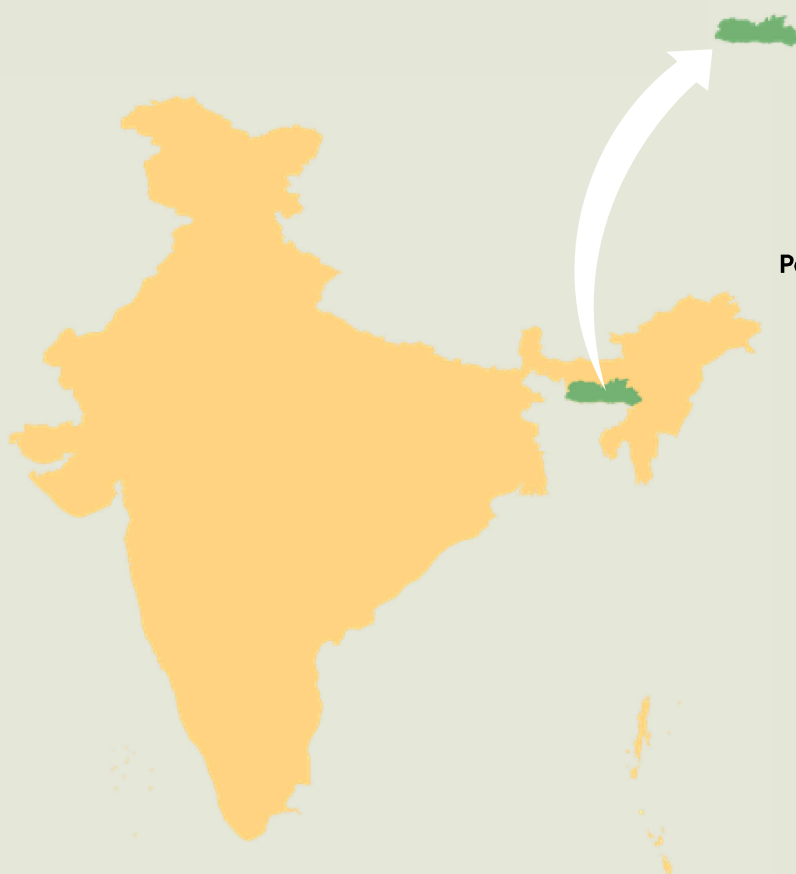


MEGHALAYA

**Geographical Area**22,429 km²**Geographical Coordinates**

Latitude 24°58' N to 26°07'N

Longitude 89°48' E to 92°51'E

Population (as per Census 2011)

2.96 million

Urban 0.59 million (20.07 %)

Rural 2.37 million (79.93 %)

Tribal 2.56 million (21.09 %)

Average Population Density132 per km²**Livestock Population**(as per 19th Livestock Census)

1.96 million

No. of Districts

12

No. of Hill Districts

12

No. of Tribal Districts

12

Table 10.17.1 Land Use Pattern

Land Use Types	Area (in '000 ha)	Percentage
Geographical Area	2,243	
Reporting area for land utilization	2,203.40	100.00
Forests	866.35	39.32
Not available for land cultivation	322.20	14.62
Permanent pastures and other grazing lands	0.00	0.00
Land under misc. tree crops and groves	170.37	7.73
Culturable wasteland	368.52	16.73
Fallow land other than current fallows	153.89	6.98
Current fallows	53.51	2.43
Net area sown	268.56	12.19

Source: Land Use Statistics, Ministry of Agriculture and Farmer's Welfare, GOI, (2021-22).

10.17.1 Forest Cover

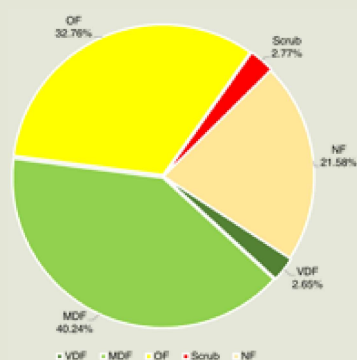


Figure 10.17.1 Forest Cover of Meghalaya

Table 10.17.2 Forest Cover of Meghalaya

(km ²)		
Class	Area	% of Calculated Area by Sol
VDF	594.84	2.65
MDF	9,023.81	40.24
OF	7,348.19	32.76
Total	16,966.84	75.65
Scrub	620.41	2.77

Table 10.17.3 District- wise Forest Cover in Meghalaya

(km ²)								
District	Calculated Area by Sol	2023 Assessment				% of Calculated Area by Sol	Change w.r.t. 2021 Raster based*	Scrub
		Very Dense Forest	Mod. Dense Forest	Open Forest	Total			
East Garo Hills ^H	1,443	67.95	610.63	674.39	1,352.97	93.76	-28.09	78.70
East Jaintia Hills ^H	2,040	147.58	585.69	595.53	1,328.80	65.14	-20.76	70.95
East Khasi Hills ^H	2,748	24.48	964.48	765.54	1,754.50	63.85	13.69	90.41
Eastern West Khasi Hills ^H	1,145	98.66	561.40	147.95	808.01	70.57	2.94	19.78
North Garo Hills ^H	1,160	0.00	532.09	523.07	1,055.16	90.96	-15.37	38.03
Ri-Bhoi ^H	2,448	123.28	1,069.41	890.60	2,083.29	85.10	0.56	50.32
South Garo Hills ^H	1,887	82.64	934.47	618.59	1,635.70	86.68	-5.28	16.13
South West Garo Hills ^H	866	0.00	236.61	367.57	604.18	69.77	-4.59	1.96
South West Khasi Hills ^H	1,401	29.74	469.37	402.72	901.83	64.37	10.10	84.07
West Garo Hills ^H	2,811	0.00	940.57	1,145.84	2,086.41	74.22	12.72	48.30
West Jaintia Hills ^H	1,779	3.71	793.60	373.46	1,170.77	65.81	-8.03	57.65
West Khasi Hills ^H	2,701	16.80	1,325.49	842.93	2,185.22	80.90	12.11	64.11
Grand Total	22,429	594.84	9,023.81	7,348.19	16,966.84	75.65	-30.00	620.41

*Area figure calculated without normalization factor.



10.17.2 Forest Cover Inside and Outside Recorded Forest Area (or Green Wash)

The Forest Cover inside and outside Recorded Forest Area (RFA) has been analysed in different categories and presented in table given below.

Table 10.17.4 Forest Cover Inside and Outside Recorded Forest Area (or Green Wash) in Meghalaya

(km²)

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
547.93	7,502.05	6,600.87	14,650.85	46.91	1,521.76	747.32	2,315.99
3.74%	51.21%	45.05%		2.02%	65.71%	32.27%	

*In case of Meghalaya, GW boundaries have been used.

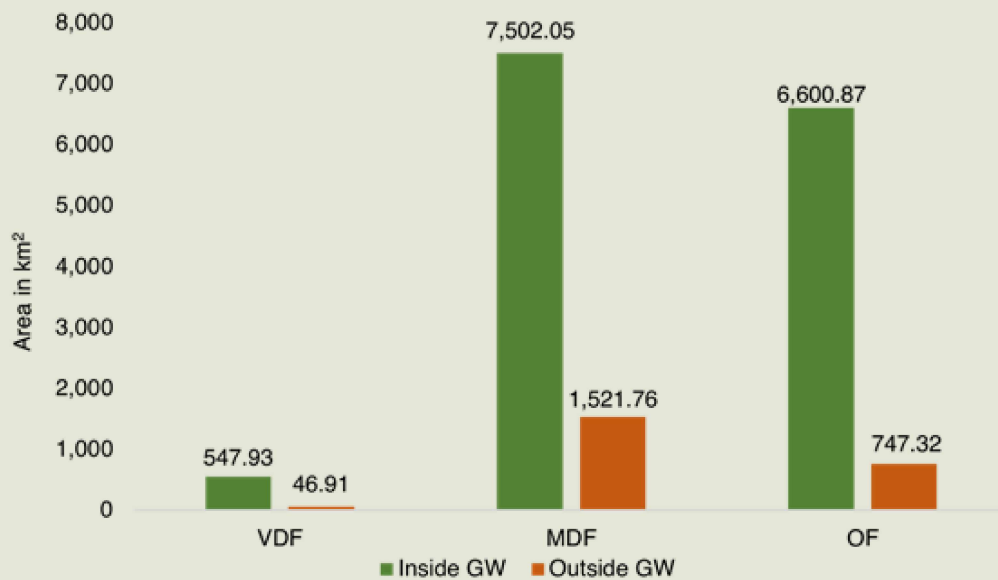


Figure 10.17.2 Forest Cover Inside and Outside of GW in Meghalaya

Table 10.17.5 Forest Cover Change Matrix Inside RFA/GW for Meghalaya between 2021 Raster based and 2023 Assessments

(km²)

Class	2023 Assessment inside RFA/GW					Total ISFR 2021 inside RFA / GW Raster based*
	VDF	MDF	OF	Scrub	NF	
VDF	507.94	0.00	0.00	0.00	1.04	508.98
MDF	39.84	7,473.88	14.51	28.93	42.50	7,599.66
OF	0.15	13.77	6,396.05	78.78	86.27	6,575.02
Scrub	0.00	2.08	66.99	401.42	134.85	605.34
NF	0.00	12.32	123.32	56.53	2,009.44	2,201.61
Total ISFR 2023 inside RFA / GW	547.93	7,502.05	6,600.87	565.66	2,274.10	17,490.61
Net Change	38.95	-97.61	25.85	-39.68	72.49	

*Area figure calculated without normalization factor.



Table 10.17.6 Forest Cover Change Matrix Outside RFA/GW for Meghalaya between 2021 Raster based and 2023 Assessments

Class	2023 Assessment outside RFA/GW					(km ²)
	VDF	MDF	OF	Scrub	NF	Total ISFR 2021 outside RFA / GW Raster based*
VDF	46.15	0.00	0.16	0.00	0.16	46.47
MDF	0.62	1,514.58	3.53	2.71	16.31	1,537.75
OF	0.00	0.32	708.20	4.61	15.83	728.96
Scrub	0.00	0.50	4.02	35.58	26.02	66.12
NF	0.14	6.36	31.41	11.85	2,509.33	2,559.09
Total ISFR 2023 outside RFA/GW	46.91	1,521.76	747.32	54.75	2,567.65	4,938.39
Net Change	0.44	-15.99	18.36	-11.37	8.56	

*Area figure calculated without normalization factor.

Table 10.17.7 Altitude-wise Forest Cover in Meghalaya

Altitude Zone (m)	Calculated Area by Sol	VDF	MDF	OF	Total	Scrub	(km ²)
0-500	10,152	310.80	4,142.05	4,052.63	8,505.48	209.01	
500-1000	6,239	208.66	2,622.68	2,286.08	5,117.42	319.26	
1000-2000	6,038	75.38	2,259.08	1,009.48	3,343.94	92.14	
Total	22,429	594.84	9,023.81	7,348.19	16,966.84	620.41	

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

Table 10.17.8 Forest Cover in Different Slope Classes in Meghalaya

Slope (in degrees)	Calculated Area by Sol	VDF	MDF	OF	Total	Scrub	(km ²)
0-5	6,169	123.19	1,866.61	1,619.55	3,609.35	139.14	
5-10	6,115	127.09	2,420.43	2,095.05	4,642.57	165.24	
10-15	4,403	106.48	1,936.62	1,602.20	3,645.30	125.76	
15-20	2,670	88.47	1,262.07	967.78	2,318.32	81.51	
20-25	1,488	65.68	740.51	523.71	1,329.90	48.73	
25-30	806	42.06	409.67	277.42	729.15	28.69	
>30	778	41.87	387.90	262.48	692.25	31.34	
Total	22,429	594.84	9,023.81	7,348.19	16,966.84	620.41	

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

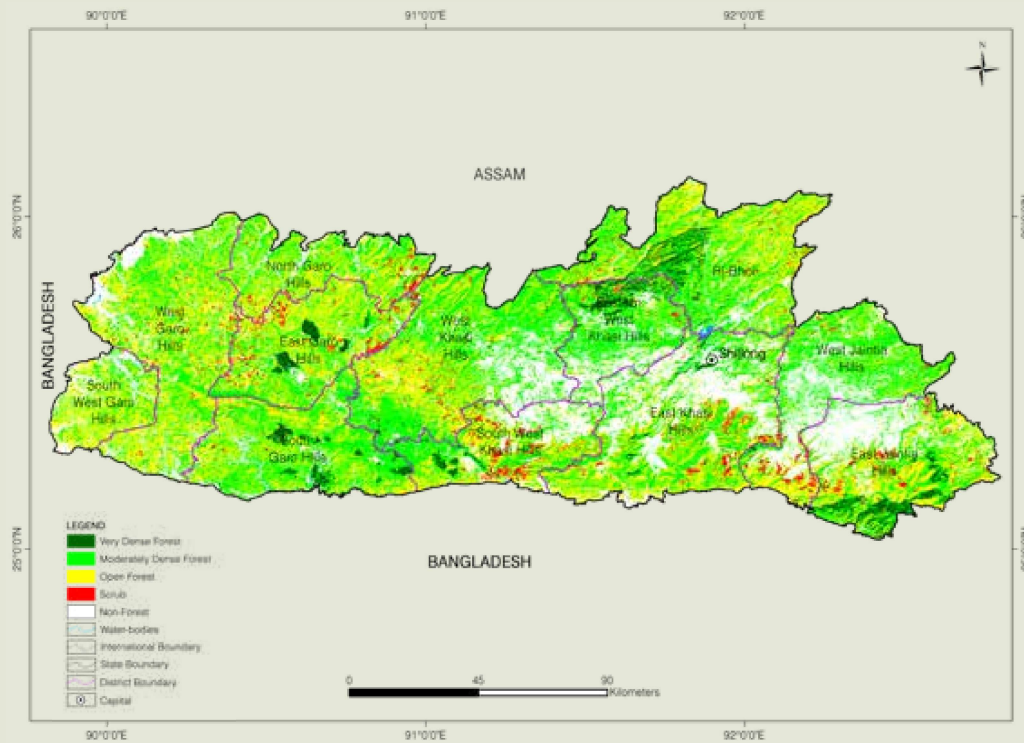


Figure 10.17.3 Forest Cover Map of Meghalaya

10.17.3 Forest Types

The area under different Forest Types in Meghalaya (as per the Champion & Seth Forest Classification, 1968) based on the Forest Cover Map (FCM), ISFR-2023, is presented in the following table.

Table 10.17.9 Area Statistics of the Forest Types Found in Meghalaya

(km ²)			
Sl. No.	Forest Type	Area	% of the total mapped area*
1	1B/C3 Cachar tropical evergreen forest	1,518.93	8.29
2	1/2S1 Pioneer Euphorbiaceous scrub	448.48	2.45
3	2B/ C1a Assam alluvial plains semi-evergreen forest	128.27	0.70
4	2/2S1 Secondary moist bamboo brakes	354.84	1.95
5	3C/C1a(ii) <i>Khasi</i> hill sal	1,117.12	6.10
6	3C/C3b East Himalayan moist mixed deciduous forest	8,709.09	47.56
7	8B/C2 <i>Khasi</i> subtropical wet hill forest	3,569.97	19.49
8	9/C2 Assam subtropical pine forest	1,170.24	6.39
Sub Total		17,016.94	92.93
9	TOF/ Plantation	570.31	3.11
Total (Forest Cover & Scrub)		17,587.25	96.04
Grassland forest type (outside forest cover)			
10	9/C2/DS1 Assam subtropical pine savannah	725.26	3.96
Sub Total		725.26	3.96
Grand Total		18,312.51	100.00

*Forest Types have been assigned to the natural forest formations under forest cover and scrub categories shown in the forest cover mapping (ISFR, 2023). Grassland forest type outside forest cover has also been mapped. The total mapped area, therefore, is sum of forest cover, scrub and grassland forest types (found in non-forest).



10.17.4 Forest Fire

District-wise number of forest fire detected by FSI using SNPP-VIIRS sensors (This includes large, continuous and repeated forest fires) during the fire season 2022-23 & 2023-24.

Table 10.17.10 District-wise Number of Forest Fire Detected

Sl. No.	District	SNPP-VIIRS Detection during 2022-23	SNPP-VIIRS Detection during 2023-24
1	East Garo Hills	571	331
2	East Jaintia Hills	766	348
3	East Khasi Hills	380	226
4	Eastern West Khasi Hills	342	493
5	North Garo Hills	356	213
6	Ri-Bhoi	1,559	1,377
7	South Garo Hills	130	90
8	South West Garo Hills	14	15
9	South West Khasi Hills	589	119
10	West Garo Hills	164	114
11	West Jaintia Hills	391	243
12	West Khasi Hills	1,342	750
Grand Total		6,604	4,319

10.17.5 Fire Prone Forest Areas

Forest Cover under different classes of forest fire proneness is given in following table.

Table 10.17.11 Forest Fire Prone Classes

(km ²)			
Sl. No.	Forest Fire Prone Classes	Forest Cover*	% of Total Forest Cover
1	Extremely fire prone	638.89	3.63
2	Very highly fire prone	2,516.49	14.31
3	Highly fire prone	4,013.73	22.82
4	Moderately fire prone	3,752.65	21.34
5	Less fire prone	6,665.49	37.90
Total		17,587.25	100.00

*Forest Cover including Scrub.

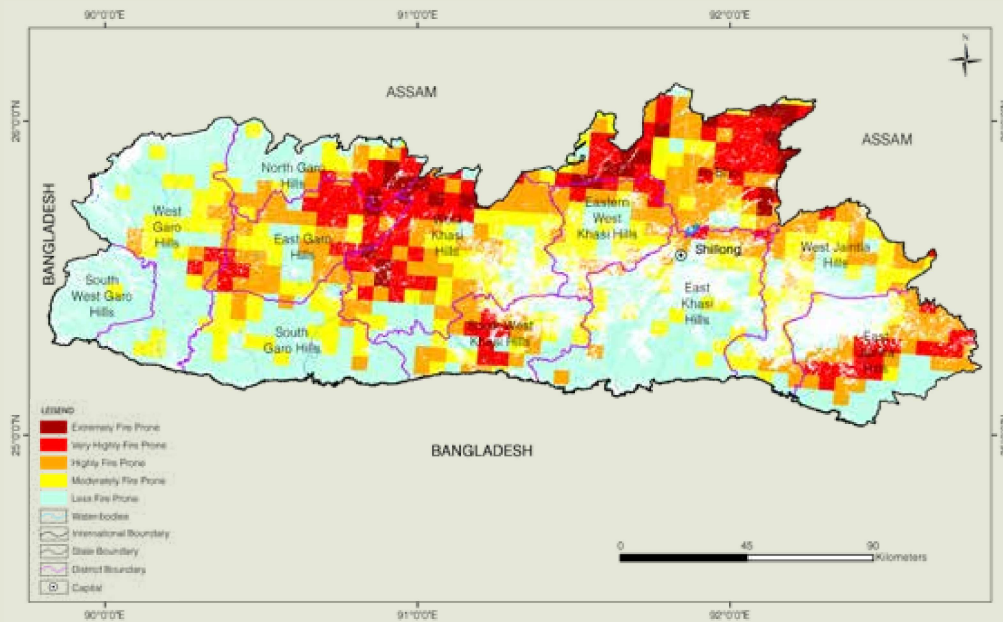


Figure 10.17.4 Fire Prone Forest Areas under Different Fire Prone Classes

10.17.6 Results Derived from NFI for Meghalaya

Table 10.17.12 Number of Trees and their Volume for Top 5 Species in RFA

Sl. No.	Species	No. of Trees (in '000)	Volume (M m ³)
1	<i>Areca catechu</i>	36,326	0.83
2	<i>Schima wallichii</i>	15,538	2.28
3	<i>Pinus kesiya</i>	5,872	1.76
4	<i>Anacardium occidentale</i>	5,391	0.76
5	<i>Macaranga species</i>	5,144	0.64

Table 10.17.13 Number of Trees and their Volume for Top 5 Species in Rural Area

Sl. No.	Species	No. of Trees (in '000)	Volume (M m ³)
1	<i>Pinus kesiya</i>	48,224	7.363
2	<i>Schima wallichii</i>	27,558	3.984
3	<i>Pinus roxburghii</i>	18,516	2.459
4	<i>Areca catechu</i>	9,991	0.213
5	<i>Castanopsis species</i>	8,367	0.923



Table 10.17.14 Number of Trees and their Volume for Top 5 Species in Urban Area

Sl. No.	Species	No. of Trees (in '000)	Volume (M m ³)
1	<i>Pinus kesiya</i>	287	0.044
2	<i>Areca catechu</i>	145	0.003
3	<i>Pinus patula</i>	93	0.01
4	<i>Pinus roxburghii</i>	54	0.01
5	<i>Schima wallichii</i>	40	0.012

Table 10.17.15 Major NTFP Species in Meghalaya

Sl. No.	Species	Habit	No. of Plants (in '000)
1	<i>Bauhinia variegata/Phanera variegata</i>	Tree	1,08,615
2	<i>Emblica officinalis/ Phyllanthus emblica</i>	Tree	62,503
3	<i>Cinnamomum tamala</i>	Tree	51,779
4	<i>Areca catechu</i>	Tree	36,326
5	<i>Careya arborea</i>	Tree	21,901
6	<i>Anacardium occidentale</i>	Tree	19,945
7	<i>Terminalia bellirica</i>	Tree	10,388
8	<i>Piper sarmentosum</i>	Shrubs	1,85,918
9	<i>Ficus Hispida</i>	Shrubs	1,48,735
10	<i>Thatch Grass</i>	Herbs	3,55,21,791

Table 10.17.16 Major Invasive Species in the State Inside the RFA in Meghalaya

Sl. No.	Species	Estimated Extent (km ²)
1	<i>Chromolaena odorata</i>	277.44
2	<i>Mikania micrantha</i>	92.91
3	<i>Lantana camara</i>	25.38
4	<i>Saccharum spontaneum</i>	13.76
5	<i>Ageratina adenophora</i>	11.18