



## Karnataka

### 9.13.1 Introduction

Karnataka has a geographical area of 1,91,791 sq km which is 5.83 % of the geographical area of the country. The state can be divided into two distinct physiographic regions viz. the 'Malnad' or hilly region comprising of Western Ghats and 'Maidan' or plane region comprising the inland plateau of varying heights. Karnataka has a sub humid to humid tropical climate. The average annual rainfall varies from about 2,000 mm to about 3,200 mm and the average annual temperature ranges between 25°C to 35°C. Many Rivers including Cauvery and Krishna drain the state. The state has 30 districts, among which 5 are tribal and 6 are hill districts. As per the 2011 census, Karnataka has a population of 61.13 million which is 5.05 percent of India's population. The rural and urban population constitute 61.43% and 38.57% respectively. The population density of the state is 319 per sq km. The 19<sup>th</sup> Livestock census 2012 has reported a total livestock population of 27.70 million.

Table 9.13.1 Land Use Pattern

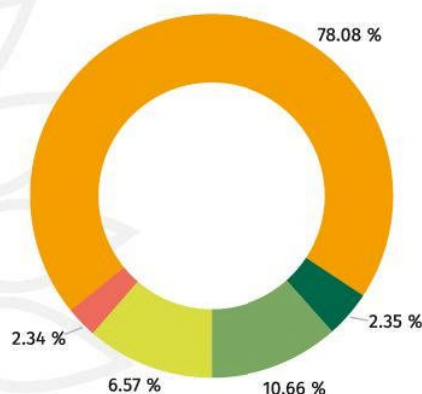
Land Use Types	Area (in 000' ha)	Percentage
Total Geographic Area	19,179	
Reporting area for land utilization	19,050	100
Forests	3,073	16.13
Not available for land cultivation	2,230	11.71
Permanent pastures and other grazing lands	906	4.76
Land under misc. tree crops and groves	281	1.47
Culturable wasteland	411	2.16
Fallow land other than current fallows	525	2.76
Current fallows	1,700	8.92
Net area sown	9,923	52.09

Source: Land Use Statistics, Ministry of Agriculture, GOI, 2013-14.

### 9.13.2

#### Forest Cover

Based on interpretation of satellite data pertaining to Oct-Dec 2015, the forest cover in the State is 37,550 sq km which is 19.58% of the State's geographical area. In terms of forest canopy density classes, the state has 4,502 sq km under very dense forest, 20,444 sq km under moderately dense forest and 12,604 sq km under open forest.



**Forest cover  
of Karnataka**

Pie Chart  
showing forest  
cover of  
Karnataka

■ Non Forest
 ■ Scrub
 ■ Open Forest
 ■ Mod. Dense Forest
 ■ Very Dense Forest

### 9.13.3

## Forest Cover within and outside Recorded Forest Area

The State has reported a recorded forest area of 38,284 sq km which constitutes 19.96% of the State's Geographic area. The Reserved, Protected and Unclassed Forests are 74.94%, 10.27% and 14.79% respectively of the recorded forest area. However as the digitized boundary of recorded forest area from the State covers 31,037sq km, the analysis of forest cover within and outside this area is depicted below.

**Table 9.13.2 Forest Cover within and outside Recorded Forest Area**

<b>Forest Cover within Recorded Forest Area (Area in sq km)</b>	
Very Dense Forest (VDF)	3,645
Moderately Dense Forest (MDF)	12,686
Open Forest (OF)	6,053
<b>Total</b>	<b>22,384</b>
<b>Forest Cover outside Recorded Forest Area</b>	
Very Dense Forest	857
Moderately Dense Forest	7,758
Open Forest	6,551
<b>Total</b>	<b>15,166</b>
<b>Total Forest Cover</b>	<b>37,550</b>
<b>Tree Cover</b>	<b>5,713</b>
<b>Total Forest &amp; Tree Cover</b>	<b>43,263</b>
Of State's Geographical Area	22.56%
Of India's Forest & Tree Cover	5.39%
Per capita Forest & Tree Cover	0.07 ha

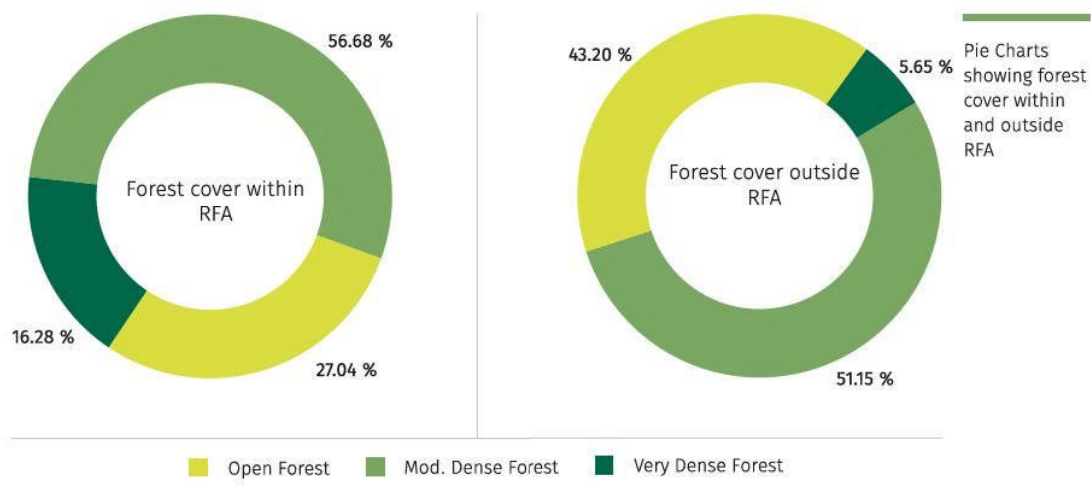


Table 9.13.3 Altitude-wise Forest Cover (Area in sq km)

Altitude Zone (mts.)	Geographical Area	VDF	MDF	OF	Total
0-500	41,511	1,441	5,385	2,782	9,608
500-1000	1,46,593	2,603	13,352	9,287	25,242
1000-2000	3687	458	1,707	535	2,700
<b>Total</b>	<b>1,91,791</b>	<b>4,502</b>	<b>20,444</b>	<b>12,604</b>	<b>37,550</b>

(Based on SRTM, Digital Elevation Model)

Table 9.13.4 Forest Cover in different Patch Size Classes

S.No.	Patch Size Range (sq km)	No. of Patches	Area (sq km)	%age
1.	>=0.01 <=1.0	38,215	3,137	8.35
2.	> 1.0 <= 10	1,011	2,819	7.51
3.	> 10 <= 100	136	3,712	9.89
4.	> 100 <= 500	10	1,770	4.71
5.	> 500 <= 1000	1	947	2.52
6.	> 1000 <= 5000	3	5,529	14.72
7.	> 5000 <= 10000	1	8,389	22.34
8.	> 10000	1	11,246	29.95
	<b>Total</b>	<b>39,378</b>	<b>37,550</b>	<b>100</b>

Table 9.13.5 Growing Stock

	Growing Stock	% Contribution to country
Growing Stock in Recorded Forest Area	327.660 m cum	7.77
Growing Stock in TOF	89.585 m cum	5.59
Potential Production of industrial wood from TOF	3.75 m cum	5.03
Bamboo bearing area within forest area of the state	10,442 sq km	6.66
Total number of culms	1,166 millions	4.15
Total green weight equivalent of culms	16,538 (000' tonnes)	8.76

#### 9.13.4

### Carbon Stock in forest

The total Carbon stock of forests in the State is 475,085 million tonnes (1741,978 million tonnes of CO<sub>2</sub> equivalent) which is 6.71% of total forest carbon of the country.

#### 9.13.5

### Decadal Change in water bodies within Forest

An increase of 127 sq km has been observed in the water body coverage within forest compared to 2005. The graphical and tabular comparison is depicted below.

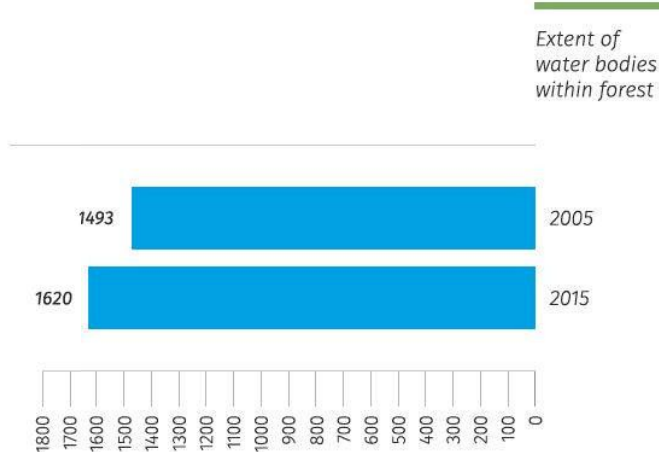


Table 9.13.6 Water bodies within Forest for the years 2005 and 2015

Area / Coverage	2005	2015
Extent of water bodies (sq km) within Forest	1,493	1,620
% of water bodies to Forest Cover	4.12	4.31



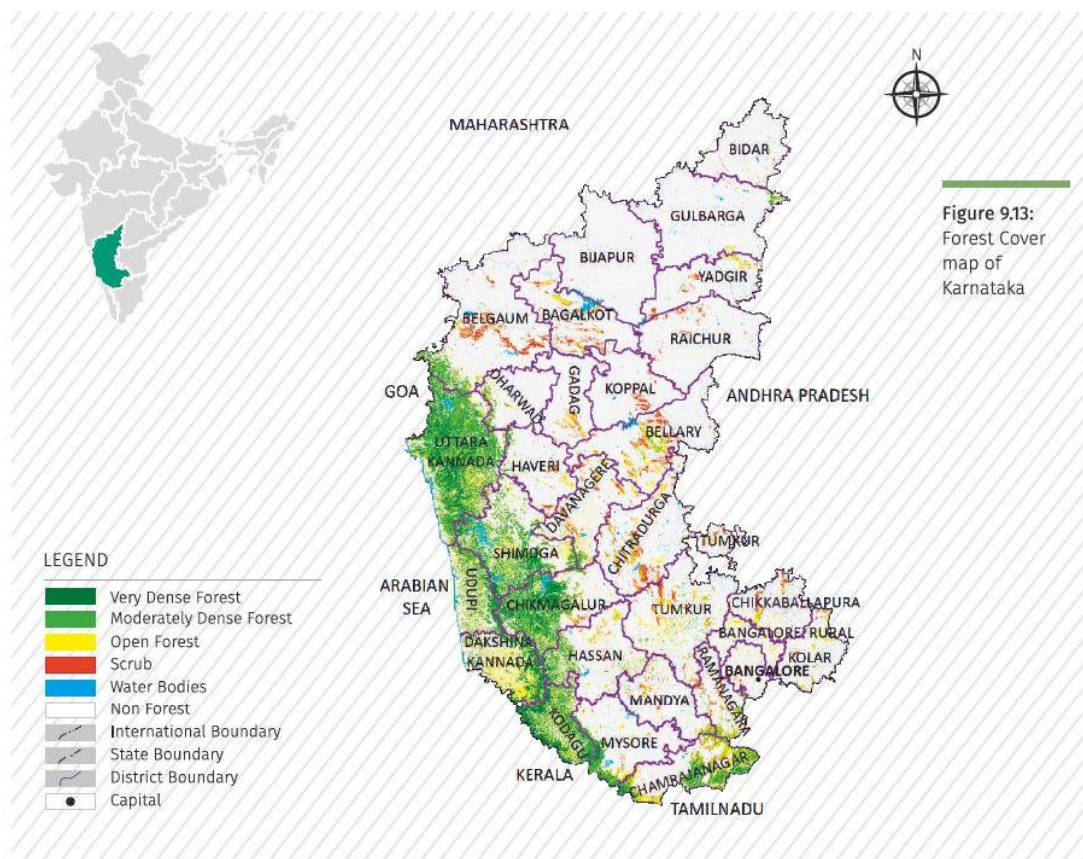


Figure 9.13:  
Forest Cover  
map of  
Karnataka

Table 9.13.7 District- wise Forest Cover

(area in sq km)

District	Geographical Area	2017 Assessment				% of GA	Change *	Scrub
		Very Dense Forest	Mod. Dense Forest	Open Forest	Total			
Bagalkot	6,552	0	19	234	253	3.86	54	399
Bangalore	2,196	0	19	215	234	10.66	117	8
Bangalore Rural	2,298	0	16	99	115	5.00	-136	23
Belgaum <sup>H</sup>	13,433	36	738	360	1,134	8.44	40	688
Bellary	8,461	0	110	624	734	8.68	-53	466
Bidar	5,448	0	22	63	85	1.56	30	37
Bijapur	10,498	0	0	24	24	0.23	11	10
Chamarajanagar	5,648	91	1,524	1,105	2,720	48.16	62	129
Chikkaballapura	4,244	0	17	232	249	5.87	71	181
Chikmagalur <sup>TH</sup>	7,202	902	2,530	504	3,936	54.65	264	74
Chitradurga	8,436	0	51	503	554	6.57	53	595
Dakshina Kannada <sup>TM</sup>	4,861	558	1,105	1,262	2,925	60.17	-74	3

District	Geographical Area	2017 Assessment				% of GA	Change *	Scrub
		Very Dense Forest	Mod. Dense Forest	Open Forest	Total			
Davanagere	5,924	11	167	531	709	11.97	171	320
Dharwad	4,260	0	224	158	382	8.97	-5	3
Gadag	4,657	0	0	143	143	3.07	20	117
Gulbarga	10,954	0	92	100	192	1.75	22	29
Hassan	6,814	148	734	562	1,444	21.19	81	68
Haveri	4,823	0	148	213	361	7.48	-36	103
Kodagu <sup>TH</sup>	4,102	796	1,880	575	3,251	79.25	-102	2
Kolar	3,979	0	55	265	320	8.04	17	68
Koppal	5,570	0	0	30	30	0.54	16	172
Mandya	4,962	0	110	262	372	7.5	50	97
Mysore <sup>I</sup>	6,307	125	586	318	1,029	16.32	-18	30
Raichur	8,442	0	1	43	44	0.52	20	149
Ramanagara	3,516	0	190	421	611	17.38	48	170
Shimoga <sup>H</sup>	8,478	477	2,826	1,017	4,320	50.96	-87	23
Tumkur	10,597	0	65	911	976	9.21	66	387
Udupi <sup>I</sup>	3,582	215	1,336	587	2,138	59.69	86	0
Uttara Kannada <sup>H</sup>	10,277	1,143	5,862	1,113	8,118	78.99	293	2
Yadgir	5,270	0	17	130	147	2.79	20	131
<b>Grand total</b>	<b>1,91,791</b>	<b>4,502</b>	<b>20,444</b>	<b>12,604</b>	<b>37,550</b>	<b>19.58</b>	<b>1,101</b>	<b>4,484</b>

\*Change compared to updated 2015 assessment.

Table 9.13.8 Forest Cover Change Matrix

(area in sq km)

Class	2017 Assessment					Total ISFR 2015 updated
	VDF	MDF	OF	Scrub	NF	
Very Dense Forest	1,422	317	28	0	16	1,783
Moderately Dense Forest	2,713	14,857	1,594	21	992	20,177
Open Forest	367	4171	7,910	508	1,533	14,489
Scrub	0	61	640	2251	230	3,182
Non Forest	0	1,038	2,432	1704	14,6986	1,52,160
<b>Total ISFR 2017</b>	<b>4,502</b>	<b>20,444</b>	<b>12,604</b>	<b>4,484</b>	<b>1,49,757</b>	<b>1,91,791</b>
Net Change	2,719	267	-1,885	1,302	-2,403	

### 9.13.6

## Reasons for change detected in 2017 assessment

The main reason for net increase of 1,101 sq km in forest cover in the State can be attributed to plantation and conservation activities both within and outside the Recorded Forest Areas as well as improvement in interpretation due to better radiometric resolution of the recent satellite data from Resourcesat-2. Large scale increase in commercial plantation of palms outside forest areas, density improvement in scrub forests and expansion of mangrove cover due to conservation and rehabilitation efforts are also the major reasons for the increase observed in the state.