

8.8 GUJARAT

8.8.1 Introduction

Gujarat has an area of 19.60 million ha which constitutes 5.96% of the geographic area of the country. It is situated on the western coast of the country and lies between lat 20°07' to 24°43' N and long 68°10' to 74°29' E. The State comprises of three regions viz. the peninsula, traditionally known as Saurashtra, which is essentially a hilly tract sprinkled with low hills; Kutch on the north-west is barren and contains the famous Rann of Kutch, and the mainland extending from the Rann of Kutch and the Aravalli hills to the river Damanganga is on the whole a level plain of alluvial soil. The plains of Gujarat are watered by four major rivers. The Sabarmati, Mahi, Narmada and Tapi. The average annual rainfall ranges between 800 to 1,000 mm and the mean temperature from 25°C to 27.5°C. Land use pattern is given in Table 8.8a.

The total population of the State is 50.67 million (*Census 2001*). Of this, 62.64% is rural and 37.36% is urban having population density of 258 persons per km². Scheduled Tribes constitute 14.8% of the total population mainly spread over in 8 districts of the State. Total livestock population is 21.66 million (*Livestock Census 2003*). There has been an increase of about 16% in the cattle population over the last census of 1992.

8.8.2 Forest Resources

The recorded forest area is 18,962 km², which constitutes 9.67% of the geographic area of the State. By legal status, Reserved Forests constitute 74.19%, Protected Forest 3.67% and Unclassed Forest 22.14%.

There are four major forest types found in the State viz. Tropical Moist Deciduous, Tropical Dry Deciduous, Tropical Thorn and Littoral and Swamp forests. The forests are mostly distributed in southern part of the State, whereas the middle and eastern parts bear bamboo forests of inferior quality. The main forest formations in the State are of teak, bamboo and mangroves.

8.8.3 Protected Areas

There are 4 National Parks and 21 Wildlife Sanctuaries in the State. The total area under protected area network is 1.7 million ha which constitutes 8.67% of the total geographic area of the State. Gir forests in Saurashtra are abode of world-famous Asiatic lions. Nalsarovar is a wetland of national importance and covers an area of 18,400 ha.

8.8.4 Joint Forest Management

Joint Forest Management in the State began in 1991. There are 1,734 JFM committees managing 0.24 million ha of forest area as on March 2005. The number of JFM committee members is 0.81 million. The total number of families involved in JFM is 0.2 million, of these 144,000 families belong to Scheduled Tribes.

Source: Proceedings of the National Workshop on JFM, MoEF, 2005.

8.8.5 Forest Cover

The forest cover of the State, based on satellite data of October-December 2004, is 14,715 km², which is

Table 8.8a: Land use pattern

Land Use	Area in '000 ha	Percentage
Total geographical area	19,602	
Reporting area for land utilization	18812	100.00
Forests	1865	9.91
Not available for cultivation	3744	19.90
Permanent pastures and other grazing lands	849	4.51
Land under misc. tree crops & groves	4	0.02
Culturable wasteland	1982	10.54
Fallow lands other than current fallows	13	0.07
Current Fallows	911	4.84
Net area sown	9443	50.20

Source: Land Use Statistics, Ministry of Agriculture, GOI, 2005.

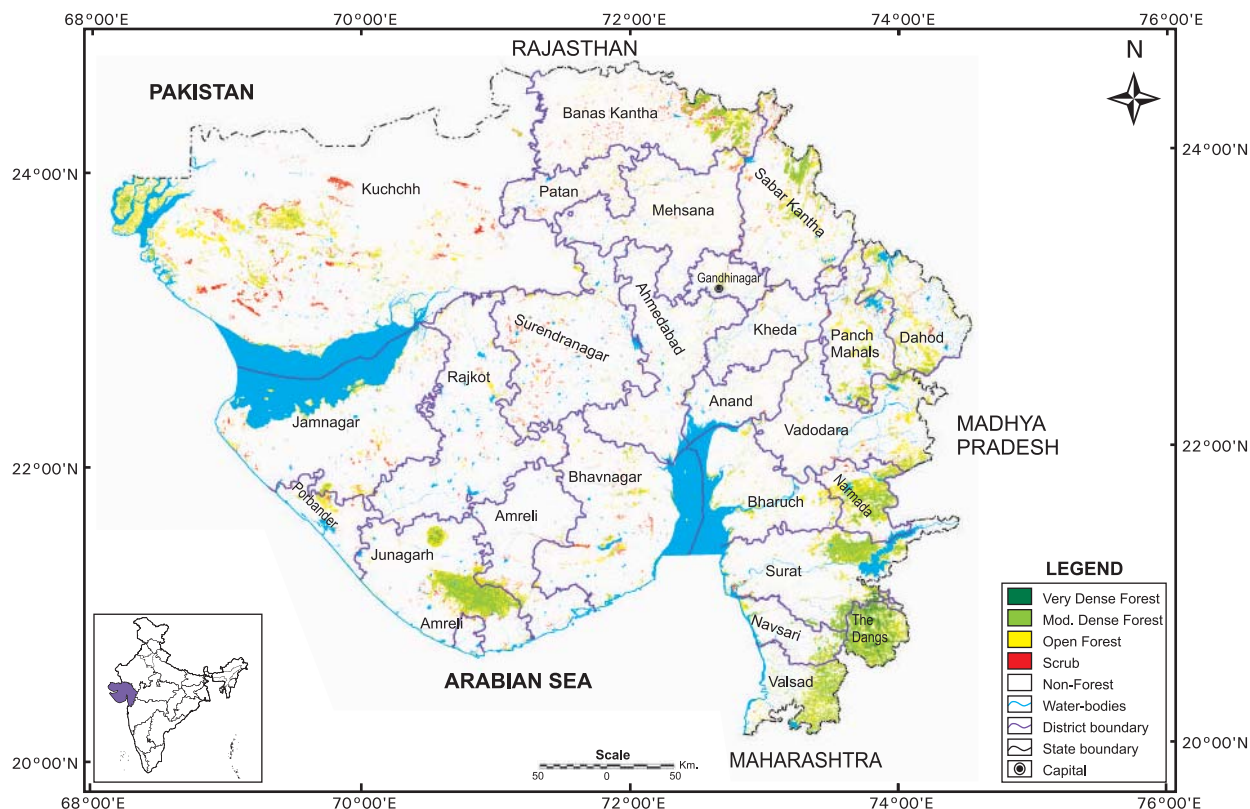


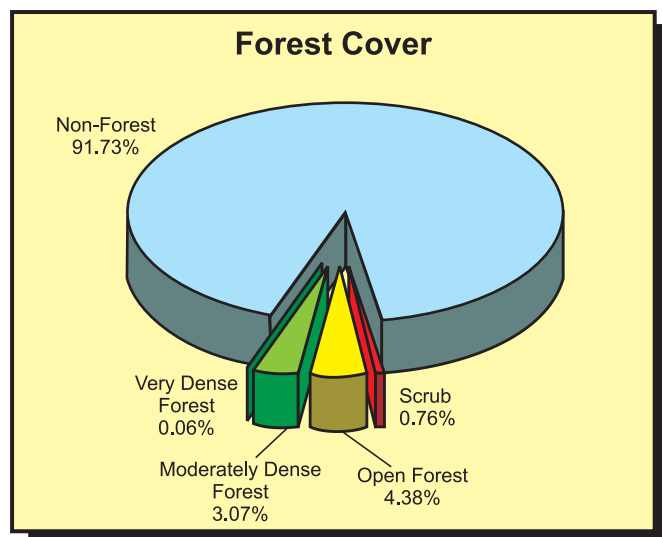
Fig 8.8 : Forest Cover Map of Gujarat

7.51% of the geographic area. Very dense forest is 114 km², moderately dense forest, 6,024 km², and open forest, 8,577 km². The forest cover of the State is shown in Fig.8.8.

A decrease of 99 km² of forest cover has been assessed in the present assessment as compared to the previous assessment (base on satellite data of October-December 2002)

The change matrix, given in Table 8.8b reveals that there has been a decrease of 49 km² in moderately dense forest, and 50 km² in open forest.

The loss in forest cover in many districts of the State has been observed on account of large scale uprooting of *Prosopis juliflora* from private and revenue lands by people as a sequel to the State Government's decision. Some forest cover was also lost due to submergence in the Hasanpur dam in Junagarh district. The gain in forest cover in Kutchchh district has occurred mainly due to re-growth of *Prosopis juliflora*. These observations are based on the field verification by the FSI officials, which have been subsequently corroborated by the State Forest Department.



The district wise details of very dense forest, moderately dense forest, open forest and scrub, along with the changes compared to 2003 assessment, have been provided in Table 8.8c.

Table 8.8b: Forest cover change matrix

(area in km²)

2003 Assessment (Data of Oct.-Dec. 2002)	2005 Assessment (Data of Oct.-Dec. 2004)					Total 2003
	VDF	MDF	OF	Scrub	NF	
Very Dense Forest	114	0	0	0	0	114
Moderately Dense Forest	0	6,020	10	0	43	6,073
Open Forest	0	2	8,526	1	98	8,627
Scrub	0	0	1	1,494	248	1,743
Non-Forest	0	2	40	0	179,423	179,465
Total 2005	114	6,024	8,577	1,495	179,812	196,022
Net Change	0	-49	-50	-248	347	

Table 8.8c: District-wise forest cover

Number of Districts: 25

(area in km²)

District	Geographic area	2005 Assessment				Percent of G.A.	Change	Scrub
		Very dense forest	Mod. dense forest	Open forest	Total			
Ahmedabad	8,707	0	22	122	144	1.65	-17	16
Amreli	6,760	0	66	158	224	3.31	-1	41
Anand	3,214	0	24	35	59	1.84	-2	4
Banas Kantha ^T	9,858	0	370	463	833	8.45	-9	189
Bharuch ^T	6,458	0	89	240	329	5.09	-6	7
Bhavnagar	11,155	0	63	223	286	2.56	-39	75
Dahod	4,405	0	181	525	706	16.03	-1	40
Gandhinagar	649	0	9	33	42	6.47	-2	2
Jamnagar	14,125	0	57	324	381	2.70	1	72
Junagarh	8,281	9	920	672	1,601	19.33	-6	34
Kuchchh	45,652	0	400	1,839	2,239	4.90	22	521
Kheda	3,980	0	25	73	98	2.46	-3	19
Mehsana	8,540	0	25	195	220	2.58	-15	54
Narmada	2,580	0	506	494	1,000	38.76	-4	22
Navsari	2,215	0	166	141	307	13.86	-1	1
Panch Mahals ^T	4,461	0	180	385	565	12.67	-5	41
Patan	3,332	0	8	78	86	2.58	-4	28
Porbandar	2,326	0	22	96	118	5.07	1	18
Rajkot	11,203	0	8	139	147	1.31	0	31
Sabar Kantha ^T	7,390	0	343	458	801	10.84	-3	110
Surat ^T	7,657	27	845	467	1,339	17.49	-4	24
Surendranagar	10,489	0	12	160	172	1.64	0	111
The Dangs ^T	1,762	78	995	339	1,412	80.14	0	0
Vadodara ^T	7,794	0	161	460	621	7.97	-3	33
Valsad ^T	3,029	0	527	458	985	32.52	2	2
Total	196,022	114	6,024	8,577	14,715	7.51	-99	1,495

8.8.6 Tree Cover

Tree cover of Gujarat has been estimated following a sampling based approach. A separate exercise was carried out where high resolution satellite data (5.8m) has been used for identification of tree patches for field inventory.

Field inventory has been carried out on 1005 sample plots spread over 7 districts of the State between 2002-06 and the estimated tree cover in the State is 7,621 km².

The forest and tree cover of the State is presented in the Table 8.8d.

Table 8.8d: Forest & tree cover

(area in km²)

Category	Area	% of Geographical Area
Tree Cover	7,621	3.89
Forest Cover	14,715	7.51
Forest & Tree Cover	22,336	11.4