

## 9.13 KARNATAKA

### 9.13.1 Introduction

Karnataka, one of the southern peninsular states of the country, has a geographical area of 191,791 km<sup>2</sup> constituting 5.83% of the total area of the country. It lies between the latitudes of 11°30' to 18°25' N and the longitudes of 74°10' to 78°35' E. It has a coastline of approximately 400 kms along the Arabian Sea. The state can be divided into two distinct physiographic regions, viz. the 'Maland' or hilly region comprising of Western Ghats and the 'Maidan' or the plain region comprising the inland plateau of varying height. Land use pattern of the state is given in

Table 9.13.1. Average summer and winter temperature varies from 26°C to 35°C and 14°C to 25°C respectively. The annual rainfall in the state varies from 2,000 mm - 3,200 mm in the Western Ghats and between 400 mm - 500 mm in the northern and northeastern parts.

The population of the state is 61.13 million (*Census 2011*) which constitutes 5.05% of the country's population. Of this, the rural population is 61.43% and the urban population is 38.57%. The population density is 319 persons per km<sup>2</sup>. The livestock population is 30.86 million (*Livestock Census 2007*).

**Table 9.13.1: Land Use Pattern**

Land Use	Area in '000 ha	Percentage
Total geographical area	19,179	
Reporting area for land utilization	19,051	100.00
Forests	3,072	16.13
Not available for cultivation	2,163	11.35
Permanent pastures and other grazing lands	923	4.85
Land under misc. tree crops and groves	290	1.52
Culturable wasteland	413	2.17
Fallow lands other than current fallows	516	2.71
Current fallows	1,500	7.87
Net area sown	10,174	53.41

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

### 9.13.2 Recorded Forest Area

The recorded forest area of the state is 38,284 km<sup>2</sup> which is 19.96% of its geographical area. The Reserved Forests constitute 74.94%, Protected Forests 10.27%, and Unclassed Forests 14.79%.

### 9.13.3 Protected Area

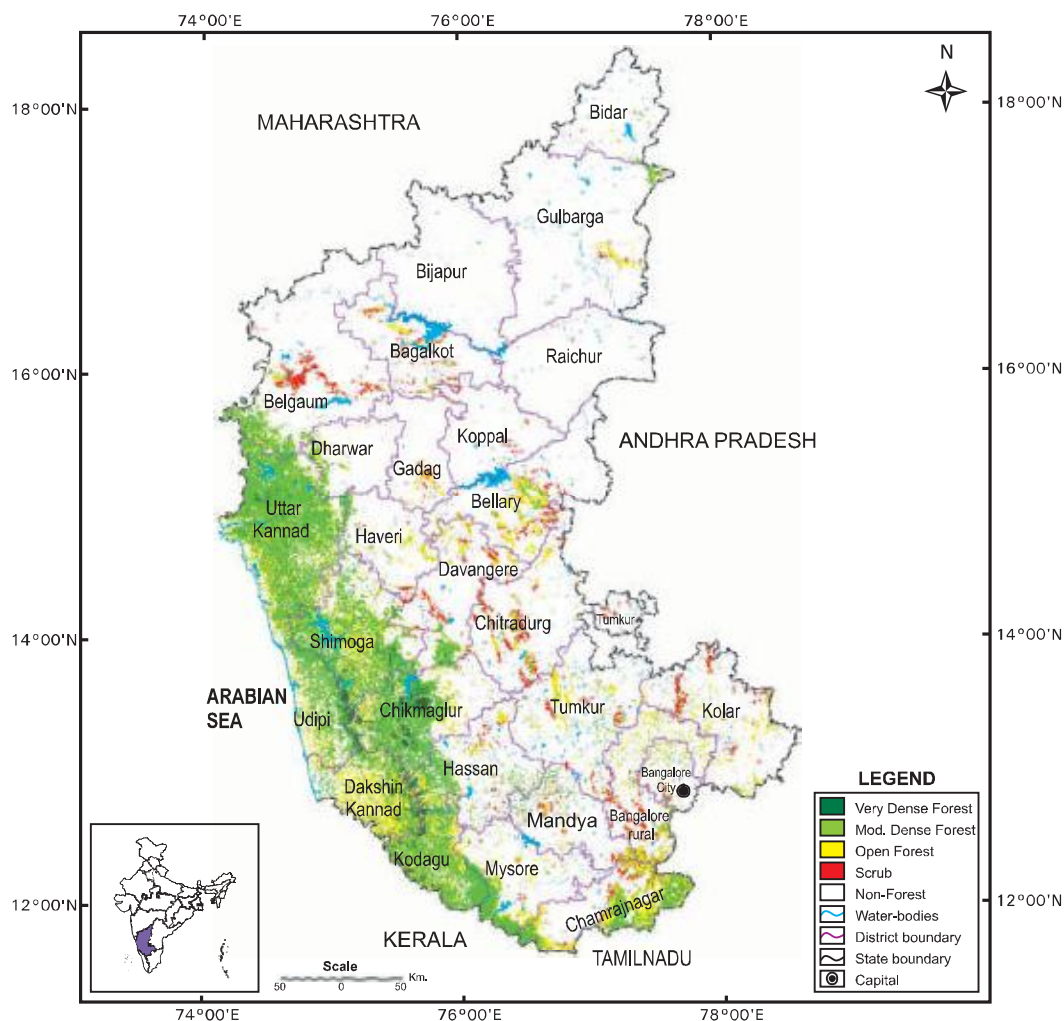
Karnataka has 5 National Parks and 21 Wildlife Sanctuaries covering an area of 2472 km<sup>2</sup> and 3,879 km<sup>2</sup> respectively. Thus a total of 6,351 km<sup>2</sup> area constituting 3.31% of the state's geographical area is under protected area network. Karnataka has two Tiger Reserves

namely, Bandipur Nagarhole (extension) and Bhadra, covering an area of 1,366 km<sup>2</sup>. A part of the famous Nilgiri Biosphere Reserve (area 5,520 km<sup>2</sup>) also lies in the state.

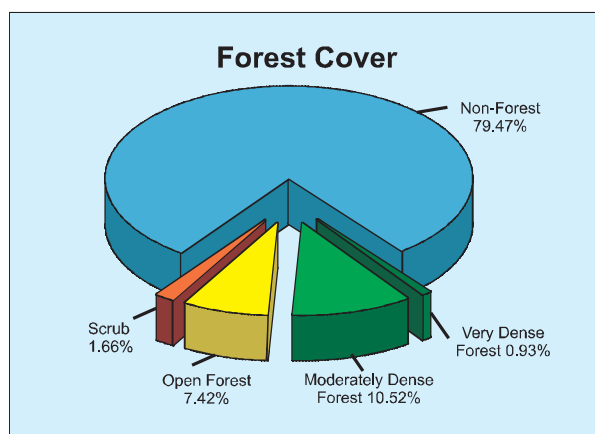
## 9.13.4 Forest Cover

The forest cover in the state, based on interpretation of satellite data of October 2008

February 2009, is 36,194 km<sup>2</sup> which is 18.87% of the state's geographical area. In terms of forest canopy density classes, the state has 1,777 km<sup>2</sup> area under very dense forest, 20,179 km<sup>2</sup> area under moderately dense forest and 14,238 km<sup>2</sup> area under open forest. The forest cover of the state is shown in Fig.9.13.



**Fig. 9.13 Forest cover map of Karnataka**



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

compared to 2009 Assessment and scrub are given in Table 9.13.2

**Table 9.13.2: 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			
Bagalkot	6,575	0	11	189	200	3.04	0	233
Bengaluru Rural	5,815	6	133	673	812	13.96	2	253
Bengaluru Urban	2,190	0	39	111	150	6.85	1	30
Belgaum <sup>H</sup>	13,415	17	757	320	1,094	8.16	2	465
Bellary	8,450	0	110	662	772	9.14	0	252
Bidar	5,448	0	18	36	54	0.99	0	12
Bijapur	10,494	0	0	12	12	0.11	0	0
Chamrajnagar	5,101	45	1,043	1,548	2,636	51.68	0	179
Chikmagalur <sup>TH</sup>	7,201	587	2,428	666	3,681	51.12	0	17
Chitradurg	8,440	0	56	362	418	4.95	0	435
Dakshin Kannad <sup>TH</sup>	4,560	253	1,009	1,598	2,860	62.72	0	0
Davangere	5,924	4	339	399	742	12.53	0	269
Dharwar	4,260	0	232	153	385	9.04	2	5
Gadag	4,656	0	0	122	122	2.62	-1	64
Gulbarga	16,224	0	87	209	296	1.82	0	46
Hassan	6,814	67	752	511	1,330	19.52	0	91
Haveri	4,823	0	154	245	399	8.27	0	53
Kodagu <sup>TH</sup>	4,102	246	2,142	951	3,339	81.40	0	0
Kolar	8,223	0	59	450	509	6.19	1	283
Koppal	7,189	0	1	13	14	0.19	0	56
Mandya	4,961	1	98	209	308	6.21	0	135

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District	Geographical Area	2011 Assessment				Percent of GA	Change	Scrub
		Very Dense Forest	Mod. Dense Forest	Open Forest	Total			
Mysore <sup>T</sup>	6,854	4	648	417	1,069	15.60	0	38
Raichur	6,827	0	2	22	24	0.35	-1	16
Shimoga <sup>H</sup>	8,477	205	2,808	1,394	4,407	51.99	-1	23
Tumkur	10,597	0	62	490	552	5.21	0	219
Udipi <sup>T</sup>	3,880	158	1,415	617	2,190	56.44	0	0
Uttar Kannad <sup>H</sup>	10,291	184	5,776	1,859	7,819	75.98	-1	1
<b>Grand Total</b>	<b>191,791</b>	<b>1,777</b>	<b>20,179</b>	<b>14,238</b>	<b>36,194</b>	<b>18.87</b>	<b>4</b>	<b>3,175</b>

Comparison of the current forest cover assessment with the previous assessment shows a gain of 4 km<sup>2</sup> of forest cover.

**Table 9.13.3: Forest Cover Change Matrix** (Area in km<sup>2</sup>)

2009 Assessment	2011 Assessment					Total 2009
	VDF	MDF	OF	Scrub	NF	
Very Dense Forest	1,777	0	0	0	0	<b>1,777</b>
Moderately Dense Forest	0	20,178	0	0	3	<b>20,181</b>
Open Forest	0	0	14,220	2	10	<b>14,232</b>
Scrub	0	0	3	3,172	1	<b>3,176</b>
Non-Forest	0	1	15	1	152,408	<b>152,425</b>
<b>Total 2011</b>	<b>1,777</b>	<b>20,179</b>	<b>14,238</b>	<b>3,175</b>	<b>152,422</b>	<b>191,791</b>
Net Change	0	-2	6	-1	-3	

The change matrix, given in Table 9.13.3 reveals that there has been an increase of 6 km<sup>2</sup> in open forest and a decrease of 2 km<sup>2</sup> in the moderately dense forest.

### 9.13.5 Altitude Zone-wise Forest Cover

Forest cover of the state in different altitude zones is given in Table 9.13.4.

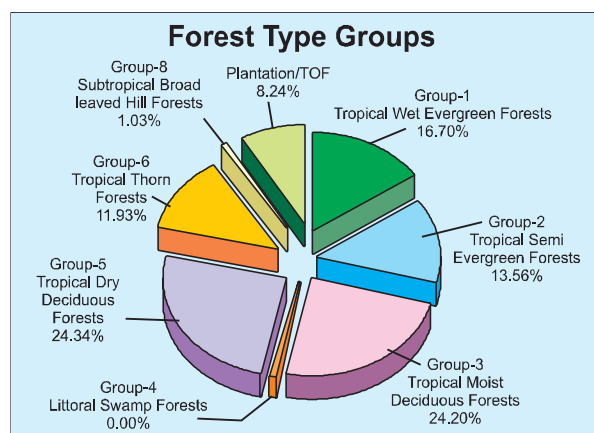
**Table 9.13.4: Altitude Zone-wise Forest Cover** (Area in km<sup>2</sup>)

Altitude Zone	VDF	MDF	OF	Total
0-500m	450	5,196	3,795	<b>9,441</b>
500-1000m	1,108	13,236	9,729	<b>24,073</b>
1000-2000m	219	1,747	714	<b>2,680</b>
<b>Total</b>	<b>1,777</b>	<b>20,179</b>	<b>14,238</b>	<b>36,194</b>

(Based on SRTM, Digital Elevation Model)

### 9.13.6 Forest Cover in Different Forest Types

The state has 19 different forest types as per Champion & Seth's Classification belonging to seven forests type groups, viz. Tropical Wet Evergreen, Tropical Semi Evergreen, Tropical Moist Deciduous, Littoral & Swamp, Tropical Dry Deciduous, Tropical Thorn and Subtropical Broad-leaved Hill Forests. Percentage-wise 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.



### 9.13.7 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 5,733 km<sup>2</sup> which is 2.99% of the geographical area of the state.

Nine districts of the state (Bagalkot, Bengaluru Rural, Bidar, Chamrajnagar, Hassan, Koppal, Mysore, Raichur and Tumkur) have been inventoried. The forest and tree cover of the state is presented in Table 9.13.5.

**Table 9.13.5: Forest and Tree Cover**

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

Category	Area	% of Geographical Area
Tree Cover	5,733	2.99
Forest Cover	36,194	18.87
<b>Forest &amp; Tree Cover</b>	<b>41,927</b>	<b>21.86</b>

### 9.13.8 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. It is presented in the Table 9.13.6.

**Table 9.13.6: Growing Stock**

(million cum)

Forest	TOF	Total
315.156	101.733	416.889

### 9.13.9 Bamboo

The extent of bamboo bearing area in the forests of the state is 8,186 km<sup>2</sup>. Density-wise

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

**Table 9.13.7: 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
38,284	0	1,925	4,390	297	1,574	30,098

**Table 9.13.8: Estimated number of bamboo culms and equivalent green weight**

Number of culms (in millions)				Equivalent Green Weight (in 000' tonnes)		
Green	Dry	Decayed	Total	Green	Dry	Total
310	97	10	417	10436	4724	15160