes under Purvanaxa encroached areas. 'Reang' community of the areas are involved in such practices. In Hawaithang, 'jhum' cultivation is practiced by P'nar, Kuki and H'mar community. In Monierkhal also H'mar and Kuki tribes are involved in such types of 'slash and burning' practices. Bengali, Dimasa and Tea Tribes of all other forest villages of Inner-line are involved in usual agricultural practices. During the month of September, such lush green agricultural field can easily be observed. Inner-line forest cover thus is undergoing qualitative degradation along with increased rate of fragmented habitats.
REFERENCES


