

7.14 KERALA

7.14.1 Introduction

This most densely populated coastal State having nearly cent percent rate of literacy is situated in southernmost part of the country along Arabian Sea. The geographical area of State is 38,863 km² and lies between latitude 8°17' and 12°47' N and longitude 74°52' and 77°24' E. Physiographically, the State can be divided into coastal, midland and highland zones. The Periyar, Kalloda and Attingok are three important rivers of the State which drain into the Arabian Sea. The backwaters form an attractive and economically valuable feature of the State.

Situated in the humid tropical belt, the State is characterized by high rainfall and humidity. The rainfall varies from 1,520 to 4,075 mm, and the temperature ranges from 19.8°C to 36.7°C.

As per Census 2001, the total population of the State is 31.84 million of which the rural population constitute 74.0%. The population density is 819 persons per km². The Scheduled Tribes constitute 1.10% of the total population. The projected population of the State is 34.06 million (as projected by the Office of RGI for 2009) which constitutes 2.99% of the country's population. The livestock population as per Livestock Census 2003 is 3.48 million, which has decreased by about 40% since the Census of 1992.

Land use pattern of the State is given in Table 7.14.1.

Table 7.14.1: Land use pattern

| Land Use | Area in '000 ha | Percentage |
|--|-----------------|------------|
| Total geographical area | 3,886 | |
| Reporting area for land utilization | 3,886 | 100.00 |
| Forests | 1,082 | 27.84 |
| Not available for cultivation | 475 | 12.22 |
| Permanent pastures and other grazing lands | 0 | 0.00 |
| Land under misc. tree crops & groves | 9 | 0.23 |
| Culturable wasteland | 90 | 2.32 |
| Fallow lands other than current fallows | 47 | 1.21 |
| Current fallows | 82 | 2.11 |
| Net area sown | 2,101 | 54.07 |

Source: Land Use Statistics, Ministry of Agriculture, GOI, 2006.

7.14.2 Recorded Forest Area

The recorded forest area of the State is 11,265 km² which constitutes 28.99% of State's geographical area. Reserved Forests constitute 98.74% and Protected Forests 1.26% of the total forest area.

7.14.3 Protected Areas

Kerala has 6 National Parks and 15 Wildlife Sanctuaries covering an area of 2,379 km² which constitutes 6.12% of the State's geographical area. Sashtam kotta and Ashtamudi are wetlands of national importance located in Quilon district with an area of 3.75 km² and 32 km² respectively. A part of the Nilgiri Biosphere Reserve also falls in Kerala.

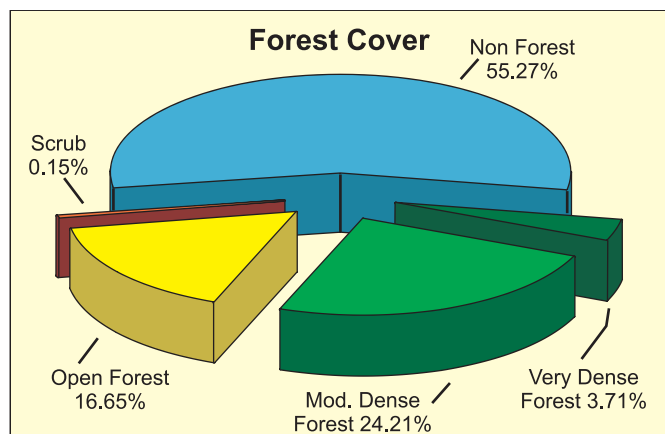
7.14.4 Joint Forest Management

JFM started in the State in 1998, about 15% forest area of the State in under JFM. There are 327 JFM committees managing 0.17 million ha of forest area. About 51,300 families are involved in JFM, of which 12,255 families belong to Scheduled Tribes.

Source: MoEF, 2005.

7.14.5 Forest Cover

The forest cover in the State, based on interpretation of satellite data of Dec 2006-Mar 2007, is 17,324 km², which is 44.58% of the State's geographical area. In terms of forest canopy density classes, the State



has 1,443 km² very dense forest, 9,410 km² moderately dense forest and 6,471 km² open forest. The distribution of forest cover of the State is shown in Fig. 7.14.

Comparison of the current forest cover (satellite data of Dec 2006 - Mar 2007) with the previous

assessment (satellite data of Dec 2004 & Feb 2005) shows a gain of 40 km² of forest cover.

The change matrix, given in Table 7.14.2, reveals that there has been an increase of 6 km² in the moderately dense forest and 34 km² in open forest.

On the basis of ground truthing by the officials of FSI, main reason for forest cover increase was change in the area of the trees outside forests. Main TOF species are coconut, arecanut and other miscellaneous species. The plantations of these species are included in the forest cover.

District wise forest cover in different canopy density classes and scrub along with the changes compared to 2005 assessment is given in the Table 7.14.3.

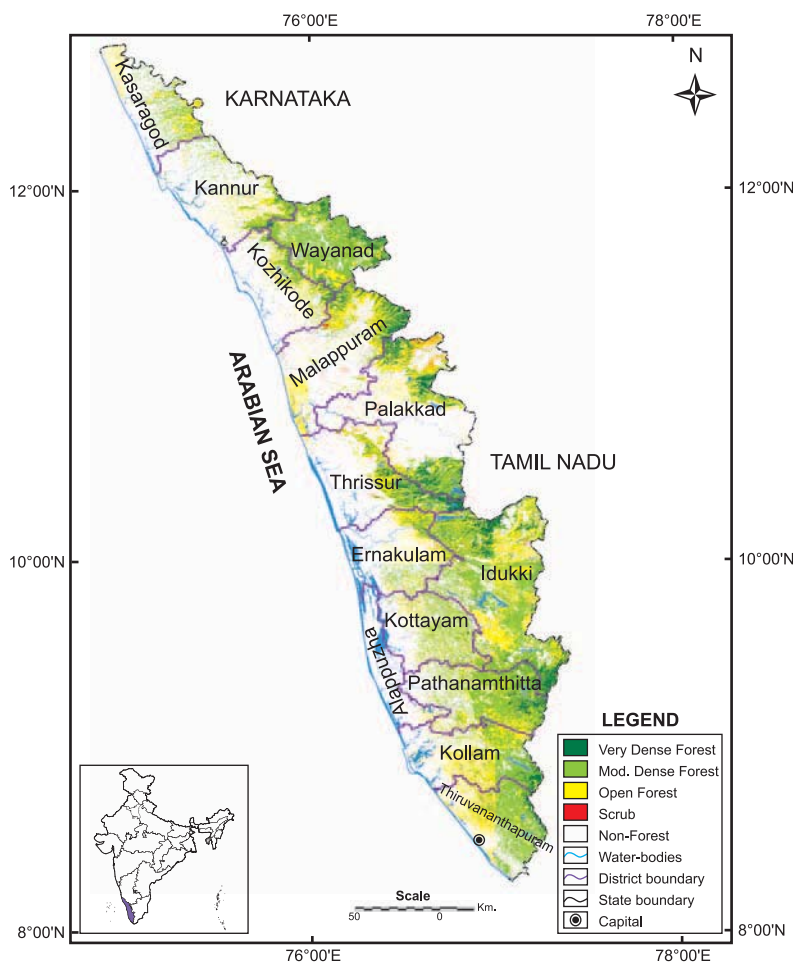


Fig 7.14 : Forest cover map of Kerala

Table 7.14.2: Forest cover change matrix

(area in km²)

| 2005 Assessment (Data of Dec 2004 & Feb 2005) | 2007 (Data of Dec 2006 - Mar 2007) | | | | | Total of 2005 |
|---|------------------------------------|--------------|--------------|-----------|---------------|---------------|
| | VDF | MDF | OF | Scrub | NF | |
| Very Dense Forest | 1,442 | 0 | 1 | 0 | 0 | 1,443 |
| Moderately Dense Forest | 0 | 9,394 | 0 | 0 | 10 | 9,404 |
| Open Forest | 1 | 5 | 6,370 | 1 | 60 | 6,437 |
| Scrub | 0 | 0 | 0 | 56 | 0 | 56 |
| Non-Forest | 0 | 11 | 100 | 1 | 21,411 | 21,523 |
| Total of 2007 | 1,443 | 9,410 | 6,471 | 58 | 21,481 | 38,863 |
| Net Change | 0 | 6 | 34 | 2 | -42 | |

Table 7.14.3: District-wise forest cover in 2007

Number of districts: 14

(area in km²)

| District | Geographical area | Very dense forest | Mod. dense forest | Open forest | Total | % of G.A. | Change* | Scrub |
|----------------------------------|-------------------|-------------------|-------------------|--------------|---------------|--------------|-----------|-----------|
| Alappuzha | 1,414 | 0 | 12 | 26 | 38 | 2.69 | 1 | 0 |
| Ernakulam TH | 2,407 | 12 | 299 | 385 | 696 | 28.92 | -2 | 1 |
| Idukki TH | 5,019 | 350 | 2,160 | 1,422 | 3,932 | 78.34 | 28 | 5 |
| Kannur TH | 2,966 | 21 | 351 | 269 | 641 | 21.61 | 0 | 0 |
| Kasaragod TH | 1,992 | 0 | 307 | 285 | 592 | 29.72 | 1 | 1 |
| Kollam TH | 2,491 | 75 | 636 | 626 | 1,337 | 53.67 | 9 | 0 |
| Kottayam | 2,203 | 13 | 546 | 336 | 895 | 40.63 | -11 | 1 |
| Kozhikode ^H | 2,344 | 32 | 288 | 271 | 591 | 25.21 | -3 | 0 |
| Malappuram TH | 3,550 | 144 | 407 | 660 | 1,211 | 34.11 | 13 | 9 |
| Palakkad TH | 4,480 | 276 | 693 | 606 | 1,575 | 35.16 | -3 | 35 |
| Pathanamthitta | 2,642 | 144 | 1,149 | 465 | 1,758 | 66.54 | 7 | 0 |
| Thiruvananthapuram TH | 2,192 | 55 | 826 | 469 | 1,350 | 61.59 | 1 | 0 |
| Thrissur | 3,032 | 181 | 389 | 363 | 933 | 30.77 | -7 | 5 |
| Wayanad TH | 2,131 | 140 | 1,347 | 288 | 1,775 | 83.29 | 6 | 1 |
| Total | 38,863 | 1,443 | 9,410 | 6,471 | 17,324 | 44.58 | 40 | 58 |

* Change compared to 2005 assessment (revised).

7.14.6 Altitude Zone wise Forest Cover

Forest cover of the State in different altitude zones is given in Table 7.14.4.

Table 7.14.4: Altitude zone wise forest cover

(area in km²)

| Altitude Zone | VDF | MDF | OF | Total |
|---------------|--------------|--------------|--------------|---------------|
| 0-500m | 216 | 4,714 | 4,254 | 9,184 |
| 500-1000m | 590 | 3,197 | 1,352 | 5,139 |
| 1000-2000m | 606 | 1,442 | 828 | 2,876 |
| 2000-3000m | 31 | 57 | 37 | 125 |
| Total | 1,443 | 9,410 | 6,471 | 17,324 |

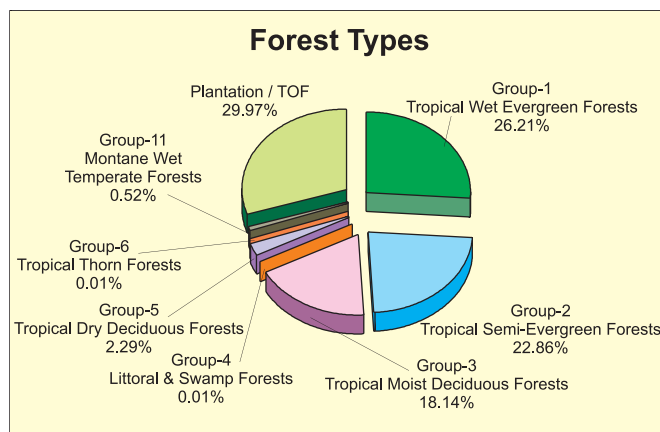
(based on SRTM Digital Elevation Model)

7.14.7 Forest Cover in different Forest Types

As per Champion & Seth Classification, the State has 13 forest types which belong to the 7 forest type groups viz Tropical Wet Evergreen, Tropical Semi Evergreen, Tropical Moist Deciduous, Littoral & Swamp, Tropical Dry Deciduous, Tropical Thorn and Montane Wet Temperate Forests. Distribution of forest cover in different forest type groups found in the State is given in the pie diagram.

7.14.8 Tree Cover

Tree cover of the State has been estimated using sample data of TOF inventory collected over a period of six years i.e. 2002-08. The estimated tree cover in the State is 2,801 km² which is 7.21% of the



geographical area of the State. Five districts of the State (Ernakulam, Idukki, Kollam, Kozhikode and Wayanad) have been inventoried. The forest and tree cover of the State is presented in the Table 7.14.5.

Table 7.14.5: Forest & tree cover

(area in km²)

| Category | Area | % of Geographical area |
|--------------------------------|---------------|------------------------|
| Tree Cover | 2,801 | 7.21 |
| Forest Cover | 17,324 | 44.58 |
| Forest & Tree Cover | 20,125 | 51.79 |