8.28 UTTARAKHAND

8.28.1 Introduction

The State of Uttarakhand situated in the northern part of India, shares an international boundary with China in the north and with Nepal in the east. This nascent State has an area of 5.35 million ha and lies between lat 28°43'N and 31°28' N and long 77°34'E and 81°03'E. The State can be divided into three physiographic zones namely, the Himalayas, the Shiwaliks and the Terrai region. The State has a temperate climate except in the plain areas where the climate is tropical with temperatures ranging from sub-zero to 43°C. The average annual rainfall is 1,550 mm.

The total population of the State is 8.48 million *(Census 2001)* of which rural population is 74.33% and urban 25.67%. The population density is 159 persons per km^2. Population of the Scheduled Tribes in the State is 3%. The livestock population of the State is 4.94 million *(Livestock Census 2003)*.

Land use pattern of the State is given in Table 8.28a.

Of the geographic area (53,483 km^2), about 19% is under permanent snow cover, glaciers and steep slopes where it is not possible to grow trees due to physical limitations.

8.28.2 Forest Resources

The recorded forest area of the State is 34,662 km^2, which constitutes 64.79% of its geographic area. By legal status, Reserved Forests constitute, 71.08 %, Protected Forests 28.51 % and Unclassed Forests 0.41 % of the total forest area.

Major forest types occurring in the State are Tropical Moist Deciduous, Tropical Dry Deciduous, Sub Tropical Pine, Himalayan Moist temperate, Himalayan Dry Temperate, Sub Alpine and Alpine Forests. Forests are largely distributed throughout the State with conifers and sal being the major forest formations.

8.28.3 Protected Areas

The State has 6 National Parks and an equal number of Wildlife Sanctuaries covering an area of 0.71 million ha, which constitutes 13.35% of its geographic area. The famous Corbett Tiger Reserve is located in the State covering an area of 0.13 million ha. Nanda Devi Biosphere Reserve, with an area of 0.59 million ha, is also located in this State.

8.28.4 Joint Forest Management

Joint forest management was initiated in the State in 1992 when it was part of UP. There are 10,107 JFM Committees managing about 0.86 million ha of forest area as on March 2005, which is about 25% of the forest area of the State. About 0.5 million families are involved in this programme, of which around 15,000 families belong to the Scheduled Tribes.

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

8.28.5 Forest Cover

The forest cover of the State, based on satellite data of October-December 2004, is 24,442 km^2, which is 45.70% of the geographic area. Very dense forest is 4,002 km^2,

Table 8.28a: Land use pattern

Land Use	Area in '000 ha	Percentage
Total Geographic Area	5348	
Reporting area for land utilization	5689	100.00
Forests	3468	60.96
Not available for land cultivation	465	8.17
Permanent pastures and other grazing lands	229	4.03
Land under misc. tree crops and groves	252	4.43
Culturable Wastelands	386	6.79
Fallow land other than current fallows	71	1.25
Current fallows	41	0.72
Net area sown	776	13.64

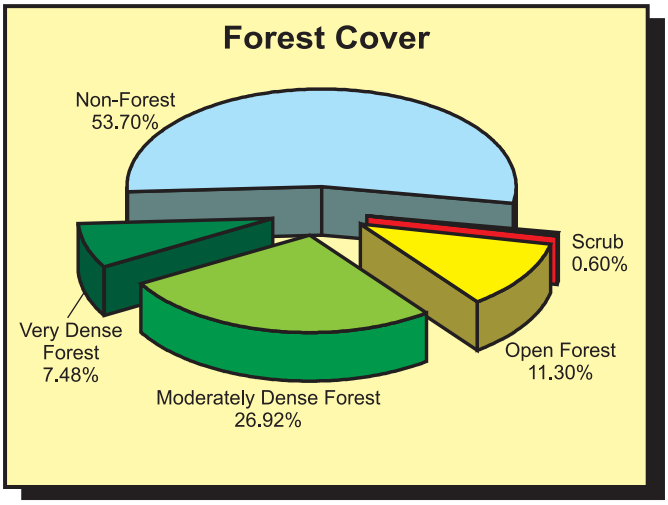
Source: Land Use Statistics, Ministry of Agriculture, GOI,2005

moderately dense forest, 14,396 km^2, and open forest, 6,044 km^2. The forest cover of the State is shown in Fig. 8.28.

A decrease of 18 km^2 of forest cover has been assessed in the present assessment as compared to the previous assessment (based on satellite data of November-December 2002).

The change matrix, given in Table 8.28b reveals that there has been a decrease of 13 km^2 in moderately dense forest and a decrease of 5 km^2 in open forest.

The loss in forest cover in Haridwar district is attributed to the rehabilitation of the Gujjars and the Tehri dam oustees, and also due to the rotational felling of Eucalyptus in the areas of Shyampur and Chiriapur etc. In districts of Nainital and Udham Singh Nagar, the loss is due to rotational felling of Eucalyptus and Poplar plantation by SFD as observed by FSI officials during field verification and also 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 8.28c.

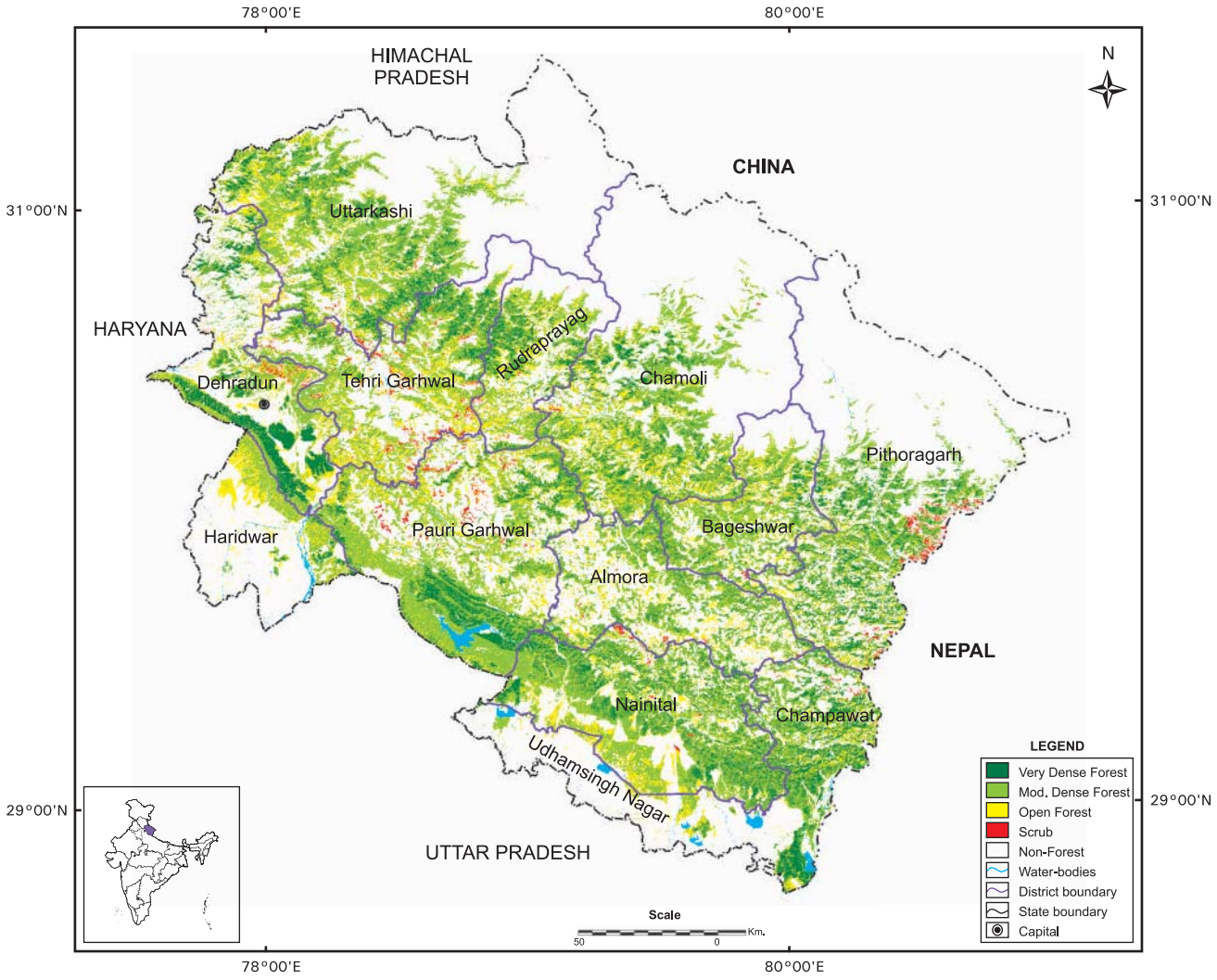


Fig. 8.28 : Forest Cover Map of Uttarakhand

Table 8.28b: Forest cover change matrix

(area in km^2)

2003 Assessment(Data of Nov. - Dec. 2002)	2005 Assessment (Data of Oct. - Dec. 2004)					Total 2003
	VDF	MDF	OF	Scrub	NF	
Very Dense Forest	4,002	0	0	0	0	4,002
Moderately Dense Forest	0	14,396	0	0	13	14,409
Open Forest	0	0	6,041	0	8	6,049
Scrub	0	0	0	320	0	320
Non-Forest	0	0	3	0	28,700	28,703
Total 2005	**4,002**	**14,396**	**6,044**	**320**	**28,721**	**53,483**
Net Change	0	-13	-5	0	18	

Table 8.28c: District-wise forest cover

Number of Districts:13

(area in km^2)

District	Geographic area	2005 Assessment				Percent of G.A.	Change	Scrub
		Very dense forest	Mod. dense forest	Open forest	Total			
Almora^H	3,139	168	969	440	1,577	50.24	0	10
Bageshwar^H	2,246	159	875	346	1,380	61.44	0	4
Chamoli^H	8,030	406	1,558	734	2,698	33.60	0	7
Champawat^H	1,766	327	605	230	1,162	65.80	0	9
Dehradun^H	3,088	487	664	442	1,593	51.59	0	27
Pauri Garhwal^H	5,329	450	2,065	756	3,271	61.38	0	64
Haridwar^H	2,360	29	327	274	630	26.69	-8	0
Nainital^H	4,251	548	1,936	604	3,088	72.64	-3	17
Pithoragarh^H	7,090	470	1,229	378	2,077	29.29	0	69
Rudraprayag^H	1,984	179	605	336	1,120	56.45	0	5
Tehri Garhwal^H	3,642	227	1,255	656	2,138	58.70	0	85
Udhamsingh Nagar^H	2,542	144	246	174	564	22.19	-7	0
Uttarkashi^H	8,016	408	2,062	674	3,144	39.22	0	23
Total	**53,483**	**4,002**	**14,396**	**6,044**	**24,442**	**45.70**	**-18**	**320**

8.28.6 Tree Cover

Tree cover of Uttarakhand 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 397 sample plots spread over 3 districts of the State between 2002-06 and the estimated tree cover in the State is 658 km^2.

The forest and tree cover of the State is presented in the Table 8.28d.

8.28d: Forest and tree cover

(area in km^2)

Category	Area	% of Geographical Area
Tree Cover	658	1.23
Forest Cover	24,442	45.70
Forest & Tree Cover	**25,100**	**46.93**