

## 7.3 ASSAM

### 7.3.1 Introduction

Assam is a gateway to northeastern region, having borders with the remaining six northeastern States as well as with Bangladesh and Bhutan. It has a geographical area of 78,438 km<sup>2</sup> making up 2.39% of the country's total area. It is situated between latitude 24°7' to 28°00' N and longitude 89°42' to 96°02'E. Topographically, the State can be divided into three parts, viz the plain areas of Brahmaputra valley, the Surma valley and the mountainous Assam range. Brahmaputra, the largest river of the country, drains the State.

Climate of Assam is subtropical with mean annual rainfall varying from 1,500 mm to 3,750 mm and the temperature ranges between 5°C to 32°C. Land use pattern in the State is shown in Table 7.3.1.

The total population of the State is 26.66 million (Census 2001). Rural population is 87.10% and urban 12.90%; the Scheduled Tribes constitute 12.4% of the population mainly distributed over 8 districts. The population density is 339 persons per km<sup>2</sup>. The projected population of the State by the Office of RGI, for the year 2009 is 29.81 million. The livestock population is 13.83 million (Livestock Census 2003), which has decreased by about 14% since the census of 1992.

### 7.3.2 Recorded Forest Area

The recorded forest area of Assam is 26,832

km<sup>2</sup>, which is 34.21% of the total geographical area. According to legal status, Reserved Forests constitute 66.58%, and Unclassed Forests, 33.42% of the total forest area.

### 7.3.3 Protected Areas

The protected area network of Assam includes 5 National Parks and 18 Wildlife Sanctuaries covering an area of about 0.40 million ha constituting 4.98% of the total geographical area. The State has three Tiger Reserves: Kaziranga, Manas and Nameri. Manas Biosphere Reserve, with an area of 2,837 km<sup>2</sup>, is spread over Kokrajhar, Bongaigaon, Barpeta, Nalbari, Kamrup and Darrang districts. Kaziranga National Park and Manas Wildlife Sanctuary are in the list of World Heritage sites.

### 7.3.4 Joint Forest Management

Joint Forest Management started in the State in 1998. There are 503 JFM committees managing 80,000 ha of forest area. The number of families involved in JFM is 57,341 including 28,459 families of Scheduled Tribes. Source: MoEF, 2005.

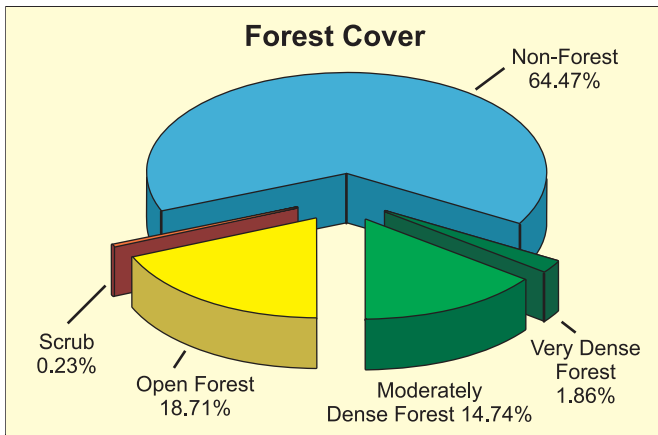
### 7.3.5 Forest Cover

The forest cover in the State, based on interpretation of satellite data of Oct 2006 - Jan 2007, is 27,692 km<sup>2</sup>, which is 35.30% of the State's

**Table 7.3.1: Land use pattern**

Land Use	Area in '000 ha	Percentage
Total geographical area	7,844	
Reporting area for land utilization	7,850	100.00
Forests	1,954	24.89
Not available for cultivation	2,512	32.00
Permanent pastures and other grazing lands	160	2.04
Land under misc. tree crops & groves	209	2.66
Culturable wasteland	77	0.98
Fallow lands other than current fallows	60	0.76
Current fallows	127	1.62
Net area sown	2,753	35.07

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



geographical area. In terms of forest canopy density classes, the State has 1,461 km<sup>2</sup> very dense forest, 11,558 km<sup>2</sup> moderately dense forest and 14,673 km<sup>2</sup> open forest. The distribution of forest cover of the State is shown in Fig.7.3.

Comparison of the current forest cover (satellite data of Oct 2006 - Jan 2007) with the previous assessment (satellite data of Nov - Dec 2004 & Jan - Mar 2005) shows a loss of 66 km<sup>2</sup> of forest cover.

The change matrix, given in Table 7.3.2, reveals that there has been a decrease of 3 km<sup>2</sup> in very dense forest, 95 km<sup>2</sup> in the moderately dense forest and increase of 32 km<sup>2</sup> in open forest.

On the basis of ground truthing by the officials of FSI and the information gathered from the State Forest Department, main reasons for the increase in forest cover in the districts Karimganj, Hailakandi and Jorhat are regeneration of abandoned shifting cultivation and new plantations. The loss of forest cover is attributed mainly to encroachment in insurgency affected areas of Sonitpur, Karbi Anglong and Darrang districts as observed during field verification by FSI officials. Some decrease in forest cover has occurred on account of shifting cultivation in the districts of North Cachar Hills, Karbi Anglong and Kokrajhar.

District wise forest cover in different canopy density classes and scrub along with the changes compared to 2005 assessment is given in the Table 7.3.3.

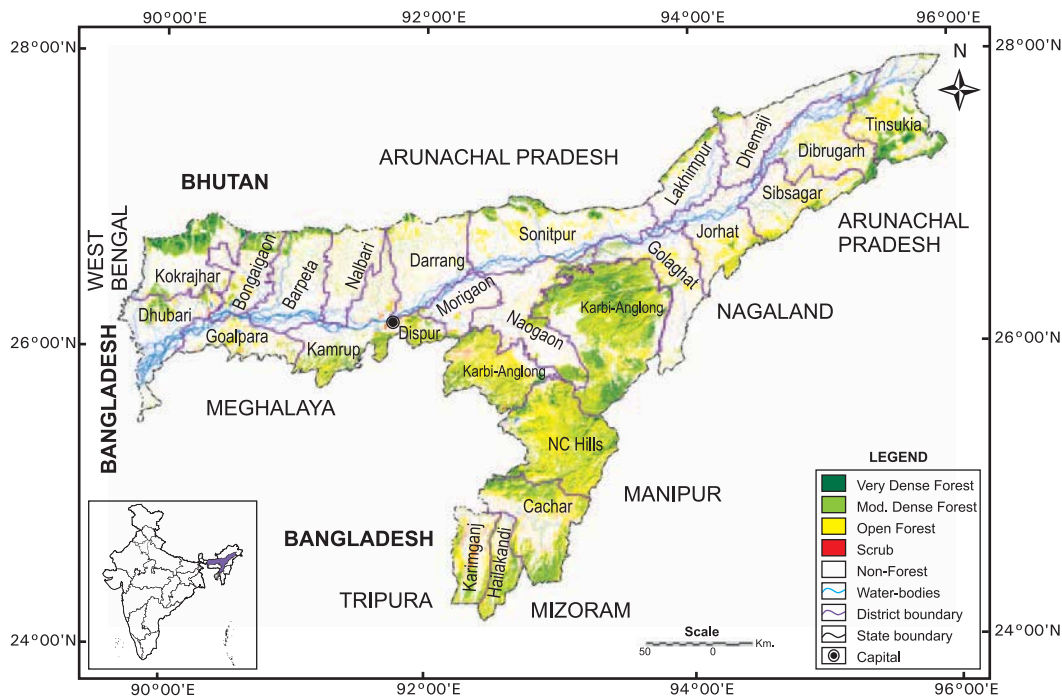


Fig 7.3 : Forest cover map of Assam

**Table 7.3.2: Forest cover change matrix**

(area in km<sup>2</sup>)

2005 Assessment (Data of Nov - Dec 2004 & Jan - Mar 2005)	2007 (Data of Oct 2006 - Jan 2007)					Total of 2005
	VDF	MDF	OF	Scrub	NF	
Very Dense Forest	1,461	2	0	0	1	1,464
Moderately Dense Forest	0	11,513	26	0	114	11,653
Open Forest	0	6	14,281	1	353	14,641
Scrub	0	0	0	176	0	176
Non-Forest	0	37	366	2	50,099	50,504
<b>Total of 2007</b>	<b>1,461</b>	<b>11,558</b>	<b>14,673</b>	<b>179</b>	<b>50,567</b>	<b>78,438</b>
Net Change	-3	-95	32	3	63	

**Table 7.3.3: District-wise forest cover in 2007**

Number of districts: 23

(area in km<sup>2</sup>)

District	Geographical area	Very dense forest	Mod. dense forest	Open forest	Total	% of G.A.	Change*	Scrub
Barpeta <sup>T</sup>	3,245	35	181	185	401	12.36	0	0
Bongaigaon	2,510	33	275	210	518	20.64	0	3
Cachar <sup>T</sup>	3,786	82	976	1,173	2,231	58.93	2	16
Darrang <sup>T</sup>	3,481	14	106	366	486	13.96	-9	2
Dhemaji <sup>T</sup>	3,237	7	125	158	290	8.96	-4	11
Dhubari <sup>T</sup>	2,798	21	202	194	417	14.90	-3	10
Dibrugarh <sup>T</sup>	3,381	29	169	560	758	22.42	2	0
Goalpara <sup>T</sup>	1,824	1	70	265	336	18.42	-1	9
Golaghat	3,502	6	123	392	521	14.88	-1	0
Hailakandi	1,327	13	376	397	786	59.23	5	5
Jorhat <sup>T</sup>	2,851	2	114	494	610	21.40	7	0
Kamrup <sup>T</sup>	4,345	68	611	753	1,432	32.96	-2	26
Karbi Anglong <sup>H</sup>	10,434	578	3,887	3,493	7,958	76.27	-37	25
Karimganj	1,809	3	320	533	856	47.32	11	48
Kokrajhar <sup>T</sup>	3,169	208	738	217	1,163	36.70	-19	1
Lakhimpur <sup>T</sup>	2,277	4	118	166	288	12.65	0	6
Morigaon <sup>T</sup>	1,704	6	41	85	132	7.75	0	3
North Cachar Hills <sup>H</sup>	4,888	136	1,556	2,564	4,256	87.07	-12	1
Naogaon <sup>H</sup>	3,831	41	355	393	789	20.60	0	8
Nalbari <sup>T</sup>	2,257	4	70	208	282	12.49	0	0
Sibsagar <sup>T</sup>	2,668	8	144	541	693	25.97	4	1
Sonitpur <sup>T</sup>	5,324	56	290	607	953	17.90	-10	0
Tinsukia <sup>T</sup>	3,790	106	711	719	1,536	40.53	1	4
<b>Total</b>	<b>78,438</b>	<b>1,461</b>	<b>11,558</b>	<b>14,673</b>	<b>27,692</b>	<b>35.30</b>	<b>-66</b>	<b>179</b>

\* Change compared to 2005 assessment (revised).

### 7.3.6 Altitude Zone wise Forest Cover

Forest cover of the State in different altitude zones is given in Table 7.3.4.

**Table 7.3.4: Altitude zone wise forest cover**

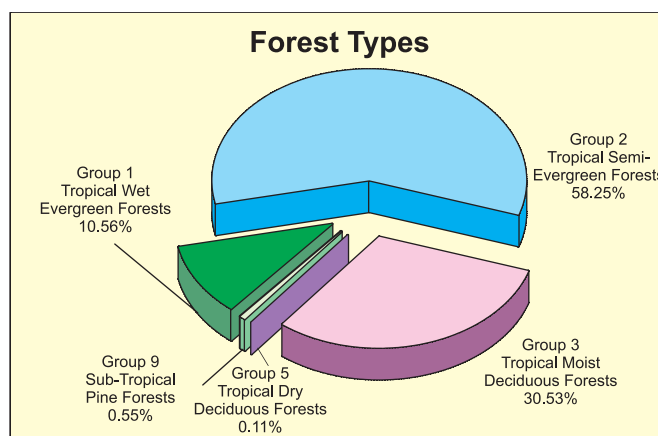
(area in km<sup>2</sup>)

Altitude Zone	VDF	MDF	OF	Total
0-500m	1,071	9,132	12,139	22,342
500-1000m	313	2,096	2,274	4,623
1000-2000m	77	330	320	727
<b>Total</b>	<b>1,461</b>	<b>11,558</b>	<b>14,673</b>	<b>27,692</b>

(based on SRTM Digital Elevation Model)

### 7.3.7 Forest Cover in different Forest Types

As per Champion & Seth Classification, the State has 16 forest types which belong to 5 forest type groups viz. Tropical Wet Evergreen, Tropical Semi Evergreen, Tropical Moist Deciduous, Tropical Dry Deciduous and Subtropical Pine Forests. Distribution of forest cover in different forest type groups found in the State is given in the pie diagram.



### 7.3.8 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 1,590 km<sup>2</sup> which is 2.03 % of the geographical area of the State. Seven districts of the

State (Dibrugarh, Goalpara, Hailakandi, Karimganj, Morigaon, Nalbari and Sibsagar) have been inventoried. The forest and tree cover of the State is presented in the Table 7.3.5.

**Table 7.3.5: Forest & tree cover**

(area in km<sup>2</sup>)

Category	Area	% of Geographical area
Tree Cover	1,590	2.03
Forest Cover	27,692	35.30
<b>Forest &amp; Tree Cover</b>	<b>29,282</b>	<b>37.33</b>