

7.17 MANIPUR

7.17.1 Introduction

The hilly State of Manipur is situated in northeastern part of the country with an area of 22,327 km². It shares international border with Myanmar and lies between latitude 23°50' and 25°42' N and longitude 92°59' and 94°46' E. Geographically, the State comprise the flat plateau of alluvial valley and hill territory. The State is drained by Imphal and Bara rivers. The annual temperature in the State ranges from 14.5°C to 38°C and the average rainfall ranges from 1,250 mm to 2,700 mm. The months from November to February remain dry and the remaining eight months are more or less rainy.

As per Census 2001, the total population of the State is 2.29 million of which the rural population constituted 74.89%. The population density is 102 persons per km². The Scheduled Tribes constitute 34.2% of the population. The projected population of the State is 2.39 million (as projected by the Office of RGI for 2009). The livestock population is 0.97 million (Livestock Census 2003), which has decreased by nearly 25% since the census of 1992. Shifting cultivation is widely practised in the State.

Land use pattern is given in Table 7.17.1.

7.17.2 Recorded Forest Area

About three fourth of the State's geographical area is under recorded forests. The recorded forest

area of the State is 17,418 km². Reserved Forests constitute 8.42%, Protected Forests 23.95% and Unclassed Forests 67.63% of the total forest area.

7.17.3 Protected Areas

Manipur has one National Park and one Wildlife Sanctuary covering an area of 224 km² which constitutes 1.01 % of the State's geographical area. The Manipur Brow-antlered deer is an endemic species for which a conservation project was initiated in 1973. Loktak lake with an area of 26,600 ha is a wetland of international importance, which has been designated as a Ramsar site.

7.17.4 Joint Forest Management

Joint Forest Management started in 1990, and has 280 Committees managing about 90,000 ha of forest area, which is 5.39% of the forest area of the State. Nearly 26,000 families are involved in this programme, of which around 22,000 families belong to the Scheduled Tribes.

Source: MoEF, 2005.

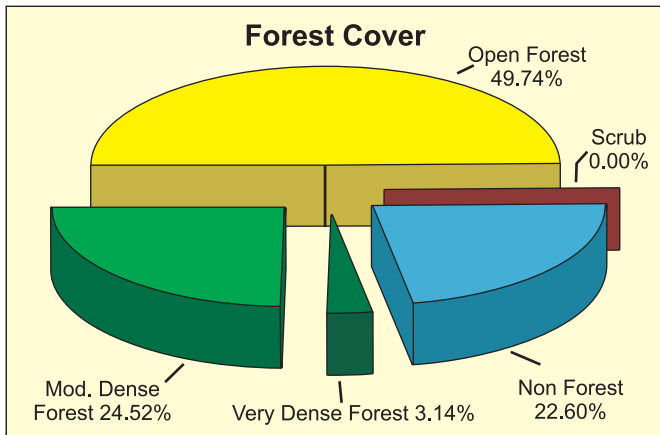
7.17.5 Forest Cover

The forest cover in the State, based on interpretation of satellite data of Dec 2006 -Jan 2007, is 17,280 km², which is 77.40% of the State's geographical area. In terms of forest canopy density classes, the State

Table 7.17.1: Land use pattern

Land Use	Area in '000 ha	Percentage
Total geographical area	2,233	
Reporting area for land utilization	1,951	100.00
Forests	1,693	86.78
Not available for cultivation	27	1.38
Permanent pastures and other grazing lands	1	0.05
Land under misc. tree crops & groves	6	0.31
Culturable wasteland	1	0.05
Fallow lands other than current fallows	0	0.00
Current fallows	0	0.00
Net area sown	224	11.48

Source: Land Use Statistics, Ministry of Agriculture, GOI, 2006.



has 701 km² very dense forest, 5,474 km² moderately dense forest and 11,105 km² open forest. The distribution of forest cover of the State is shown in Fig. 7.17.

Comparison of the current forest cover (satellite

data of Dec 2006 - Jan 2007) with the previous assessment (satellite data of Feb 2004 - Jan - Feb 2005) shows a gain of 328 km² of forest cover.

The change matrix, given in Table 7.17.2, reveals that there has been an increase of 12 km² in very dense forest, 364 km² in the open forest, whereas a decrease of 48 km² in moderately dense forest.

On the basis of ground truthing by the officials of FSI, main reason for the net increase in forest cover was regeneration in abandoned areas of the shifting cultivation.

District wise forest cover in different canopy density classes and scrub along with the changes compared to 2005 assessment is given in the Table 7.17.3.

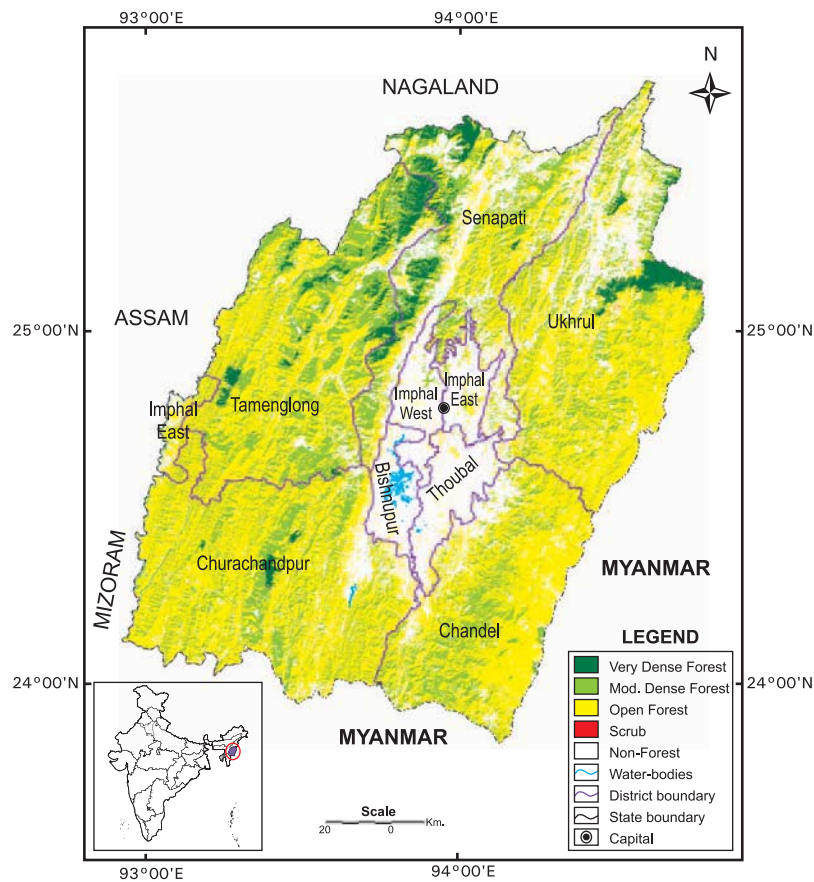


Fig. 7.17 : Forest cover map of Manipur

Table 7.17.2: Forest cover change matrix

(area in km²)

2005 Assessment (Data of Jan - Feb 2005)	2007 (Data of Dec 2006 - Jan 2007)					Total of 2005
	VDF	MDF	OF	Scrub	NF	
Very Dense Forest	689	0	0	0	0	689
Moderately Dense Forest	12	5,455	4	0	51	5,522
Open Forest	0	9	10,502	0	230	10,741
Scrub	0	0	0	1	0	1
Non-Forest	0	10	599	0	4,765	5,374
Total of 2007	701	5,474	11,105	1	5,046	22,327
Net Change	12	-48	364	0	-328	

Table 7.17.3: District-wise forest cover in 2007

Number of districts: 9

(area in km²)

District	Geographical area	Very dense forest	Mod. dense forest	Open forest	Total	% of G.A.	Change*	Scrub
Bishnupur TH	496	0	0	20	20	4.03	0	0
Chandel TH	3,313	0	734	2,065	2,799	84.49	0	0
Churachandpur TH	4,570	37	1,169	3,068	4,274	93.52	202	0
Imphal East TH	669	0	43	173	216	32.29	2	0
Imphal West TH	559	0	24	30	54	9.66	-2	0
Senapati TH	3,271	233	940	1,130	2,303	70.41	21	0
Tamenglong TH	4,391	264	1,584	2,063	3,911	89.07	75	0
Thoubal TH	514	0	4	52	56	10.89	1	0
Ukhru TH	4,544	167	976	2,504	3,647	80.26	29	1
Total	22,327	701	5,474	11,105	17,280	77.40	328	1

* Change compared to 2005 assessment (revised).

7.17.6 Altitude Zone wise Forest Cover

Forest cover of the State in different altitude zones is given in Table 7.17.4.

Table 7.17.4: Altitude zone wise forest cover

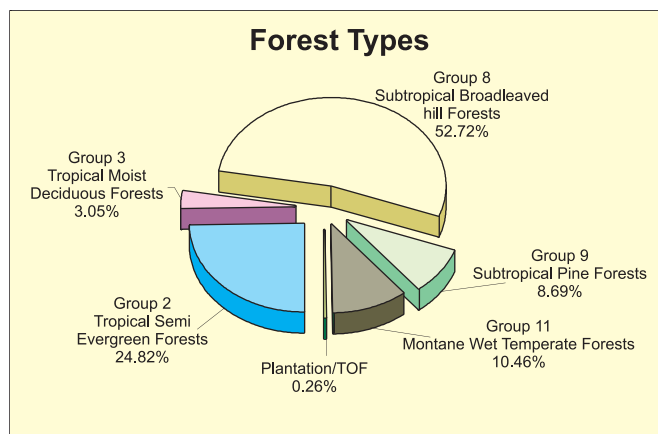
(area in km²)

Altitude Zone	VDF	MDF	OF	Total
0-500m	9	606	2,529	3,144
500-1000m	20	1,662	4,344	6,026
1000-2000m	386	3,002	4,150	7,538
2000-3000m	286	204	82	572
Total	701	5,474	11,105	17,280

(based on SRTM Digital Elevation Model)

7.17.7 Forest Cover in different Forest Types

The State has 8 different forest types as per Champion & Seth's classification system (1968), belonging to 5 type groups viz Tropical Semi Evergreen, Tropical Moist Deciduous, Subtropical Broadleaved Hill, Subtropical Pine and Montane Wet Temperate Forests. Distribution of forest cover in different forest type groups found in the State is given in the pie diagram.



7.17.8 Tree Cover

Tree cover of the State has been estimated using sample data of TOF inventory collected over a period of six years i.e. 2002-08. The estimated tree cover in the State is 197 km² which is 0.88 % of the

geographical area of the State. Imphal West district of the State has been inventoried. The forest and tree cover of the State is presented in the Table 7.17.5.

Table 7.17.5: Forest & tree cover

(area in km²)

Category	Area	% of Geographical area
Tree Cover	197	0.88
Forest Cover	17,280	77.40
Forest & Tree Cover	17,477	78.28