

## 9.5 CHHATTISGARH

### 9.5.1 Introduction

Chhattisgarh lies between the latitude of 17°47' and 24°06' N and the longitude of 80°15' and 84°24' E. The geographical area of the state is 135,191 km<sup>2</sup> which constitutes 4.1% of land area of the country. The state is rich in forest and mineral resources. The state can be divided into three agro-climatic zones, viz. the Chhattisgarh Plains (11 districts), the Northern Hills of Chhattisgarh (2 districts) and the Bastar Plateau (3 districts). The annual rainfall varies from 1,100 mm to 1,700

mm, and the temperature ranges between 11°C to 47°C. Land use pattern of the state is given in Table 9.5.1.

The total population of the state is 25.54 million (*Census 2011*) which constitutes 2.11% of the country's population. The rural and the urban population of the state is 76.76% and 23.24% respectively. The population density is 189 persons per km<sup>2</sup>. The livestock population is 14.42 million (*Livestock Census 2007*).

**Table 9.5.1: Land Use Pattern**

Land Use	Area in '000 ha	Percentage
Total geographical area	13,519	
Reporting area for land utilization	13,790	100.00
Forests	6,349	46.04
Not available for land cultivation	1004	7.28
Permanent pastures and other grazing lands	855	6.20
Land under misc. tree crops and groves	1	0.01
Culturable wasteland	347	2.52
Fallow lands other than current fallows	258	1.87
Current fallows	265	1.92
Net area sown	4,710	34.16

Source: *Land Use Statistics, Ministry of Agriculture, GOI, 2008-09*

### 9.5.2 Recorded Forest Area

The recorded forest area in the state is 59,772 km<sup>2</sup> which is 44.21% of its geographical area. Reserved, Protected and Unclassed Forests constitute 43.13%, 40.21% and 16.65% of the total forest area respectively.

### 9.5.3 Protected Areas

The state has three National Parks and eleven Wildlife Sanctuaries covering an area of 0.29

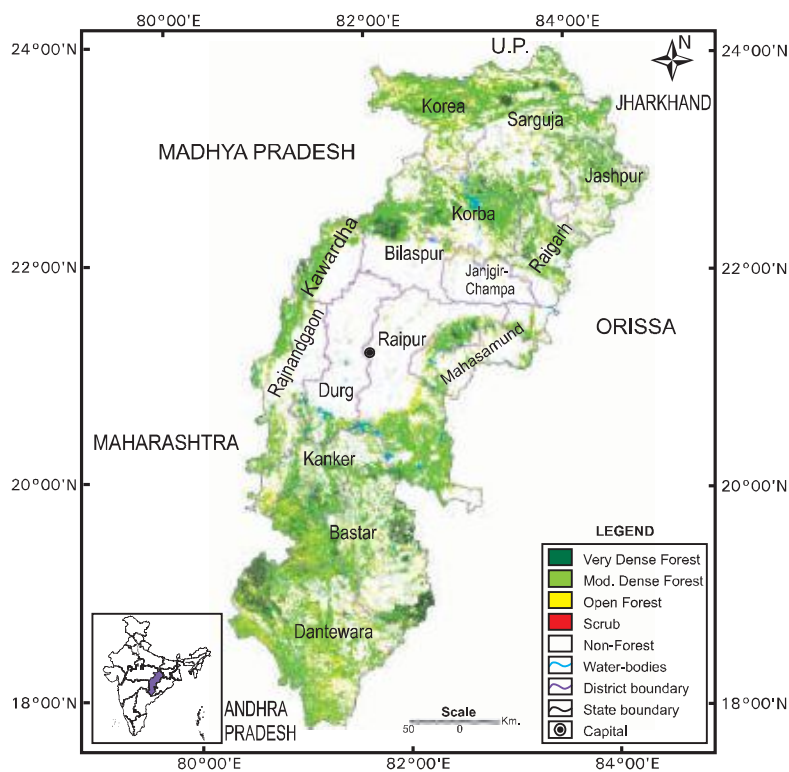
million ha and 0.36 million ha respectively. Thus, a total of 0.65 million ha area constituting 4.79% of the geographical area of the state is under protected area network.

### 9.5.4 Forest Cover

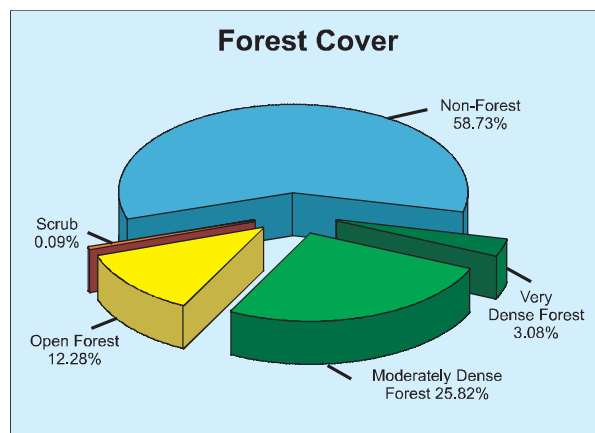
The forest cover in the state, based on interpretation of satellite data of Oct 2008-Jan 2009, is 55,674 km<sup>2</sup> which is 41.18% of the state's geographical area. In terms of forest canopy density classes, the state has 4,163

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km<sup>2</sup> of very dense forests, 34,911 km<sup>2</sup> of moderately dense forests and 16,600 km<sup>2</sup> of open forests. The forest cover of the state is shown in Fig.9.5



**Fig 9.5 Forest cover map of Chhattisgarh**



## Forest and Tree Resources in States and Union Territories

District-wise forest cover in different canopy density classes along with the changes

compared to 2009 assessment is given in Table 9.5.2.

**Table 9.5.2 District-wise Forest Cover** (Area in km<sup>2</sup>)

District	Geographical Area	2011 Assessment				Percent of GA	Change*	Scrub
		Very Dense Forest	Mod. Dense Forest	Open Forest	Total			
Bastar <sup>T</sup>	14,974	1,349	4,333	2,329	8,011	53.50	0	11
Bilaspur <sup>T</sup>	8,270	338	1,623	533	2,494	30.16	0	6
Dantewara <sup>T</sup>	17,634	1,082	6,167	4,079	11,328	64.24	0	22
Durg <sup>T</sup>	8,549	44	521	202	767	8.97	0	4
Janjgir-Champa	3,852	4	26	125	155	4.02	0	2
Jashpur <sup>T</sup>	5,838	111	1,485	568	2,164	37.07	0	11
Kanker <sup>T</sup>	6,506	215	2,044	835	3,094	47.56	0	2
Kawardha	4,223	70	1,126	389	1,585	37.53	0	4
Korba	6,599	203	2,306	840	3,349	50.75	0	6
Koriya	6,604	79	2,605	1,423	4,107	62.19	0	3
Mahasamund	4,789	4	534	422	960	20.05	-1	8
Raigarh <sup>T</sup>	7,086	126	1,697	723	2,546	35.93	-2	13
Raipur & Dhamtari	16,468	189	3,837	1,435	5,461	33.16	0	7
Rajnandgaon <sup>T</sup>	8,068	29	1,771	720	2,520	31.23	-1	4
Sarguja <sup>T</sup>	15,731	320	4,836	1,977	7,133	45.34	0	16
<b>Grand Total</b>	<b>135,191</b>	<b>4,163</b>	<b>34,911</b>	<b>16,600</b>	<b>55,674</b>	<b>41.18</b>	<b>-4</b>	<b>119</b>

\* Change figure are based on comparison of 2011 assessment with that of 2009 after incorporating interpretational changes

Comparison of the current forest cover assessment with the previous assessment (satellite data of Oct 08-Jan 09) shows a marginal loss of 4 km<sup>2</sup> of forest cover.

### 9.5.5 Forest Cover Change

Although there is an actual change of 4 km<sup>2</sup> as detected during 2011 assessment, there is a

net decrease of 192 km<sup>2</sup> in the forest cover from the reported area in ISFR 2009. This has occurred due to refinement of interpretational methodology on the one hand and availability of satellite data of appropriate season with improved quality as compared to previous years. A quantitative account of the class-wise change is given in the *forest cover change matrix* in Table 9.5.3.

**Table 9.5.3: Forest Cover Change Matrix** (Area in km<sup>2</sup>)

2009 Assessment	2011 Assessment					Total 2009
	VDF	MDF	OF	Scrub	NF	
Very Dense Forest	4,163	0	0	0	0	<b>4,163</b>
Moderately Dense Forest	0	34,911	0	0	0	<b>34,911</b>
Open Forest	0	0	16,600	0	4	<b>16,604</b>
Scrub	0	0	0	119	0	<b>119</b>
Non-Forest	0	0	0	0	79,394	<b>79,394</b>
<b>Total 2011</b>	<b>4,163</b>	<b>34,911</b>	<b>16,600</b>	<b>119</b>	<b>79,398</b>	<b>135,191</b>
Change	0	0	-4	0	4	

The change matrix given in Table 9.5.3 reveals that there has been a decrease of 4 km<sup>2</sup> in open forest whereas no change in very dense forest and moderately dense forest has been observed.

### 9.5.6 Altitude Zone-wise Forest Cover

Forest cover of the state in different altitude zones is given in Table 9.5.4.

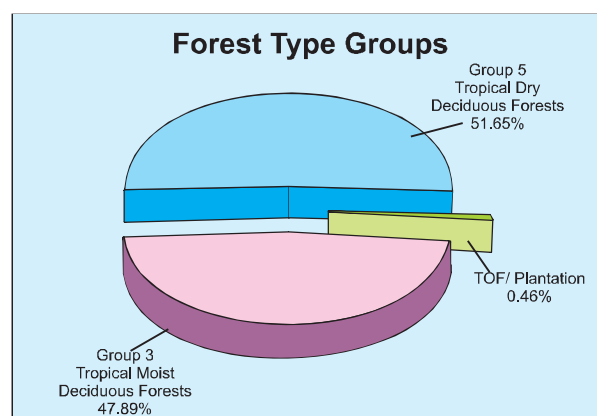
**Table 9.5.4: Altitude Zone-wise Forest Cover** (Area in km<sup>2</sup>)

Altitude Zone	VDF	MDF	OF	Total
0-500m	1,854	16,845	10,171	<b>28,870</b>
500-1000m	2,297	17,635	6,197	<b>26,129</b>
1000-2000m	12	431	232	<b>675</b>
<b>Total</b>	<b>4,163</b>	<b>34,911</b>	<b>16,600</b>	<b>55,674</b>

(Based on SRTM, Digital Elevation Model)

### 9.5.7 Forest Cover in Different Forest Types

As per Champion & Seth Classification, the state has ten forest types which belong to two forest type groups, viz. Tropical Moist Deciduous and Tropical Dry Deciduous Forests distribution of forest cover in different forest type groups found in the state on the basis of forest cover assessment is given in the pie diagram.



### 9.5.8 Tree Cover

Tree cover of the state has been estimated using TOF inventory data collected over a period of six years, i.e. 2004-10. The estimated tree cover in the state is 3,866 km<sup>2</sup> which is

2.86% of the geographical area of the state. Six districts of the state (Bilaspur, Durg, Jashpur, Kawardha, Kanker and Rajnandgaon) have been inventoried. The forest and tree cover of the state is presented in Table 9.5.5.

**Table 9.5.5: Forest and Tree Cover** (Area in km<sup>2</sup>)

Category	Area	% of Geographical Area
Tree Cover	3,866	2.86
Forest Cover	55,674	41.18
<b>Forest &amp; Tree Cover</b>	<b>59,540</b>	<b>44.04</b>

### 9.5.9 Growing Stock

The growing stock in the recorded forest area has been estimated on the basis of the current forest cover map, forest type map and forest

inventory data. For trees outside forests (TOF), the same has been estimated using TOF inventory data. The same has been presented in Table 9.5.6.

**Table 9.5.6: Growing Stock** (million cum)

Forest	TOF	Total
334.381	70.069	404.450

### 9.5.10 Bamboo Resources

The extent of bamboo bearing area in the forests of the state is 11,368 km<sup>2</sup>. Density-wise

details, number of culms by soundness and equivalent green weight are given in the following tables:

**Table 9.5.7: Bamboo bearing area by density in recorded forest area** (Area in km<sup>2</sup>)

Recorded Forest Area	Pure bamboo	Dense bamboo	Scattered bamboo	Clumps hacked	Bamboo regeneration	No bamboo
59,772	54	3,046	4,577	1,496	2,195	48,404

**Table 9.5.8: Estimated number of culms and equivalent green weight**

Number of culms (in millions)				Equivalent Green Weight (in 000' tonnes)		
Green	Dry	Decayed	Total	Green	Dry	Total
458	123	20	601	1,863	904	2,767