

## 7.29 WEST BENGAL

### 7.29.1 Introduction

West Bengal, the only Indian State to have a coastline as well as the Himalayas, is situated in the eastern part of the country between 21°20' and 27°32' N latitude and 85°50' and 89°52' E longitude, bordering Bangladesh, Nepal & Bhutan. Geographical area of the State is 88,752 km<sup>2</sup> which is 2.7% of the total area of the country. The State has two distinct natural divisions: the North Himalayas and the South Alluvial Gangetic Plains. In the northern part, the three main rivers viz Teesta, Torsa and Jaldhaka are tributaries of the Brahmaputra. The other two important rivers passing through the State are the Ganga and the Hooghly. The Ganga, drains into the Bay of Bengal forming the famous delta of Indian Sundarbans.

The State has a diverse climate, varying from moist tropical in the southeast to dry tropical in the southwest and from subtropical to temperate in the mountains in north. Annual rainfall varies from 900 mm in southwest to about 5,000 mm in northern parts of the State. The temperature also ranges between sub zero in the hills during the winters to about 46°C in southern parts during the summer.

The population of the State is 80.22 million (Census 2001) which constitutes 7.8% of the country's population. The population density is 904 persons per km<sup>2</sup>, which is among the highest in the country. The rural and urban population is 72% and 28% respectively. Scheduled Tribes constitute 5.5% of the

State's population. The projected population of the State by the Office of RGI, for the year 2009 is 87.84 million. The livestock population is 41.62 million (Livestock Census 2003),

The land use pattern of the State is given in Table 7.29.1.

### 7.29.2 Recorded Forest Area

The recorded forest area in the State is 11,879 km<sup>2</sup>, which is 13.38% of the geographical area. Reserved, Protected and Unclassed Forests constitute 59.38%, 31.75% and 8.87% of the total forest area respectively.

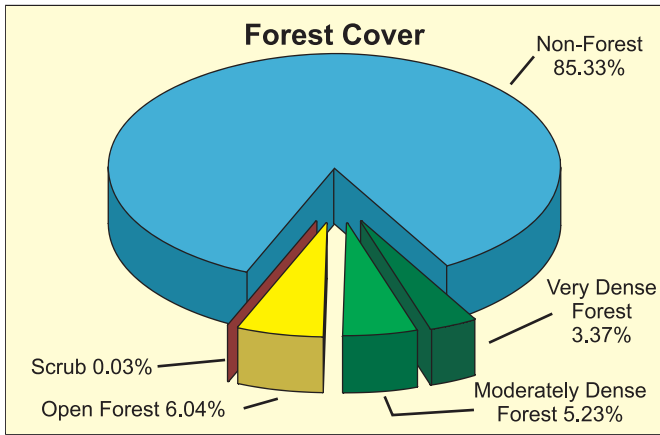
### 7.29.3 Protected Areas

The State has an area of 0.29 million ha i.e. 3.26% of its geographical area under Protected Areas comprising 5 National Parks and 15 Wildlife Sanctuaries. There are 2 Tiger Reserves, namely, Sundarbans and Buxa in the State. Sundarbans is a unique ecosystem having a substantial area under mangrove forests. Recognizing its special conservation value, the area has been declared as Biosphere Reserve (0.96 million ha), which includes a Tiger Reserve and a National Park. Sundarbans National Park is also a World Heritage site. In addition, 2 Elephant Reserves namely Eastern Duars and Mayur Jharna have been formed in the northern and southern parts of the State, respectively.

**Table 7.29.1: Land use pattern**

Land Use	Area in '000 ha	Percentage
Total geographical area	8,875	
Reporting area for land utilization	8,684	100.00
Forests	1,174	13.52
Not available for cultivation	1,754	20.20
Permanent pastures and other grazing lands	5	0.06
Land under misc. tree crops & groves	58	0.67
Culturable wasteland	34	0.39
Fallow lands other than current fallows	22	0.25
Current fallows	341	3.93
Net area sown	5,296	60.99

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



### 7.29.4 Joint Forest Management

The State is credited for the origin of Joint Forest Management in the country in 1971 at Arabari in Midnapur district. There are 4,096 JFM Committees managing about 0.63 million ha of forest area which is about 53% of the forest area of the State. More than

0.48 million families are involved in this programme, of which around 0.11 million families belong to the Scheduled Tribes.

Source: MoEF, 2005.

### 7.29.5 Forest Cover

The forest cover in the State, based on interpretation of satellite data of Oct - Dec 2006, is 12,994 km<sup>2</sup>, which is 14.64% of the State's geographical area. In terms of forest canopy density classes, the State has 2,987 km<sup>2</sup> very dense forest, 4,644 km<sup>2</sup> moderately dense forest and 5,363 km<sup>2</sup> open forest. The distribution of forest cover of the State is shown in Fig. 7.29.

Comparison of the current forest cover (satellite data of Oct - Dec 2006) with the previous assessment (satellite data of Nov - Dec 2004) shows a gain of 24 km<sup>2</sup> of forest cover.

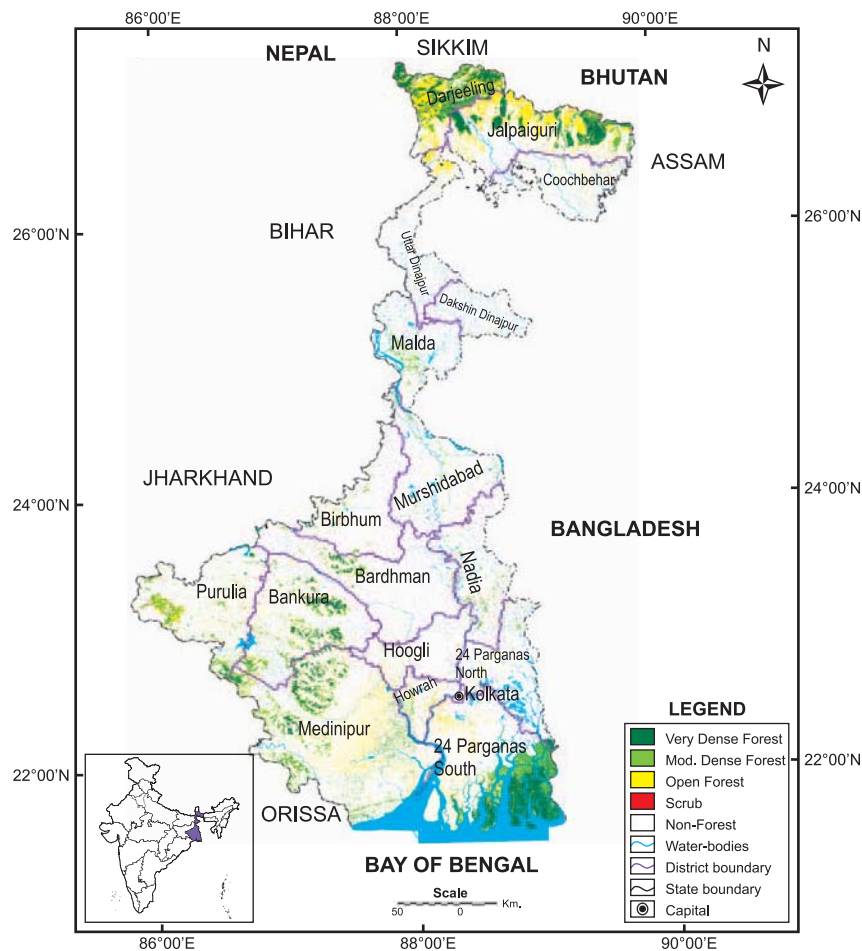


Fig. 7.29 : Forest cover map of West Bengal

## Forest and Tree Resources in States and Union Territories

The change matrix, given in Table 7.29.2, reveals that there has been a decrease of 5 km<sup>2</sup> in the very dense forest, 2 km<sup>2</sup> in moderately dense forest and an increase of 31 km<sup>2</sup> in open forest.

On the basis of ground truthing by the officials of FSI, the main reasons for the increase of forest cover in the districts of Bankura, Bardhaman, Birbhum, South

24 Paraganas, Jalpaiguri & Medinipur are protection of sal coppice and plantation of Acacia, Eucalyptus and Casuarina in the coastal area.

District wise forest cover in different canopy density classes and scrub along with the changes compared to 2005 assessment is given in the Table 7.29.3.

**Table 7.29.2: Forest cover change matrix**

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

2005 Assessment (Data of Nov - Dec 2004)	2007 (Data of Oct - Dec 2006)					Total of 2005
	VDF	MDF	OF	Scrub	NF	
Very Dense Forest	2,974	3	12	0	3	2,992
Moderately Dense Forest	6	4,598	36	0	6	4,646
Open Forest	7	41	5,271	0	13	5,332
Scrub	0	0	1	29	0	30
Non-Forest	0	2	43	0	75,707	75,752
<b>Total of 2007</b>	<b>2,987</b>	<b>4,644</b>	<b>5,363</b>	<b>29</b>	<b>75,729</b>	<b>88,752</b>
Net Change	-5	-2	31	-1	-23	

**Table 7.29.3: District-wise forest cover in 2007**

Number of districts: 18

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

District	Geographical area	Very dense forest	Mod. dense forest	Open forest	Total	% of G.A.	Change*	Scrub
Bankura <sup>T</sup>	6,882	214	510	332	1,056	15.34	2	4
Bardhaman <sup>T</sup>	7,024	44	135	82	261	3.72	3	1
Birbhum <sup>T</sup>	4,545	0	42	63	105	2.31	1	2
Kolkata	185	0	0	0	0	0.00	0	0
Coochbehar	3,387	0	15	79	94	2.78	0	1
Dakshin Dinajpur <sup>T</sup>	2,219	0	2	13	15	0.68	0	0
Darjeeling <sup>TH</sup>	3,149	714	663	912	2,289	72.69	-1	0
Howrah	1,467	0	53	93	146	9.95	0	0
Hoogli	3,149	0	9	52	61	1.94	0	0
Jalpaiguri <sup>T</sup>	6,227	681	514	1,311	2,506	40.24	6	8
Malda <sup>T</sup>	3,733	0	113	51	164	4.39	0	0
Medinipur <sup>T</sup>	14,081	255	1,169	1,171	2,595	18.43	5	0
Murshidabad <sup>T</sup>	5,324	0	63	44	107	2.01	0	0
Nadia	3,927	2	74	53	129	3.28	0	0
North 24 Parganas	4,094	20	18	51	89	2.17	0	0
Purulia <sup>T</sup>	6,259	43	373	381	797	12.73	-4	13
South 24 Parganas <sup>T</sup>	9,960	1,014	889	501	2,404	24.14	12	0
Uttar Dinajpur	3,140	0	2	174	176	5.61	0	0
<b>Total</b>	<b>88,752</b>	<b>2,987</b>	<b>4,644</b>	<b>5,363</b>	<b>12,994</b>	<b>14.64</b>	<b>24</b>	<b>29</b>

\* Change compared to 2005 assessment (revised).

### 7.29.6 Altitude Zone wise Forest Cover

Forest cover of the State in different altitude zones is given in Table 7.29.4.

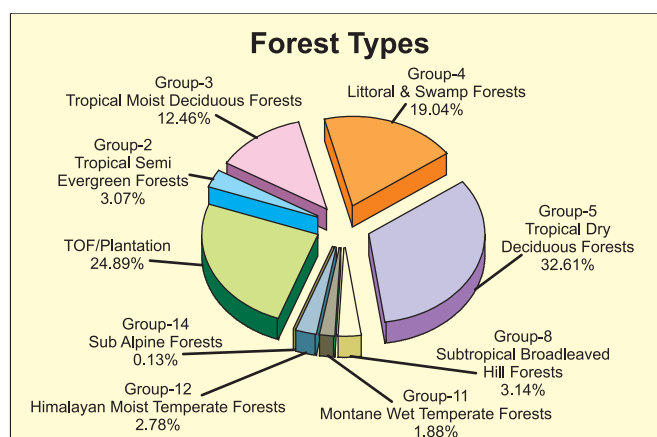
**Table 7.29.4: Altitude zone wise forest cover** (area in km<sup>2</sup>)

Altitude Zone	VDF	MDF	OF	Total
0-500m	2,335	4,098	4,650	11,083
500-1000m	148	279	257	684
1000-2000m	275	215	409	899
2000-3000m	200	47	44	291
>3000m	29	5	3	37
<b>Total</b>	<b>2,987</b>	<b>4,644</b>	<b>5,363</b>	<b>12,994</b>

(based on SRTM Digital Elevation Model)

### 7.29.7 Forest Cover in different Forest Types

As per Champion & Seth Classification System (1968), the State has 31 forest types which belong to the 8 forest type groups viz Tropical Semi Evergreen, Tropical Moist Deciduous, Littoral & Swamp, Tropical Dry Deciduous, Subtropical Broadleaved Hill, Montane Wet Temperate, Himalayan Moist Temperate and Sub Alpine Forests. Distribution of forest cover in different forest type groups found in the State is given in the pie diagram.



### 7.29.8 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 2,458 km<sup>2</sup> which is 2.77% of the

geographical area of the State. Seven districts (Bankura, Darjeeling, Jalpaiguri, Maldah, Medinipur, Murshidabad and Purulia) of the State have been inventoried. The forest and tree cover of the State is presented in the Table 7.29.5.

**Table 7.29.5: Forest & tree cover** (area in km<sup>2</sup>)

Category	Area	% of Geographical area
Tree Cover	2,458	2.77
Forest Cover	12,994	14.64
<b>Forest &amp; Tree Cover</b>	<b>15,452</b>	<b>17.41</b>