



TAMIL NADU STATE OF FOREST REPORT

[India State of Forest Report (ISFR) 2017]



FOREST DEPARTMENT
GOVERNMENT OF TAMIL NADU

'The Tamil Nadu State of Forest Report' gives a detailed view of the forest cover of the State based on the Forest Survey of India (FSI), India State of Forest Report (ISFR) 2017 assessment on a biennial basis. Forest Survey of India (FSI), an organization under Ministry of Environment, Forest and Climate Change, Government of India engaged in the assessment of the country's forest resources. The first State of Forest Report was brought out in 1987. Since then, FSI has published 14 such reports and the ISFR 2017 is the 15th in the series. The report provides district wise forest cover of the country and changes thereon with respect to the previous assessment. It also provides the estimates of growing stock within and outside the forest areas, forest cover in hill and tribal, carbon and other important aspects such as tree, bamboo and mangrove cover.

The forest cover assessment is wall to wall mapping exercise based on remote sensing supported by intensive ground verification and field data from National Forest Inventory. The tree cover estimation is a

sampling based exercise and estimated partly through high-resolution satellite data and partly through field inventory data of Trees Outside Forest (TOF). The information on growing stock or carbon stock and other important characteristics are estimated through field inventory data of forest and TOF under its regular inventory programme. The above work is done by Forest Survey of India (FSI).

Tamil Nadu is the southernmost State of the country and covers an area of 1,30,060 Sq.km which is 3.96% of the geographical area of the country. Physiographically, the State can be divided into four major regions, namely, Coastal Plains, Eastern Ghats, Central Plateau and Western Ghats. The State Tamil Nadu has a spectrum of nine major forest types ranging from wet evergreen forest to moist deciduous, dry deciduous, sholas, grass lands and scrub forest. The Western Ghats, the longest hill range in the State is one of the 25 global hotspots of bio-diversity and one of the three mega centers of endemism in India.

FOREST TYPES IN TAMIL NADU

S.No.	Major Forest Type group
1	Tropical wet evergreen
2	Tropical semi evergreen
3	Tropical moist deciduous
4	Littoral and swamp
5	Tropical dry deciduous
6	Tropical thorn
7	Tropical dry evergreen
8	Sub-Tropical Broad-leaved hill
9	Montane wet temperate

STATE OF FOREST REPORT FOR TAMIL NADU

- Forest cover in the State is 26,281 Sq.km which is 20.21% of the State's geographical area.
- In terms of forest canopy density classes, the State has 3,672 Sq.km under very dense forest, 10,979 Sq.km under moderately dense forest and 11,630 Sq.km under open forest.
- Recorded forest area of the State is 22,877 Sq.km which is 17.59% of the State's geographic area.
- Reserved, Protected and Unclassed Forests are 88.70%, 7.79% and 3.51% respectively of the recorded forest area.
- A net increase of 73 Sq.km in the forest cover of the State can be attributed to plantations and conservation efforts within Recorded forest areas. The negative change observed in some areas is mainly due to harvesting of trees outside forests and developmental activities.

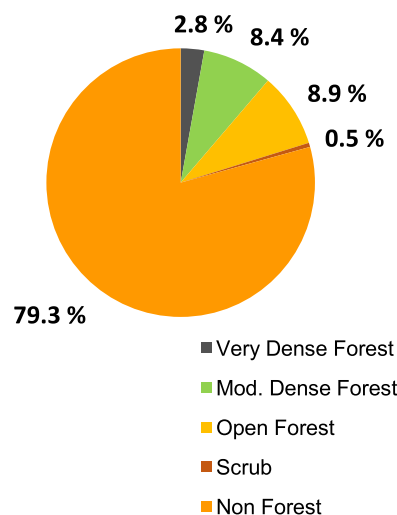
FOREST COVER WITHIN RECORDED FOREST AREA (Area in Sq. km)

Very Dense Forest (VDF)	3,386
Moderately Dense Forest (MDF)	8,544
Open Forest (OF)	5,651
Total	17,581

FOREST COVER OUTSIDE RECORDED FOREST AREA (Area in Sq. km)

Very Dense Forest	286
Moderately Dense Forest	2,435
Open Forest	5,979
Total	8,700
Total Forest Cover	26,281
Tree Cover	4,671
Total Forest & Tree Cover	30,952
Of State's Geographical Area	23.80%
Of India's Forest & Tree Cover	3.86%
Per capita Forest & Tree Cover	0.04 Ha

PIE CHART SHOWING FOREST COVER OF TAMILNADU



GROWING STOCK IN TAMIL NADU

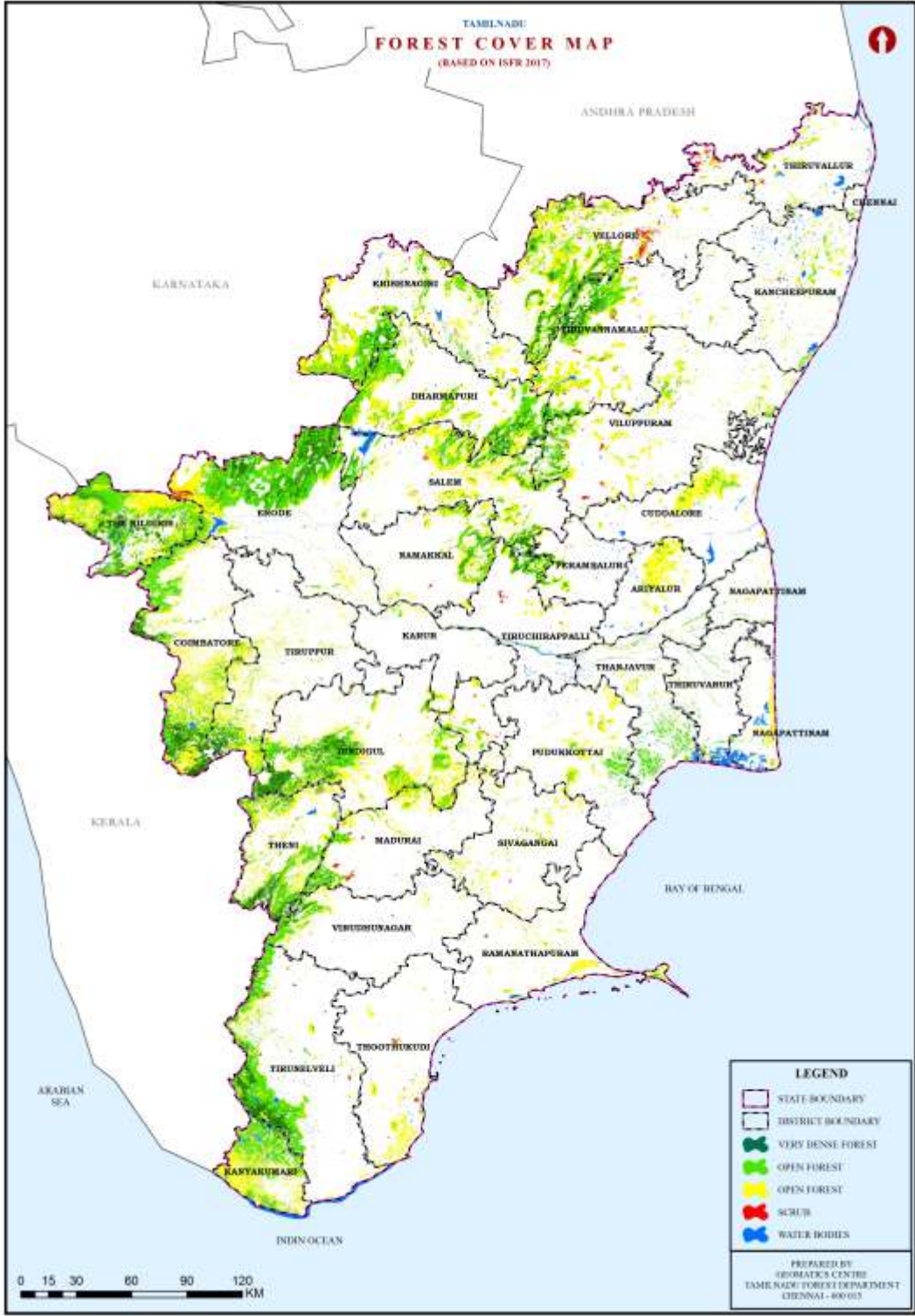
	Growing Stock	% Contribution to country
Growing Stock in Recorded Forest Area	127.810 m cum	3.03
Growing Stock in TOF	66.257 m cum	4.13
Potential Production of industrial wood from TOF	3.05 m cum	4.09
Bamboo bearing area within forest area of the State	4,154 Sq.km	2.64
Total number of culms	777 millions	2.76
Total green weight equivalent of culms	6,470 (000' tonnes)	3.43

DISTRICT-WISE FOREST COVER OF TAMIL NADU

District-wise Forest Cover of Tamil Nadu (area in Sq.km)								
District	Geographical Area	As per ISFR 2017 Assessment				% of GA	Change*	Scrub
		Very Dense Forest	Mod. Dense Forest	Open Forest	Total			
Ariyalur	1,940	0	43	337	380	19.59	53	4
Chennai	175	0	7	7	14	8.00	-2	0
Coimbatore ^H	4,732	364	669	942	1,975	41.74	-3	1
Cuddalore	3,703	0	48	334	382	10.32	-34	18
Dharmapuri ^T	4,497	271	842	585	1,698	37.76	16	13
Dindigul	6,036	256	771	849	1,876	31.08	6	34
Erode	5,760	408	1,127	772	2,307	40.05	9	32
Kancheepuram	4,483	0	72	238	310	6.92	15	34
Kanniyakumari ^H	1,684	146	554	294	994	59.03	-13	1
Karur	2,904	3	42	83	128	4.41	8	7
Krishnagiri	5,129	95	843	611	1,549	30.20	-38	24
Madurai ^H	3,710	40	231	290	561	15.12	12	32
Nagapattinam	2,569	0	33	112	145	5.64	-22	0
Namakkal ^T	3,420	84	284	212	580	16.96	4	20
Perambalur ^T	1,756	10	65	69	144	8.20	13	19
Pudukkottai	4,644	1	93	268	362	7.80	-23	8
Ramanathapuram	4,104	0	25	239	264	6.43	5	1
Salem ^T	5,237	199	759	525	1,483	28.32	46	31
Sivaganga	4,233	0	44	300	344	8.13	35	3
Thanjavur	3,411	0	249	107	356	10.44	-22	0
The Nilgiris ^H	2,565	496	596	627	1,719	67.02	-144	4
Theni	2,868	185	470	522	1,177	41.04	36	29
Thiruvallur	3,394	11	48	228	287	8.46	43	50
Thiruvarur	2,274	0	38	47	85	3.74	-11	0
Thoothukkudi	4,745	0	29	243	272	5.73	24	38
Tiruchirappalli ^T	4,509	55	226	202	483	10.71	30	31
Tirunelveli ^H	6,693	441	564	295	1,300	19.42	4	23
Tiruppur	5,187	50	246	509	805	15.52	34	8
Tiruvannamalai ^T	6,188	234	595	483	1,312	21.20	20	67
Vellore	6,075	203	935	675	1,813	29.84	-28	76
Viluppuram	7,194	80	300	466	846	11.76	0	44
Virudhunagar	4,241	40	131	159	330	7.78	0	5
Total	1,30,060	3,672	10,979	11,630	26,281	20.21	73	657

*Change compared to updated 2015 assessment. (H - Hill District, T - Tribal District)

TAMILNADU
FOREST COVER MAP
 (BASED ON ISFR 2017)



0 15 30 60 90 120
 KM

LEGEND

- STATE BOUNDARY
- DISTRICT BOUNDARY
- VERY DENSE FOREST
- OPEN FOREST
- OPEN FOREST
- SCRUB
- WATER BODIES

PREPARED BY
 GEOMATICS CENTRE
 TAMILNADU FOREST DEPARTMENT
 CHENNAI - 600 015

MANGROVE COVER

ISFR 2017 assessment shows that mangrove cover in the State is 49 Sq.km. Very Dense mangroves comprises 1 Sq.km of the mangrove cover, Moderately Dense mangrove is 25 Sq.km while open mangroves constitute an area of 23 Sq.km. There has been a net increase of 2 Sq.km in the mangrove cover of the State as compared to 2015 assessment. Over all there is a positive change in moderately dense forest by 7 Sq. km from open mangroves.

DISTRICT WISE MANGROVE COVER (Area in Sq.km)

Districts	Very Dense Mangrove	Moderately Dense Mangrove	Open Mangrove	Total	Change with respect to 2015 assessment
Cuddalore	0	7	1	8	1
Nagapattinam	0	1	3	4	-16
Pudukkottai	1	0	1	2	1
Ramanathapuram	0	1	1	2	-1
Thanjavur	0	8	4	12	0
Thiruvallur	0	0	1	1	0
Thiruvarur	0	7	9	16	16
Toothukudi	0	1	3	4	1
Total	1	25	23	49	2



ALTITUDE- WISE FOREST COVER OF TAMIL NADU: There is a considerable increase in the altitude wise forest cover in the case of Very dense forest and moderately dense forest by 679 and 510 Sq.km respectively.

ALTITUDE-WISE FOREST COVER OF TAMIL NADU (Area in Sq.km)

Altitude Zone (m)	Geographical Area	VDF	MDF	OF	Total
0-500	1,11,060	407	5,121	8,519	14,047
500-1000	13,688	1,821	4,386	2,432	8,639
1000-2000	4,437	1,101	1,377	647	3,125
2000-3000	875	343	95	32	470
Total	1,30,060	3,672	10,979	11,630	26,281

FOREST COVER IN HILL DISTRICTS: Forest cover plays a crucial role in the maintenance of mountain ecology and economy with particular reference to soil, water and environmental conservation. As per ISFR, 2017 assessment, forest cover in the hill districts of the State is 6,549 Sq.km, which is 33.79 percent of the total Geographic Area of these districts.

FOREST COVER IN HILL DISTRICTS

No.of Hill Districts	GA	ISFR 2017 Assessment				Percent of GA	Change with respect to 2015	Scrub
		VDF	MDF	OF	Total			
		Area in Sq.km					Area in Sq.km	
5	19,384	1,487	2,614	2,448	6,549	33.79	-144	61
VDF - Very Dense Forest; MDF – Moderate Dense Forest; OF – Open Forest								

FOREST COVER IN TRIBAL DISTRICTS: Tribals and forest have a traditional inter linkage and dependence for fulfilling the social, economic, cultural, religious and medical needs of the tribes. As per ISFR 2017 assessment, total forest cover in tribal districts is 5,700 Sq.km, which is 22.26 percent of the Geographical Area other hill districts.

FOREST COVER IN TRIBAL DISTRICT

No.of Hill Districts	GA	ISFR 2017 Assessment				Percent of GA	Change with respect to 2015	Scrub
		VDF	MDF	OF	Total			
		Area in Sq.km					Area in Sq.km	
6	25,607	853	2,771	2,076	5,700	22.26	129	181
VDF - Very Dense Forest; MDF – Moderate Dense Forest; OF – Open Forest								

CARBON STOCK IN FOREST

Total Carbon stock of forests in the State is 229.338 million tonnes (840.906 million tonnes of CO₂ equivalent) which is 3.24% of total forest carbon of the country. Forests and climate change are intimately intertwined. Forests regulate the climate, rain, ground water and soil of the earth. Forests are both sources and sinks of carbon. A growing forest captures carbon from the atmosphere and a mature forest is a store house of carbon.

CARBON STOCK IN DIFFERENT CARBON POOLS IN 000 TONNES WITH PER ha STOCK IN PARENTHESES

State	Area in Sq.km	Above Ground Biomass	Below Ground Biomass	Dead Wood	Litter	Soil Organic Carbon	Total
Tamil Nadu	26,281	84,067 (31.99)	29,252 (11.13)	1006 (0.38)	5,579 (2.12)	109,434 (41.64)	229,338 (87.26)

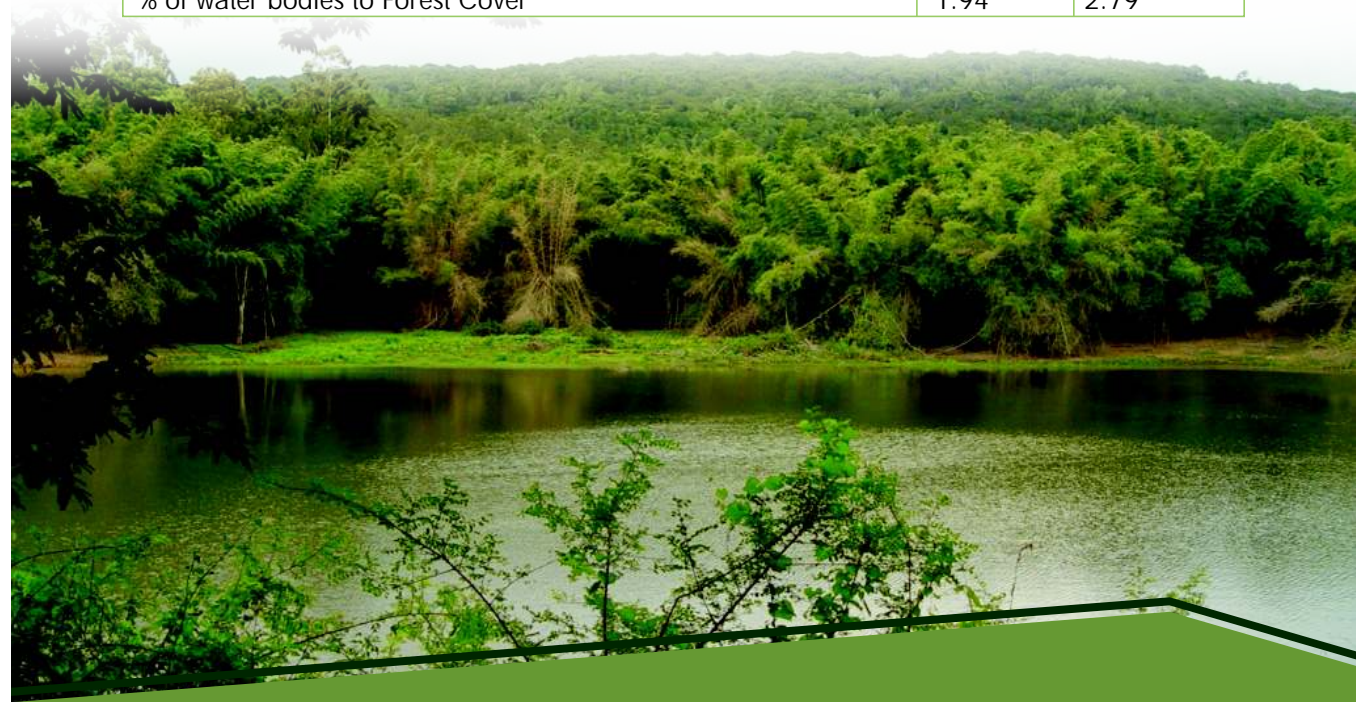
FOREST AND WATER

Forests play a vital role in water conservation as trees and other vegetation reduce the run-off and increase percolation of water into soil thereby improving the water regime in the area. The increase in water bodies within the forested areas of State clearly brings out the positive effects of forests in augmenting water resources. Various hydrological functions such as recharge of aquifers, reducing run-off increasing availability of water for irrigation etc., are enhanced due to conservation of forests.

Decadal Change in water bodies within Forest : An increase of 279 Sq.km has been observed in the water body coverage within Forest compared to 2005.

WATER BODIES WITHIN FOREST FOR THE YEARS 2005 AND 2015

Area/Coverage	2005	2015
Extent of water bodies (Sq.km) within Forest	453	732
% of water bodies to Forest Cover	1.94	2.79



BAMBOO RESOURCE IN THE STATE

As compared to the assessment of ISFR 2011, the total bamboo bearing area of the State has increased by 889 Sq.km. Out of the total bamboo bearing area, pure bamboo, dense bamboo and scattered spread over 23, 718 and 2,265 Sq.km respectively.

BAMBOO DENSITY IN RECORDED FOREST AREA (Sq.km)

Pure bamboo	Dense	Scattered	Bamboo present but clumps completely hacked	Regen-eration crop	No bamboo	RFA
23	718	2,265	163	985	18,723	22,877

Bamboo bearing area (Sq.km)	Bamboo bearing area (Sq.km) as per ISFR 2011	Change in area with respect to ISFR 2011
4,154	3,265	889



GLOSSARY

1. Carbon stock: It refers to the amount of carbon stored in the world's forest ecosystem, mainly in living biomass and soil, but to a lesser extent also in dead wood and litter.
2. Forest Cover: All lands, more than one hectare in area, with a tree canopy density of more than 10 percent irrespective of ownership and legal status. Such lands may not necessarily be a recorded forest area. It also includes orchards, bamboo and palm
3. Forest Area: The area recorded as a forest in the Government records. It is also referred to as "recorded forest area".
4. Growing stock: The sum (by number or volume) of all the trees growing/living in the forest or a specified part of it.
5. Hill District: A district with more than 50 percent of its geographic area under "hill talukas" based on criteria adopted by the Planning Commission for Hill Area and Western Ghats Development Programmes.
6. Mangroves: Salt tolerant evergreen forest ecosystem found mainly in tropical and sub-tropical coastal and/or inter-tidal regions.
7. Mangrove Cover: Area covered under mangrove vegetation as interpreted from remote sensing data. It is included in the forest cover.
8. Moderately Dense Forest: All lands with forest cover having a canopy density between 40 to 70 percent.
9. Open Forest: Lands with forest cover having a canopy density between 10 to 40 percent.
10. Protected Forest (PF): An area notified under the provisions of the Indian Forest Act or other State Forest Acts, having limited degree of protection. In protected forest all activities are permitted unless prohibited.
11. Reserved Forest (RF): An area so constituted under the provisions of the Indian Forest Act or other State Forest Acts, having full degree of protection. In Reserved forests all activities are prohibited unless permitted.
12. Scrub: Degraded forest lands having canopy density less than 10 percent.
13. Tree Cover: It comprises of tree patches outside the recorded forest area exclusive of forest cover and less than the minimum mappable area (1 Ha) and up to 0.1 Ha. Such small patches comprising of block, linear and scattered trees are not delineated as forest cover during interpretation of satellite data. The areas of scattered trees are computed by notional numbers.
14. Tribal Districts: Districts identified as tribal districts under Tribal Sub-Plan (Government of India).
15. Very Dense Forests: Lands with forest cover having a canopy density of 70 percent and above.
16. Unclassed Forest: An area recorded as forest but not included in reserved or protected forest category. Ownership status of such forests varies from State to State.



Courtesy
Forest Survey of India
Ministry of Environment, Forests & Climate Change
Government of India

Geomatics Centre,
Tamil Nadu Forest Department, Chennai, TN
cpgis@tn.nic.in / Phone No : 044-24335572