

11.30

WEST BENGAL

11.30.1 Introduction

The State of West Bengal, located in the eastern part of India has a geographical area of 88,752 sq km, which is 2.70% of the geographical area of the country. The State lies between 21°29'N to 27°13'N latitude and 85°50'E to 89°52' E longitude and shares international border with Bangladesh in the east, Nepal in the northwest and Bhutan in the northeast. The State is also bordered by Sikkim in the north, Assam in the east, Bihar & Jharkhand in the west and Odisha and the Bay of Bengal in the south. The State has two natural divisions viz the North Himalayan and the south Alluvial Gangetic Plains. The three main rivers of the State viz Teesta, Torsa and Jaldhaka are tributaries of river Brahmaputra. The rivers Ganga and Hooghly flowing through the central part of the State drain into the Bay of Bengal forming the famous Sunderbans. Climate varies from moist tropical in the southeast to dry tropical in the southwest and from subtropical to temperate in the mountains of north. The annual rainfall ranges between 900 mm in Southwest to 5,000 mm in parts of the north. The annual temperature varies from sub-zero in the hills during the winter to about 46°C in southern parts during the summer. As per the 2011 census, the population of West Bengal is 91.28 million, which is 7.54% of India's population. The rural and urban population constitute 68.13% and 31.87% respectively. The Tribal population is 5.80%. The population density of State is 1,028 per sq km, which is much higher than the national average. The 19th Livestock Census 2012 has reported a total livestock population of 30.35 million.

TABLE 11.30.1 Land Use Pattern

| Land Use Types | Area (in 000' ha) | Percentage |
|--|-------------------|------------|
| Geographical Area | 8,875 | |
| Reporting area for land utilization | 8,683 | 100.00 |
| Forests | 1,173 | 13.50 |
| Not available for land cultivation | 1,853 | 21.34 |
| Permanent pastures and other grazing lands | 2 | 0.03 |
| Land under misc. tree crops and groves | 50 | 0.57 |
| Culturable wasteland | 17 | 0.20 |
| Fallow land other than current fallows | 11 | 0.13 |
| Current fallows | 339 | 3.90 |
| Net area sown | 5,238 | 60.33 |

Source: Land Use Statistics, Ministry of Agriculture, GOI, (2014-15)



11.30.1.1 A Brief Overview of Forestry Scenario

The distribution of vegetation in northern West Bengal varies with elevation and precipitation, the foothills of the Himalayas are densely wooded with Sal and other tropical evergreen trees. The forest becomes predominantly subtropical above 1,000 meters and above 1,500 meters temperate forest trees like Oaks, Conifers and Rhododendrons predominate. As per the Champion & Seth Classification of Forest Types (1968), the forests in West Bengal belong to eight Forest Type Groups, which are further divided into 30 Forest Types. The State has taken initiative for raising plantations in and around industrial areas. West Bengal is one the pioneering States in implementing Joint Forest Management.

Recorded Forest Area (RFA) in the State is 11,879 sq km of which 7,054 sq km is Reserved Forest, 3,772 sq km is Protected Forest and 1,053 sq km is Unclassed Forests. In West Bengal, during the period 1st January 2015 to 5th February 2019, a total of 305.77 hectares of forest land was diverted for non-forestry purposes under the Forest Conservation Act, 1980 (MoEF & CC, 2019). As per the information received from the State during that last two years, 568.42 ha of plantations were raised in the State.

Six National Parks, 16 Wildlife Sanctuaries and five Conservation Reserves constitute the Protected Area network of the State covering 5.47% of its geographical area.

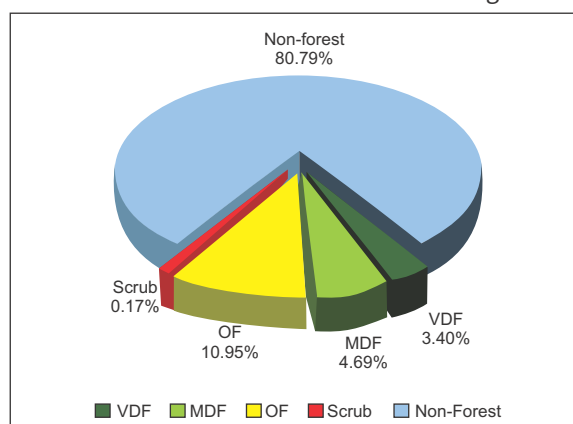
11.30.2 Forest Cover

Based on the interpretation of IRS Resourcesat-2 LISS III satellite data of the period Nov 2017 to Feb 2018, the Forest Cover in the State is 16,901.51 sq km. which is 19.04% of the State's geographical area. In terms of forest canopy density classes, the State has 3,018.52 sq km under Very Dense Forest (VDF), 4,160.26 sq km under Moderately Dense Forest (MDF) and 9,722.73 sq km under Open Forest (OF). Forest Cover in the State has increased by 54.51 sq km as compared to the previous assessment reported in ISFR 2017.

TABLE 11.30.2 Forest Cover of West Bengal
(in sq km)

| Class | Area | % of GA |
|--------------|------------------|--------------|
| VDF | 3,018.52 | 3.40 |
| MDF | 4,160.26 | 4.69 |
| OF | 9,722.73 | 10.95 |
| Total | 16,901.51 | 19.04 |
| Scrub | 146.12 | 0.17 |

FIGURE 11.30.1 Forest Cover of West Bengal



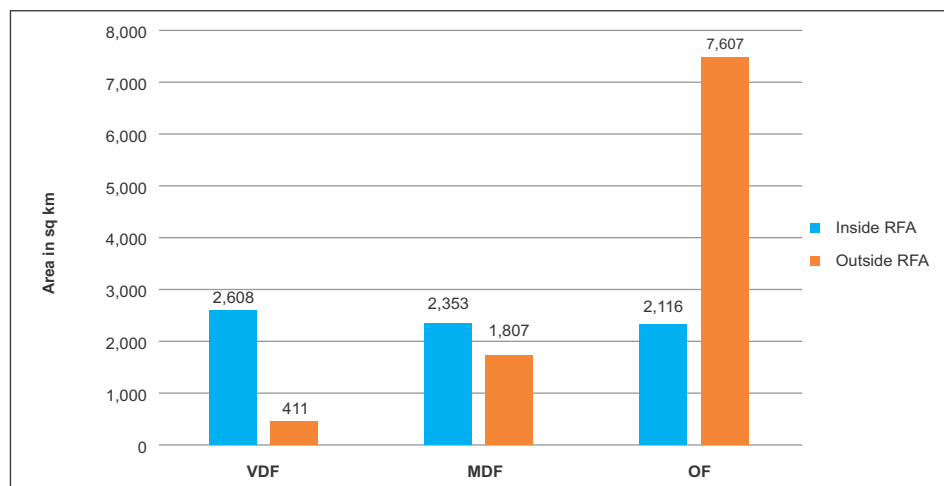
11.30.2.1 Forest Cover inside and outside Recorded Forest Area (or Green Wash)

The State has reported extent of recorded forest area (RFA) 11,879 sq km which is 13.38% of its geographical area. The reserved, protected and unclassified forests are 59.38% and 31.76% and 8.86% of the recorded forest area in the State respectively. However as the digitized boundary of recorded forest area from the state covers 13,418.77 sq km and the analysis of forest cover inside and outside this area is given below.

TABLE 11.30.3 Forest Cover inside and outside Recorded Forest Area or (Green Wash) in West Bengal (in sq km)

| Forest Cover inside the Recorded Forest Area (or Green Wash) | | | | Forest Cover outside the Recorded Forest Area (or Green Wash) | | | |
|---|--------|--------|-------|--|--------|--------|-------|
| VDF | MDF | OF | Total | VDF | MDF | OF | Total |
| 2,608 | 2,353 | 2,116 | 7,077 | 411 | 1,807 | 7,607 | 9,825 |
| 36.85% | 33.25% | 29.90% | | 4.18% | 18.40% | 77.42% | |

*in case of West Bengal RFA boundaries have been used.

FIGURE 11.30.2 Forest Cover inside and outside RFA in West Bengal**TABLE 11.30.4** District-wise Forest Cover in West Bengal (in sq km)

| District | Geographical Area (GA) | 2019 Assessment | | | | % of GA | Change wrt 2017 assessment | Scrub |
|--|------------------------|-------------------|-------------------|-----------------|------------------|--------------|----------------------------|---------------|
| | | Very Dense Forest | Mod. Dense Forest | Open Forest | Total | | | |
| Bankura ^T | 6,882 | 222.33 | 395.27 | 667.98 | 1,285.58 | 18.68 | 15.58 | 28.59 |
| Bardhaman ^T | 7,024 | 57.53 | 91.78 | 190.00 | 339.31 | 4.83 | 4.31 | 7.35 |
| Birbhum ^T | 4,545 | 1.00 | 34.14 | 149.66 | 184.80 | 4.07 | 7.80 | 8.90 |
| Dakshin Dinajpur ^T | 2,219 | 0.00 | 5.83 | 81.29 | 87.12 | 3.93 | 0.12 | 0.00 |
| Darjiling TH | 3,149 | 720.76 | 654.52 | 992.52 | 2,367.80 | 75.19 | 2.80 | 9.21 |
| Haora | 1,467 | 0.00 | 50.00 | 253.77 | 303.77 | 20.71 | -0.23 | 0.00 |
| Hugli | 3,149 | 0.00 | 14.00 | 146.00 | 160.00 | 5.08 | 0.00 | 0.00 |
| Jalpaiguri ^T | 6,227 | 724.22 | 434.92 | 1,703.26 | 2,862.40 | 45.97 | 5.40 | 39.65 |
| Koch Bihar | 3,387 | 0.00 | 27.00 | 322.06 | 349.06 | 10.31 | 0.06 | 0.00 |
| Kolkata | 185 | 0.00 | 0.00 | 1.00 | 1.00 | 0.54 | 0.00 | 0.00 |
| Maldah ^T | 3,733 | 0.00 | 209.04 | 282.65 | 491.69 | 13.17 | 0.69 | 0.00 |
| Murshidabad ^T | 5,324 | 0.00 | 53.06 | 291.83 | 344.89 | 6.48 | -1.11 | 0.00 |
| Nadia | 3,927 | 1.00 | 160.16 | 318.84 | 480.00 | 12.22 | 0.00 | 0.00 |
| North Twentyfour Parganas | 4,094 | 13.02 | 184.98 | 524.98 | 722.98 | 17.66 | -0.02 | 0.00 |
| Paschim Medinipur ^T | 9,368 | 256.21 | 591.64 | 1,313.69 | 2,161.54 | 23.07 | 10.54 | 20.24 |
| Purba Medinipur ^T | 4,713 | 1.99 | 197.96 | 620.10 | 820.05 | 17.40 | 0.05 | 2.50 |
| Puruliya ^T | 6,259 | 37.36 | 306.94 | 571.58 | 915.88 | 14.63 | 11.88 | 28.68 |
| South twentyfour Parganas ^T | 9,960 | 983.10 | 745.03 | 1,060.58 | 2,788.71 | 27.99 | -3.29 | 1.00 |
| Uttar Dinajpur | 3,140 | 0.00 | 3.99 | 230.94 | 234.93 | 7.48 | -0.07 | 0.00 |
| Grand Total | 88,752 | 3,018.52 | 4,160.26 | 9,722.73 | 16,901.51 | 19.04 | 54.51 | 146.12 |

TABLE 11.30.5 Forest Cover Change Matrix for West Bengal

(in sq km)

| Class | 2019 Assessment | | | | | Total ISFR 2017 |
|-------------------------|-----------------|--------------|--------------|------------|---------------|-----------------|
| | VDF | MDF | OF | Scrub | NF | |
| Very Dense Forest | 2,963 | 19 | 7 | 1 | 4 | 2,994 |
| Moderately Dense Forest | 53 | 4,070 | 17 | 1 | 6 | 4,147 |
| Open Forest | 3 | 65 | 9,581 | 9 | 48 | 9,706 |
| Scrub | 0 | 0 | 17 | 115 | 4 | 136 |
| Non Forest | 0 | 6 | 101 | 20 | 71,642 | 71,769 |
| Total ISFR 2019 | 3,019 | 4,160 | 9,723 | 146 | 71,704 | 88,752 |
| Net Change | 25 | 13 | 17 | 10 | -65 | |

Main reasons for the increase in forest cover in the State are plantation and conservation activities.

TABLE 11.30.6 Altitude-wise Forest Cover in West Bengal

(in sq km)

| Altitude Zone (m) | Geographical Area | VDF | MDF | OF | Total | Scrub |
|-------------------|-------------------|--------------|--------------|--------------|-----------------|------------|
| 0-500 | 86,650 | 2,389 | 3,612 | 9,035 | 15,036 (88.96%) | 146 |
| 500-1000 | 807 | 141 | 272 | 262 | 675 (3.99%) | 0 |
| 1000-2000 | 970 | 267 | 228 | 383 | 878 (5.19%) | 0 |
| 2000-3000 | 292 | 196 | 44 | 40 | 280 (1.66%) | 0 |
| >3000 | 33 | 26 | 4 | 3 | 33 (0.20%) | 0 |
| Total | 88,752 | 3,019 | 4,160 | 9,723 | 16,902 | 146 |

(based on SRTM, Digital Elevation Model, 30 m, 2016)

TABLE 11.30.7 Forest Cover in different slope classes in West Bengal

(in sq km)

| Slope (in degrees) | Geographical Area | VDF | MDF | OF | Total | Scrub |
|--------------------|-------------------|--------------|--------------|--------------|-----------------|------------|
| 0-5 | 85,130 | 2,209 | 3,244 | 8,729 | 14,182 (83.90%) | 131 |
| 5-10 | 1,227 | 141 | 217 | 227 | 585 (3.46%) | 6 |
| 10-15 | 508 | 119 | 151 | 152 | 422 (2.50%) | 3 |
| 15-20 | 539 | 147 | 157 | 171 | 475 (2.81%) | 2 |
| 20-25 | 514 | 149 | 148 | 168 | 465 (2.75%) | 2 |
| 25-30 | 404 | 122 | 117 | 134 | 373 (2.21%) | 1 |
| >30 | 430 | 132 | 126 | 142 | 400 (2.37%) | 1 |
| Total | 88,752 | 3,019 | 4,160 | 9,723 | 16,902 | 146 |

(based on SRTM, Digital Elevation Model, 30 m, 2016)

FIGURE 11.30.3 Forest Cover Map of West Bengal

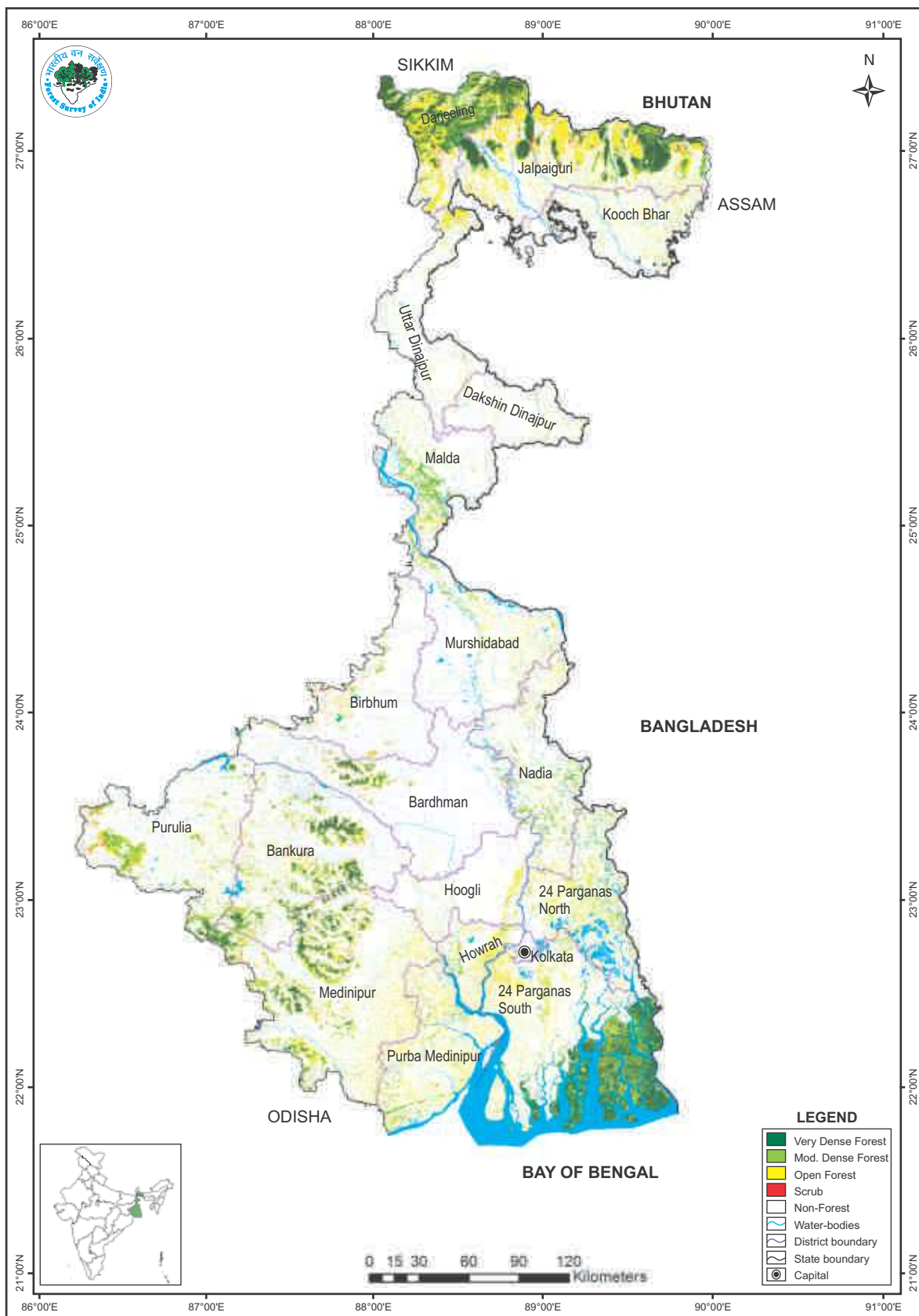


TABLE 11.30.8 Wetlands inside the Recorded Forest Area (or Green Wash) in West Bengal (in ha)

| Wetland Category | No. of Wetlands | Total Wetland Area |
|--|-----------------|--------------------|
| Inland Wetlands - Natural | | |
| Lake/Pond | 136 | 568 |
| Ox-bow lake/Cut-off meander | 18 | 172 |
| High altitude Wetland | 3 | 55 |
| Riverine wetland | 17 | 170 |
| Waterlogged | 129 | 801 |
| River/Stream | 50 | 2,18,985 |
| Sub - Total | 353 | 2,20,751 |
| Inland Wetlands -Man-made | | |
| Reservoir/Barrage | 136 | 3,456 |
| Tank/Pond | 722 | 2,043 |
| Waterlogged | 5 | 43 |
| Sub - Total | 863 | 5,542 |
| Inland Wetlands -Man-made | | |
| Sand/Beach | 33 | 1209 |
| Intertidal mud flat | 9 | 510 |
| Mangrove | 197 | 2,00,404 |
| Sub -Total | 239 | 2,02,123 |
| Wetlands (<2.25 ha) | 10,060 | 10,060 |
| Total | 11,515 | 4,38,476 |
| Total Recorded Forest (or Green Wash) Area (in ha) | | 13,41,877 |
| % of Wetland area inside Recorded Forest (or Green Wash) Area | | 32.68% |

(analysis based on the National Wetland Atlas: India, 2011)

11.30.3 Forest Types & Biodiversity

Forest Type Maps of 2011 have been refined in the recently completed exercise by FSI. Percentage area under different forest types of West Bengal as per the Champion & Seth classification (1968), according to the latest exercise are presented in the following table.

Table 11.30.9 Percentage area under different forest types of West Bengal

| Sl.No. | Forest Type | % of Forest cover |
|--------|---|-------------------|
| 1. | 2B/2S3 Sub Himalayan Secondary Wet Mixed Forest | 2.09 |
| 2. | 3C/C1a(I) East Himalayan Sal | 2.35 |
| 3. | 3C/C1b(I) East Himalayan Upper Bhabar Sal | 0.90 |
| 4. | 3C/C1b(ii) East Himalayan Lower Bhabar Sal | 0.69 |
| 5. | 3C/C1c Eastern Tarai Sal Forest | 1.91 |
| 6. | 3C/C2d (iii) Eastern Heavy Alluvium Plains Sal | 0.02 |
| 7. | 3C/DS1 Moist Sal Savannah | 0.07 |
| 8. | 3C/C3a West Gangatic Moist Mixed Deciduous Forest | 0.08 |
| 9. | 3C/C3b East Himalayan Moist Mixed Deciduous Forest | 2.45 |
| 10. | 3C/C3/2S2 (Secondary Euphorbiaceous Scrub) | 0.06 |
| 11. | 3C/1S1 Low Alluvial Savannah Woodland (<i>Salmalia albizia</i>) | 0.18 |
| 12. | 4B/TS1 Mangrove Scrub | 0.71 |
| 13. | 4B/TS2 Mangrove Forest | 5.89 |

Contd.

| Sl.No. | Forest Type | % of Forest cover |
|--------|---|-------------------|
| 14. | 4B/TS3 Salt Water Mixed Forest (<i>Heritiera</i>) | 2.80 |
| 15. | 4B/TS4 Brackish Water Mixed Forest (<i>Heritiera</i>) | 1.80 |
| 16. | 4B/E1 Palm Swamp | 0.87 |
| 17. | 4C/FS2 Submontane Hill-Valley Swamp Forest | 0.03 |
| 18. | 4D/SS2 <i>Barringtonia</i> Swamp Forest | 0.02 |
| 19. | 4D/2S2 Eastern Wet Alluvial Grassland | 0.01 |
| 20. | 5B/C1c Dry Peninsular Sal Forest | 16.31 |
| 21. | 5B/C2 Northern Dry Mixed Deciduous Forest | 1.49 |
| 22. | 5B/DS1 Dry Deciduous Scrub | 0.21 |
| 23. | 5/E5 <i>Butea</i> Forest | 0.12 |
| 24. | 5/1S2 <i>Khair-Sissu</i> Forest | 1.18 |
| 25. | 8B/C1 East Himalayan Sub-Tropical Wet Hill Forest | 2.81 |
| 26. | 11B/C1a Lauraceous Forest | 0.72 |
| 27. | 11B/C1b <i>Buk</i> Oak Forest | 0.33 |
| 28. | 11B/C1c High Level Oak Forest | 0.12 |
| 29. | 12/C3a East Himalayan Mixed Coniferous Forest | 1.90 |
| 30. | 14/C2 East Himalayan Sub-Alpine Birch/Fir Forest | 0.08 |
| 31. | Plantation/ TOF | 51.8 |
| | Total | 100.00 |

11.30.3.1 Assessment of Biodiversity

Findings of the rapid assessment of Biodiversity carried out at the national level for natural forests during September 2018 to May 2019 as part of the forest type mapping exercise is summarized below in table 11.30.10 and table 11.30.11 in respect of West Bengal.

TABLE 11.30.10 No. of species observed during the rapid assessment

| Plant Type | Number of Species |
|------------|-------------------|
| Tree | 113 |
| Shrub | 103 |
| Herb | 65 |

TABLE 11.30.11 Shannon-Wiener Index of Tree, Shrub and Herb species in different Type Groups of West Bengal

| Sl.No. | Forest Type Group | Shannon-Wiener Index | | |
|--------|---|----------------------|-------|------|
| | | Tree | Shrub | Herb |
| 1 | Group 2- Tropical Semi-Evergreen Forests | 2.33 | 2.51 | 2.40 |
| 2 | Group 3- Tropical Moist Deciduous Forests | 2.76 | 1.21 | 1.59 |
| 3 | Group 4- Littoral and Swamp Forests | * | 1.28 | 1.10 |
| 4 | Group 5- Tropical Dry Deciduous Forests | 2.32 | 2.49 | 1.95 |
| 5 | Group 8- Subtropical Broadleaved Hill Forests | 1.76 | 2.36 | 2.33 |
| 6 | Group 11- Montane Wet Temperate Forests | 1.51 | 2.66 | 1.76 |
| 7 | Group 12- Himalayan Moist Temperate Forests | 1.96 | 2.72 | 2.32 |
| 8 | Group 14- Sub Alpine Forests | 1.19 | 2.03 | 1.24 |

*adequate number of sample plots were not available

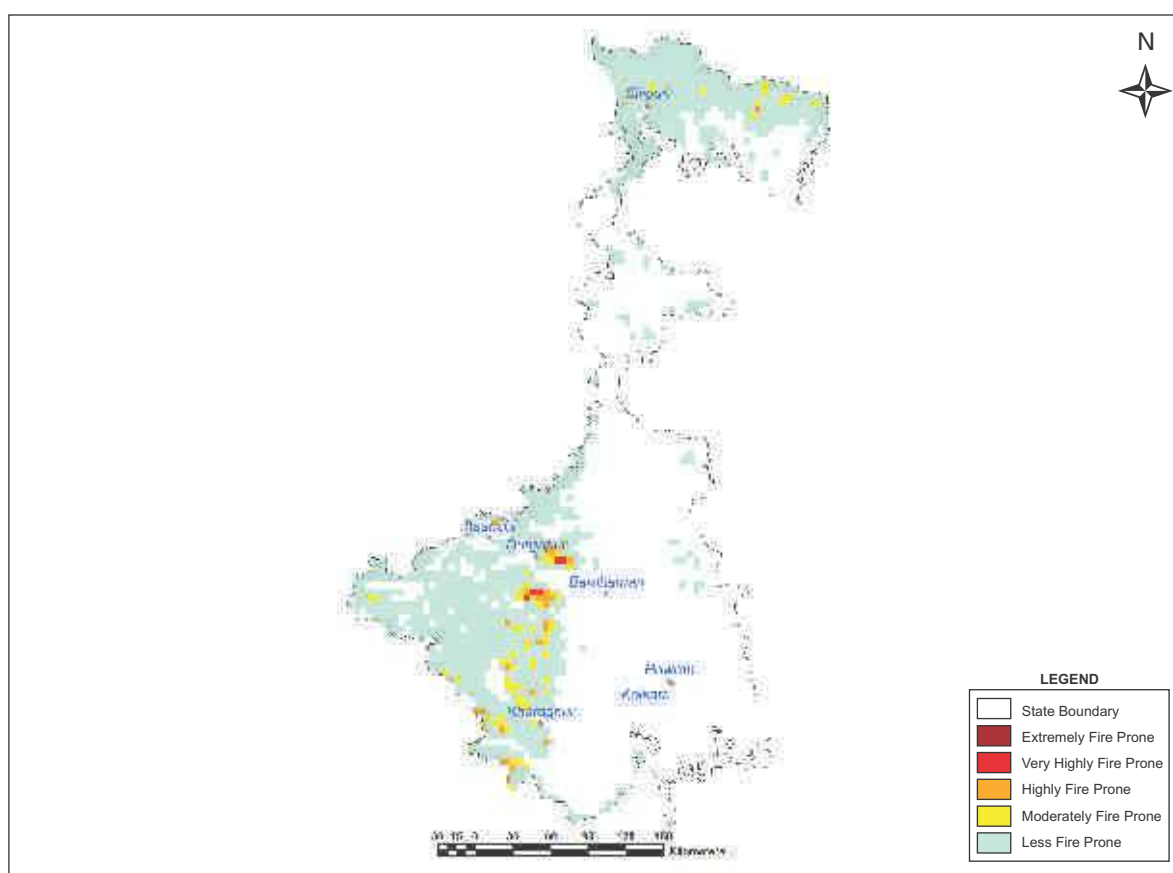
11.30.4 Fire Prone Forest Areas

Geographical area under different classes of forest fire proneness are given in the following table.

TABLE 11.30.12 Forest Fire Prone Classes (in sq km)

| Sl. No. | Forest Fire Prone Classes | Geographical Area | % of Total forest cover |
|---------|---------------------------|-------------------|-------------------------|
| 1. | Extremely fire prone | 0.00 | 0.00 |
| 2. | Very highly fire prone | 129.87 | 0.98 |
| 3. | Highly fire prone | 669.09 | 4.33 |
| 4. | Moderately fire prone | 1,764.89 | 10.72 |
| 5. | Less fire prone | 28,363.70 | 83.97 |
| | Total | 30,927.55 | 100.00 |

FIGURE 11.30.4 Fire prone forest areas under different fire prone classes



11.30.5 Tree Cover

Forest cover presented in the section 11.30.2 accounts for tree patches of size 1 ha and more having canopy density more than 10%. However, trees occurring in patches of size less than 1 ha including scattered trees are assessed through sampling based methodology. Tree cover in West Bengal has been estimated as given in table 11.30.13.

TABLE 11.30.13 Tree Cover in West Bengal
(in sq km)

| Tree Cover | Area |
|------------|-------|
| | 2,006 |

Tree cover of West Bengal has decreased by 130 sq km as compared to the previous assessment reported in ISFR 2017.

11.30.6 Extent of Trees Outside Forest (TOF)

Trees outside Forests (TOF) refer to tree resources found outside the forests as defined in the Government records. FSI maps forest cover using satellite data and assesses tree cover outside forests using sampling based method. Forest Cover outside the recorded forest area is derived using boundaries of RFA or Green Wash. Extent of TOF therefore may be estimated as the sum of extent of forest cover outside the recorded forest areas (RFA) and tree cover as given in the preceding section.

TABLE 11.30.14 Extent of TOF in West Bengal
(in sq km)

| Forest Cover outside the RFA/GW | Tree Cover | Extent of TOF |
|---------------------------------|------------|---------------|
| 9,825 | 2,006 | 11,831 |

11.30.7 Growing Stock in West Bengal

Growing stock in the recorded forest areas (RFA) in West Bengal is given in the table 11.30.15. Diameter class-wise distribution of top 5 species in numbers derived from the forest inventory data is presented in the table 11.30.16

TABLE 11.30.15 Growing Stock in Forest
(in m cum)

| Growing Stock (GS) | | % of Country's GS |
|---------------------------------------|-------|-------------------|
| Growing Stock in Recorded Forest Area | 54.87 | 1.28 |
| Growing Stock in TOF | 32.63 | 1.99 |

TABLE 11.30.16 Diameter class distribution of top five species inside RFA in West Bengal
(in '000)

| Sl.No. | Species | Dia class (cm) | | |
|--------|------------------------------|----------------|-------|-----|
| | | 10-30 | 30-60 | >60 |
| 1. | <i>Shorea robusta</i> | 66,187 | 2,167 | 194 |
| 2. | <i>Tectona grandis</i> | 9,400 | 2,570 | 226 |
| 3. | <i>Schima wallichii</i> | 8,221 | 1,605 | 441 |
| 4. | <i>Eucalyptus species</i> | 9,338 | 327 | 0 |
| 5. | <i>Acacia auriculiformis</i> | 16,877 | 129 | 0 |

11.30.8 Carbon Stock in Forest

The total Carbon stock of forest in the State including the TOF patches which are more than 1ha in size is 147.71 million tonnes (541.60 million tonnes of CO₂ equivalent) which is 2.07% of total forest carbon of the country. Pool wise forest carbon in West Bengal is given in the following table

TABLE 11.30.17 Forest Carbon in West Bengal in different pools
(in '000 tonnes)

| AGB | BGB | Dead wood | Litter | SOC | Total |
|--------|--------|-----------|--------|--------|----------|
| 40,388 | 12,193 | 447 | 2,533 | 92,144 | 1,47,705 |

11.30.9 Growing Stock of Bamboo

Bamboo bearing area and growing stock inside the recorded forest area (RFA)/ Green Wash in the State which includes culms of 1 year age and above, are given in the table 11.30.18

TABLE 11.30.18 Growing Stock of Bamboo in West Bengal

| Growing Stock (GS) | | % of Country's GS of Bamboo |
|--|-------|-----------------------------|
| Bamboo bearing area inside RFA/Green Wash (in sq km) | 855 | 0.53 |
| Total number of culms (in millions) | 384 | 0.97 |
| Total equivalent green weight (in 000' tonnes) | 1,110 | 0.40 |

11.30.10 Dominant tree species in Trees Outside Forests (TOF)

Top five species in numbers in Trees Outside Forests in West Bengal in Rural and Urban areas are given in the table 11.30.19 and table 11.30.20 respectively

TABLE 11.30.19 Top five tree species in TOF (Rural) in West Bengal

| Sl. No. | Species | Relative Abundance (%) |
|---------|---------------------------|------------------------|
| 1. | <i>Bombax ceiba</i> | 8.67 |
| 2. | <i>Dalbergia sissoo</i> | 7.24 |
| 3. | <i>Mangifera indica</i> | 6.48 |
| 4. | <i>Butea frondosa</i> | 5.74 |
| 5. | <i>Eucalyptus species</i> | 5.61 |

TABLE 11.30.20 Top five tree species in TOF (Urban) in West Bengal

| Sl. No. | Species | Relative Abundance (%) |
|---------|--------------------------------|------------------------|
| 1. | <i>Areca catechu</i> | 26.63 |
| 2. | <i>Cocos nucifera</i> | 10.35 |
| 3. | <i>Mangifera indica</i> | 9.45 |
| 4. | <i>Artocarpus integrifolia</i> | 4.63 |
| 5. | <i>Azadirachta indica</i> | 3.54 |

11.30.11 Major NTFP and Invasive Species

Major NTFP and invasive species as assessed from forest inventory data are presented in the table 11.30.21 and table 11.30.22 respectively.

TABLE 11.30.21 Major NTFP species in the State of West Bengal

| Sl. No. | Species | Plant Type | Relative Abundance (%) |
|---------|----------------------------|------------|------------------------|
| 1. | <i>Shorea robusta</i> | Tree | 75.18 |
| 2. | <i>Madhuca indica</i> | Tree | 8.44 |
| 3. | <i>Butea monosperma</i> | Tree | 8.37 |
| 4. | <i>Terminalia belerica</i> | Tree | 1.85 |
| 5. | <i>Terminalia arjuna</i> | Tree | 1.35 |

TABLE 11.30.22 Major invasive species in the State inside the RFA/Green Wash in West Bengal (in sq km)

| Sl. No. | Species | Estimated Extent |
|---------|----------------------------|------------------|
| 1. | <i>Chromolaena odorata</i> | 219 |
| 2. | <i>Ageratum conyzoides</i> | 68 |
| 3. | <i>Mikania micrantha</i> | 50 |
| 4. | <i>Lantana camara</i> | 47 |
| 5. | <i>Xanthium strumarium</i> | 13 |

Major NTFP species are given in terms of relative abundance whereas invasive species are given in terms of their estimated extent.

11.30.12 Quantified estimation of Dependence of People living in forest fringe villages on forests in West Bengal

Through a nation-wide study, FSI has done estimation of dependence of people living in the villages close to forest for fuel wood, fodder, small timber and bamboo in quantified terms for each State & UT of the country (Please refer to Chapter 10 in Vol. I for details). The estimated quantities of the four produce for West Bengal is given in the table 11.30.23

TABLE 11.30.23 Estimation of Dependence of People in Forest Fringe Villages on Forests in West Bengal

| Fuelwood (tonnes) | Fodder (tonnes) | Bamboo (tonnes) | Small Timber (cum) |
|-------------------|-----------------|-----------------|--------------------|
| 25,19,384 | 2,12,08,743 | 45,470 | 1,34,946 |

