

9.27 UTTAR PRADESH

9.27.1 Introduction

Uttar Pradesh, the most populous state of the country, has a geographical area of 2,40,928 km² which constitutes 7.3% of the total area of the country. It shares border with nine states as well as international border with Nepal. Uttar Pradesh is situated between 23°52' N - 30°24' N latitude and 77°05'E - 84°38'E longitude. The state can be divided into two physiographic zones namely; the vast Gangetic Plains having highly fertile alluvial soil and the smaller Southern Hill Plateau. Annual rainfall in the state varies from 1,000

mm - 1,200 mm and temperature ranges between 5°C during winter to 45°C in summer.

Population of the state is 199.58 million (*Census 2011*) constituting 16.49% of country's population. Rural and Urban population is 77.72% and 22.28% respectively. Population density is 828 persons per km². The livestock population of the state is 60.27 million (*Livestock Census 2007*).

Land use pattern of the state is given in Table 9.27.1

Table 9.27.1: Land Use Pattern

Land Use	Area in '000 ha	Percentage
Total geographic area	24,093	
Reporting area for land utilization	24,170	100.00
Forests	1,658	6.86
Not available for land cultivation	3,268	13.52
Permanent pastures and other grazing lands	65	0.27
Land under misc. tree crops and groves	374	1.55
Culturable Wasteland	440	1.82
Fallow lands other than current fallows	540	2.23
Current fallows	1,408	5.83
Net area sown	16,417	67.92

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

9.27.2 Recorded Forest Area

The recorded forest area of the state is 16,583 km² which is 6.88% of its geographical area. Reserved Forests constitute 70.31%, Protected Forests 8.56% and Unclassed Forests 21.12%.

9.27.3 Protected Areas

Uttar Pradesh has one National Park and 23 Wildlife Sanctuaries covering 5,712 km² which constitutes 2.37% of the state's geographical area. The oldest Wild Life Sanctuary of the country, the Chandraprabha Wild Life Sanctuary is located in Uttar Pradesh. Uttar

Pradesh has one Tiger Reserve namely, Dudhwa Katerniaghat (extension) which is

also famous for Swamp Deer and Rhinoceros.

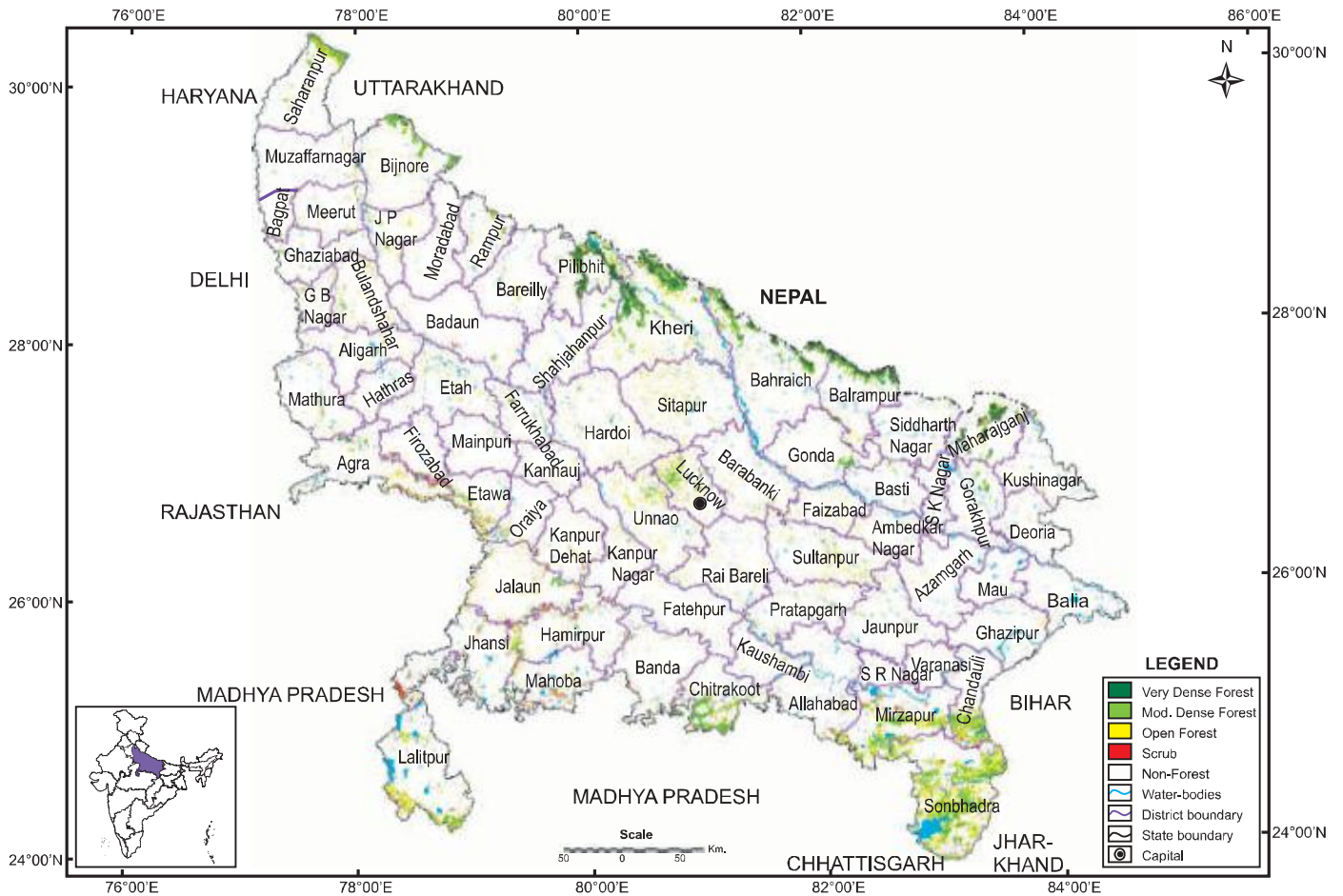
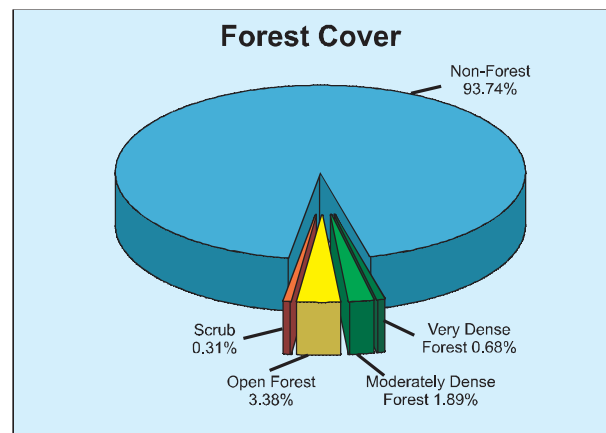


Fig 9.27 Forest cover map of Uttar Pradesh

9.27.4 Forest Cover

The forest cover in the state, based on interpretation of satellite data of October 2008 to January 2009, is 14,338 km² which is 5.95% of the state's geographical area. In terms of forest canopy density classes, the state has 1,626 km² area under very dense forest, 4,559 km² area under moderately dense forest and 8,153 km² area under open forest. The forest cover of the state is shown in Fig. 9.27.



District-wise forest cover in different canopy density classes and scrub are given in Table 9.27.2.

Table 9.27.2: District-wise Forest Cover (Area in km²)

District	Geographical Area	2011 Assessment				Percent of GA	Change	Scrub
		Very Dense Forest	Mod. Dense Forest	Open Forest	Total			
Agra	4,027	0	67	209	276	6.85	0	74
Aligarh	3,650	0	7	59	66	1.81	0	2
Allahabad	5,137	0	27	68	95	1.85	0	23
Ambedkar Nagar	2,337	0	2	32	34	1.45	0	0
Azamgarh	4,234	0	1	26	27	0.64	0	0
Bagpat	1,321	0	5	12	17	1.29	0	0
Bahraich & Shravasti	6,878	290	315	243	848	12.33	0	4
Balia	3,349	0	0	25	25	0.75	0	0
Balrampur	2,981	225	188	116	529	17.75	0	3
Banda	4,532	0	26	77	103	2.27	0	29
Barabanki	4,402	0	4	79	83	1.89	0	2
Bareilly	4,120	0	7	37	44	1.07	0	0
Basti	2,688	0	5	13	18	0.67	0	0
Bijnore	4,561	45	235	142	422	9.25	-1	3
Badaun	5,168	0	12	30	42	0.81	0	8
Bulandshahar	2,910	0	33	82	115	3.95	0	0
Chandauli	2,549	6	194	365	565	22.17	0	11
Chitrakoot	3,092	0	358	203	561	18.14	0	15
Deoria	2,538	0	1	14	15	0.59	0	0
Etah	4,446	0	9	90	99	2.23	0	0
Etawa	2,311	0	44	142	186	8.05	0	42
Faizabad	2,174	0	5	50	55	2.53	0	0
Farrukhabad	2,181	0	13	33	46	2.11	0	0
Fatehpur	4,152	0	7	38	45	1.08	0	14
Firozabad	2,361	0	4	43	47	1.99	0	26
Gautam Budh Nagar	1,442	0	12	23	35	2.43	0	0
Ghaziabad	2,590	0	18	31	49	1.89	0	0
Ghazipur	3,377	0	1	30	31	0.92	0	0
Gonda	4,003	0	60	47	107	2.67	0	0
Gorakhpur	3,321	0	40	24	64	1.93	0	0
Hamirpur	4,282	0	66	108	174	4.06	0	39
Hardoi	5,986	0	7	114	121	2.02	0	0
Hathras	1,840	0	1	22	23	1.25	0	0

Forest and Tree Resources in States and Union Territories

District	Geographical Area	2011 Assessment				Percent of GA	Change	Scrub
		Very Dense Forest	Mod. Dense Forest	Open Forest	Total			
Jyotiba Phule Nagar	2,249	0	24	61	85	3.78	0	0
Jalaun	4,565	0	65	179	244	5.35	0	48
Jaunpur	4,038	0	11	40	51	1.26	0	0
Jhansi	5,024	0	33	167	200	3.98	0	121
Kannauj	2,093	0	0	28	28	1.34	0	0
Kanpur Nagar & Dehat	6,176	0	12	97	109	1.76	0	37
Kaushambi	2,124	0	7	20	27	1.27	0	0
Kheri ^T	7,680	409	475	435	1,319	17.17	-1	1
Kushinagar	2,906	0	3	32	35	1.20	0	0
Lalitpur	5,039	0	128	442	570	11.31	0	41
Lucknow	2,528	0	116	185	301	11.91	0	0
Maharajganj	2,952	239	113	109	461	15.62	0	2
Mahoba	2,884	0	22	73	95	3.29	0	96
Mainpuri	2,760	0	1	13	14	0.51	0	0
Mathura	3,340	0	5	55	60	1.80	0	6
Mau	1,713	0	0	7	7	0.41	0	0
Meerut	2,590	0	34	32	66	2.55	0	0
Mirzapur	4,521	0	323	543	866	19.16	0	44
Moradabad	3,718	0	5	21	26	0.70	0	0
Muzaffarnagar	4,008	0	14	27	41	1.02	0	0
Oraiya	2,015	0	8	61	69	3.42	0	11
Pilibhit	3,499	340	157	200	697	19.92	-1	0
Pratapgarh	3,717	0	25	68	93	2.50	0	2
Rai Bareli	4,609	0	5	93	98	2.13	0	1
Rampur	2,367	4	26	47	77	3.25	0	0
Saharanpur	3,689	0	175	200	375	10.17	0	0
Sant Kabir Nagar	1,646	0	0	2	2	0.12	0	0
Sant Ravidas Nagar	1,015	0	0	1	1	0.10	0	0
Shahjahanpur	4,575	23	63	36	122	2.67	0	0
Siddharth Nagar	2,895	0	9	30	39	1.35	0	0
Sitapur	5,743	0	14	199	213	3.71	0	2
Sonbhadra	6,788	45	870	1,626	2,541	37.43	0	38
Sultanpur	4,436	0	15	162	177	3.99	0	0
Unnao	4,558	0	26	224	250	5.48	0	0
Varanasi	1,528	0	1	11	12	0.79	0	0
Grand Total	240,928	1,626	4,559	8,153	14,338	5.95	-3	745

Table 9.27.3: Forest Cover Change Matrix (Area in km²)

2009 Assessment	2011 Assessment					Total 2009
	VDF	MDF	OF	Scrub	NF	
Very Dense Forest	1,626	0	0	0	0	1,626
Moderately Dense Forest	0	4,558	3	0	2	4,563
Open Forest	0	0	8,149	0	3	8,152
Scrub	0	0	0	745	0	745
Non - Forest	0	1	1	0	225,840	225,842
Total 2011	1,626	4,559	8,153	745	225,845	240,928
Net Change	0	-4	1	0	3	

The change matrix given in Table 9.27.3 reveals that there has been a decrease of 4 km² in moderately dense forest whereas an increase of 1 km² in open forest.

9.27.5 Altitude Zone-wise Forest Cover

Forest cover of the state in different altitude zones is given in Table 9.27.4.

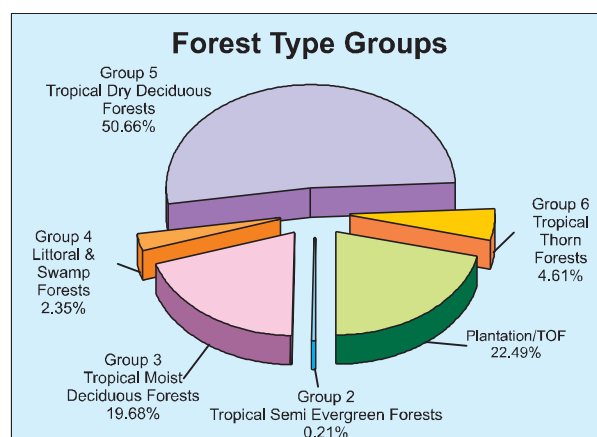
Table 9.27.4: Altitude Zone-wise Forest Cover (Area in km²)

Altitude Zone	VDF	MDF	OF	Total
0-500m	1,625	4,345	7,944	13,914
500-1000m	1	214	209	424
Total	1,626	4,559	8,153	14,338

(Based on SRTM, Digital Elevation Model)

9.27.6 Forest Cover in Different Forest Types

Forest type mapping using satellite data has been undertaken by Forest Survey of India with reference to Champion & Seth Classification. As per this assessment, the state has 27 forest types which belong to five forest type groups, viz. Tropical Semi Evergreen, Tropical Moist Deciduous, Littoral & Swamp, Tropical Dry Deciduous and Tropical Thorn Forests. Percentage-wise distribution of forest cover in different forest type groups found in the state is given in the pie diagram.



9.27.7 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 7,382 km² which is 3.06% of its geographical area. A total of 19 districts of the state have been inventoried. The forest and tree cover of the state is presented in Table 9.27.5.

Table 9.27.5: Forest and Tree Cover (Area in km²)

Category	Area	% of Geographical Area
Tree Cover	7,382	3.06
Forest Cover	14,338	5.95
Forest and Tree Cover	21,720	9.01

9.27.8 Growing Stock

The growing stock in the recorded forest area has been estimated on the basis of 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 9.27.6.

Table 9.27.6: Growing Stock (million cum)

Forest	TOF	Total
123.400	81.683	205.083

9.27.9 Bamboo

The extent of bamboo bearing area in the forests of the state is 1,313 km². Density-wise

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

Table 9.27.7: Bamboo bearing area by density in recorded forest area (Area in km²)

Recorded Forest Area	Pure bamboo	Dense bamboo	Scattered bamboo	Clumps hacked	Bamboo regeneration	No bamboo
16,583	2	311	647	189	164	15,270

Table 9.27.8: 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
122	87	26	235	424	591	1015