

## **TELANGANA FOREST COVER & FOREST FIRES**

*(Compiled from the data-in Telangana state of Forest Report 2015, Telangana Forest Department)*

Telangana State lies in between 15°50'12" N Latitudes to 19°55'2" N Latitudes and 77°14'55" E to 81°19'E Longitude, is a state in the Southern region of India, and is strategically located in the Deccan plateau in the central stretch.

The Geographical area of the State is 112102Km<sup>2</sup> which is 3.41% of the landmass of the country. The climate of the state is generally dry with temperature ranging from 8°C to 52°C and the annual rainfall is about 500-1300mm, received mainly from South west monsoon. The population of the state is 35.29 million (2011 Census). The male population is 17.75 million and female 17.54 million. The per capita forest area is 0.08 Ha. The population density is 307 persons per km.

### ***The Geological Formations of the state are***

1. The unclassified Archean crystalline rocks – mainly the Granite
2. The Mesozoic the local bearing Gondwana strata
3. Eocene lava flows (the Deccan traps)
4. The semi-consolidated or unconsolidated tertiary and recent rocks.

The soils of the state are Red, Black, Alluvial, Laterite and Saline/Alkaline.

### **Recorded Forest Area**

The State forest area is 26903.70 km<sup>2</sup>, which is 23.99% of the geographical area. Reserved, Protected and Un-Classed forests occupy 18294 km<sup>2</sup> (68%), 7802.07 (29%) and 807.11 km<sup>2</sup> (3%) of the forest area. the Adiladad district has the highest notified forest area of 7101.30 km<sup>2</sup> and the Ranga Reddy the lowest of 758.87 km<sup>2</sup>

### **Protected Area**

The state has 12 protected areas, consisting of 9 wildlife sanctuaries & 3 National Parks 2 wildlife sanctuaries.

### **Forest Cover**

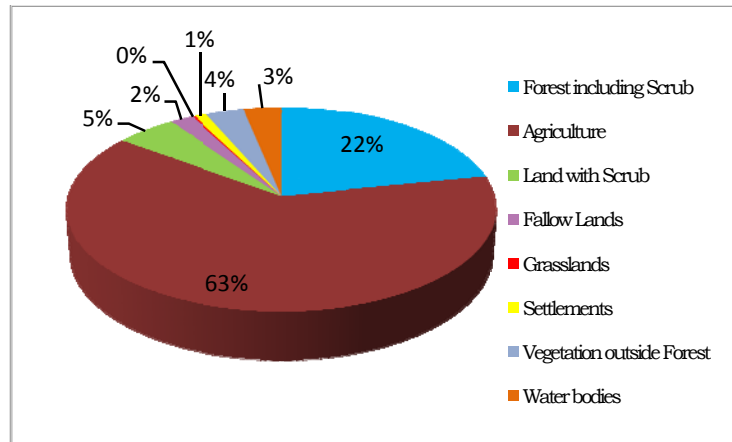
The forest cover in the state is based on the interpretation of IRS R2 LISS-III 2013 data is 16504.33 km<sup>2</sup>, which is 14.72% of the Geographical area. In terms of the forest canopy cover density classes the state has 286.66 km<sup>2</sup> of very Dense Forest (VDF), 7789.48 km<sup>2</sup> Moderately Dense Forest (MDF) AND 8428.19 km<sup>2</sup> of open forest (of). The area of the scrub is 4326.91, Non-forest 5930.77 km<sup>2</sup> and water bodies 141.69 km<sup>2</sup>.

The distribution of forest Cover in the Joint Forest Management area is 25.76 km<sup>2</sup> in very dense forest, 1577.68 km<sup>2</sup> in moderately dense forest and 2192.21 km<sup>2</sup> in open area of Scrub is 1223.58 km<sup>2</sup>. Non –Forest 1719.11 km<sup>2</sup> and water bodies 18.05 km<sup>2</sup>.

The distribution of forest cover in the PA areas is 25.96Km in very dense forest 1698.06 km in Moderately Dense forest and 2118.31 km in open Forest. The area

of Scrub is 998.85 km. Non-Forest is 912.30 km and area of water bodies is 102.58km.

Land use pattern of the State is presented in Figure 1



Source: As per LULC map prepared by NRSC, Hyderabad in 2007

**Figure1. Land use Pattern of the State**

### **Forest Division in Telangana**

Divisions with most loss of Forest Cover due to encroachments between 2012 and 2014 are Nizamabad, Paloncha, Warangal North, Paloncha WLM & Kothagudem Divisions.

**Table 1 - Land use pattern of the State**

Sl. No	Divisions	Land use								
		Forest including Scrub	Agriculture	Land with Scrub	Fallow Lands	Grasslands	Settlements	Vegetation outside forest	Water body	Total
1	Adilabad	1220.82	2136.41	290.73	76.03	0	19.57	107.06	31.49	3880.11
2	Bellampally	1040.56	1555.51	126.72	7.24	0.1	11.18	93.92	80.92	2916.15
3	Kagaznagar	777.61	706.05	72.37	11.61	-	8.51	34.68	34.22	1645.05
4	Mancherial	1023.02	983.23	134.86	63.42	-	13.76	65.25	31.10	2347.64
5	Kawal Treast (Jannaram )	1212.97	257.18	19.22	6.83	0	13.53	15.6	25.01	1550.34
6	Kawal Tr west (Nirmal)	1175.93	1955.52	76.52	75.74	0.46	32.95	145.99	323.1	3786.21
7	Achampet WLM	2993.29	804.03	286.07	155.27	127.72	4.03	645.24	90.23	4405.88
8	Nagarjuna sagar WLM	555.52	795.53	-	27.7	14.29	5.92	80.88	205.83	1685.67
9	Hyderabad	730.75	5916.47	444.08	14.15	0.79	424.91	27.36	160.01	7718.52
10	Mahaboobnagar	616.85	11853.49	436.22	412.62	-	36.58	250.11	462.38	14068.25
11	Nalagonda	281041	10714.96	833.94	171.14	-	104.70	30.79	413.41	12550.35
12	Bhadrachalam North	1128.10	506.08	164.28	151.07	9.34	6.86	35.36	47.83	2048.92
13	Khammam	1242.49	4143.12	126.96	18.75	-	78.02	303.10	91.61	6004.05
14	Kothagudem	1412013	879.50	7.021	22.30	0.49	20.80	75.75	19.17	2500.35
15	Paloncha	913.82	622.23	129.82	36.14	1.19	29.80	27.68	41.93	1802.61
16	Paloncha WLM	622.00	137.65	19.31	4.29	0.12	0.38	17.29	23.20	824.24
17	Kamareddy	903.57	1662.58	284.61	72.45	50	53.00	82.42	107.89	3216.52
18	Medak	923.13	7591.99	482.63	11.42	-	50.71	293.88	265.99	9619.75
19	Medak WLM	45.82	26.68	6.01	-	-	0.29	11.77	0.24	90.81
20	Nizamabad	705.71	3342.23	192.54	31.84	-	31.74	45	402.77	4751.83

Sl. No	Divisions	Land use								
		Forest including Scrub	Agriculture	Land with Scrub	Fallow Lands	Grasslands	Settlements	Vegetation outside forest	Water body	Total
21	Karimnagar East	1333.62	1292.93	316.44	217.32	-	0	32.87	548.56	3819.39
22	Karimnagar West	959.19	5315.40	732.57	246.07	-	123.64	426.79	232.06	8035.72
23	Warangal North	2062.96	5402.94	353.33	304.51	-	171.84	267.32	304.51	8666.70
24	Warangal South	815.16	2296.34	177.88	75.84	-	13.11	94.30	147.15	3619.78
25	Warangal WLM	511.55	6.86	10.81	0.19	-	14.99	1.04	511.55	545.44

Source: As per LULC map prepared by NRSC, Hyderabad in 2007

## FOREST FIRES:

Telangana has an area of around 26,903 km<sup>2</sup> of forest land under the control of Telangana State Forest Department. Out of this, about 18,765 km<sup>2</sup> is prone to fires. The fires in Telangana state (TS) are mainly ground fires in nature and manmade. The ground fires because widespread damage to the ground flora and the young regeneration is damaged.

Definite study was not carried out in the State to estimate the extent of forest fires and consequent damages. The Variables were weighed in the order of influence i.e., vegetation, aspect, slope and road etc, according to the field observations, past fire data and vegetation characteristics. The Fire Risk Zonation map have been prepared upto Beat Level and communicated for the use of field officers, based on which the field officers can take preventive measures before the commencement of fire season and avoid or minimize fires. Fire Risk Maps are independent and are not comparable between two divisions.

MODIS Satellite data was made available by FSI & NRSC from 2004, thus noticed 27% number of the compartments under fire occurrences, but the extent of the forest fire is unknown. The remaining 73% compartments could not be assessed due to the unavailability of the other bands of MODIS sensor.

The Forest areas of Telangana are mainly dry deciduous in nature, leaves start drying up and falling added to the inflammables material along with twigs, branches etc. Total number of fire incidents in TS communicated by FSI and NRSC between 2004 and 2015 is 7635. The Fire locations are being sent to the Field staff through departments website ([www.tgfdgis.com](http://www.tgfdgis.com) & [www.tgfmis.com](http://www.tgfmis.com)) and also through SMS alerts on the Cell phones of the concerned officers and staff soon after receipt of data from NRSC and FSI, for immediate action in extinguishing the fire and also in assessing the extent of fire and damage done if any.

**Table 2- Forest Density vs Fires from 2004 to 2015**

Canopy Density	Number of Fires	% of occurrences
Very Dense Forest	126	1.65
Dense Forest	3440	45.06
Open Forest	3155	41.32
Scrub Forest	720	9.43
Non Forest	194	2.54
<b>Total</b>	<b>7635</b>	<b>100</b>

The Forest fires cause the delay in establishment of a new crop and extending the rotation when the young regeneration is damaged. Also there is lower yield of plantation crops at maturity, change in soil nutrient status, and accelerated

erosion due to destruction of the ground flora and disrupted wildlife patterns and habitat.

An academic attempt was made to give ranking of fire incidences from the available data by making 3 classes viz., Low (<200), Medium (200-400) and High (>400) and the same is shown in Table 3

**Table 3 - The Fire Rankings from 2004 to 2015**

Division	Number of Fires	Rank Class
Nagarjuna Sagar WLM	0	Low
Nalgonda	1	Low
Mahabubnagar	5	Low
Medak Wlm	5	Low
Hyderabad	16	Low
Medak	44	Low
Kamareddy	65	Low
Nizamabad	75	Low
Karimnagar (West)	116	Low
Adilabad	144	Low
Kagaznagar	197	Low
Paloncha WLM	219	Medium
Mancherial	231	Medium
Jannaram WLM	244	Medium
Paloncha	277	Medium
Khammam	290	Medium
Bellampally	316	Medium
Warangal (South)	406	High
Warangal WLM	437	High
Karimnagar (East)	438	High
Nirmal	445	High
Kothagudem	653	High
Badrachalam (North)	878	High
Achampet WLM	977	High
Warangal (North)	1156	High

It is observed that forest fire incidences are more in MDF and OF classes as compared to other Crown cover density classes.