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VEGETATION ANALYSIS AND MAPPING OF PARAMBIKULAM WILDLIFE SANCTUARY

A.R.R. Menon

KERALA FOREST RESEARCH INSTITUTE
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ABSTRACT

Vegetation mapping of Parambikulam Wildlife Sanctuary was done in 1:50,000 scale, by the conventional field survey methods. Aerial photographs (black and white) in the scale 1:50,000 were used for pre-final map correction. A set of supplementary maps viz. physical, drainage, vegetation density, plantations etc. were also prepared in 1:50,000 scale. Fifty representative localities were selected and structural information of vegetation of the area were collected using census quadrate methods and included in the report as the supplementary information for reference.

1.INTRODUCTION

The geographical distribution of a specific vegetation and its spatial relationship is one of the important aspects to be considered in the long term management process, Vegetation maps provide a framework for forest resources and serve as a standard record of time for comparative study about a stand of vegetation in future, Above all it helps considerably in designing the present and future management. It becomes multipurpose and predicts further more valuable informations about ecosystem when superimposed with soil and geological maps. In addition to this, vegetation map helps in many fold, viz. in easily locating sample stands in enabling ecological and succession studies, in helping analytical research of plant communities and also in realising the status of certain extinct species and to indicate information like endemism.

The present work was undertaken under a suggestion from the Kerala Forest Department to prepare a vegetation map for Parambikulam Wildlife sanctuary. The various maps prepared under this project are available with Kerala Forest Department and Kerala Forest Research Institute in the original scale mentioned for detailed reference, and in the present report only the reduced copies are incorporated.

1.1 Study area

The Parambikulam Wildlife Sanctuary, in Palqhat District, Kerala (between 76^0 35' and 76^0 50' E. Long. and between 10^0 20' and 10^0 26' N. Lat.) with an area of about 270 sq, km. was selected for the present study, The sanctuary is situated at an elevation of about 600 m. above M,S.L. The eastern side of the sanctuary is bordered by Anaimalai Wildlife Sanctuary of Tamil Nadu and other three sides by reserve forests of Kerala, viz. Sholayar, Vazhachal,

Nelliampathy and vested forests of Nemmara. The average annual rainfall in the area is about 2000mm and temperature ranges from 22^0C to 38^0C.

2. METHODOLOGY

A brief outline of the various methods used in the present study is mentioned below.

2.1 Mapping

In the present study the conventional field survey methods are used. The study area was divided into number of smaller grids of convenient size (50 m x 50 m) and each grid was visited for vegetation survey and data collection. To achieve this goal, a number of different forest routes were identified and field trips were arranged in such a way to cover more localities of different vegetation types. Thus 50 localities were selected (Fig. 4) for detailed field sampling and vegetation data were gathered by census quadrat method (Oosting 1956). The minimum size of the quadrat was determined by species area curve method. the pattern of vegetation study include both chance distribution study and even spaced distribution study. Hence, different forest routes were selected in zig-zag manner covering all the vegetation types and quadrats of 10 m x 10 m were laid, keeping an approximate distance of 2 km in between. The boundary of each vegetation type was carefully marked and a rough map in the scale 1:50,000 was made for further study and checking using aerial photographs. The base map of the area was prepared in 1:50,000 scale from the Survey of India toposheets and the vegetation type are superimposed to get the rough vegetation map. This was further cross checked in the field. The boundary and the density status of vegetation was further checked by using 1:50,000 Black and White Aerial photographs, at Survey of India Office, Bangalore, after obtaining the necessary Goverqment sanction. The necessary corrections were incorporated

in the rough vegetation map and the scattered forest clearings and openings were identified and marked. The information pertaining to forest plantations were gathered from the divisional office records and are incorporated in the maps. In addition to the general vegetation map, a detailed plantation map was also prepared (Fig. 7) for further use.

The vegetation density map (1:50,000 scale) is one of the thematic maps prepared (Fig. 6) to supplement the study, based on Black and White Aerial photographs referred at Survey of India Office, Bangalore. Four different density classes, viz. less than 25% tree density, 25-50% tree density, 50-75% tree density and more than 75% tree density were identified and are delineated. The categorization of above mentioned density classes were arbitrarily done.

The location map (Fig. 4) prepared shows the places from where vegetation data were collected, and this along with the structural information of vegetation will give an idea of vegetation status at various places in the study area.

In addition to the above mentioned maps, a physical map (Fig.1) in 1:50,000 scale for physical features, a drainage map (Fig. 3) in 1:50,000 scale and a contour map (Fig.2) in, 1:50,000 scale (available at KFRI for reference), were also prepared for supplementary information.

2.2 Vegetation analysis

Detailed vegetation analysis was done for various synthetic and analytical features using the standard methods and formulas (see Appendix I for formulas). They are Density, Percentage Frequency, Abundance, Basal Area, Relative Density, Relative Frequency and Relative Bas1 Area of trees in the study area. The Important Value Index, Maturity Index (Pichi-Sermolli, 1948) and Continuum Index (Muller-Dombois and Ellenberg, 1974) of

vegetation was also prepared to asses the structural and functional status of the vegetation. the information thus generated was-tabulated (Table 1).

In addition to above, the following supplementary information was gathered, viz.

i. Area decline for various dams and other regions (Table 2).
ii. Plantation category in different regions (Table 3).
iii. Area categorization of Parambikulam division (Table 4).
iv. Detailed list of plantation, year, area etc. (Table 5) of each range and
v. The important marsh lands (vayals and their area (Table 69 of different region.

3. RESULTS AND DISCUSSIONS

The vegetation maps of the area in the scale 1:50,000 along with other supplementary maps viz. drainage, physical, plantations, localities etc. are the major outcome of the project. All maps are in uniform scale, so as to compare with topographic features In Survey of India toposheets. the maps in original size was supplied for field use and in this report only photo-reduced copies are included for reference. The accuracy of the naps was further cross checked using **1:50,000** black and white aerial photographs and by field visits. The vegetation status of 50 representative localities were gathered and data from 500 sample plots laid approximately 2 km apart in the representative localities were processed and supplemented in tabular form for reference. Furthermore, the supplementary information of the vegetation status is highly essential for the evaluation of subsequent habitat changes to be undergoing over a period of time. Grewia-Lagerstroemia-Terminalia forms the major tree associations in the area.

4. REFERENCES

Muler-Dombois, D. and H. Ellenberg, 1974. Aims and methods of vegetation ecology. Wiley International, New York.

Oosting, H.J. 1956. The study of plant communities. Freeman and Co. San-Francisco.

Pichi-Sermolli, R. 1948. An index for establishing the degree of maturity in plant communities. *J.* Ecol., 36: 85-90.

Table. 2-. .Area deduction

1. Submergible area (Ha.)

Parambikularn dam	2065.52
Toonakadavu dam	185.54
Peruvarippallom dam	138.60
Total	2389.66
2- Other constructions	77-18 Ha.
Grand total =	2466-84 Ha.

Table.3. Plantaion category

Range	Teak	Mixed	Eucalypts
Sungam	1865-91	30.09	81-51
Orukkomban	1732.29		
Parambikulam	1773.83		
Karimala	3475.59		
Total	8847.62	30.09	81.51

Table.4. Area categorization of Parambikularn division

Range	Nat. Forest	Plantation	Total
Sungam	6197.59 ha-	1977.51 ha-	8175.10 ha
Orukkomban	5451.41	1732.29	7183.70
Parambiku1am	3444.17	1773-83	
Karimala	3361.71	3475.59	6837.30
Grand total	18454.89	8959.22	27414.10

Table-5,- List of plantations

1- Sungam Range

Teak Plantation

Year	Area(Ha)	Year	Area(Ha)
1916	2-63	1946	93-08
1921	1-78	1947	81-75
1923	60-72	1948	84-18
1924	85-20	1949	43-71
1925	77-60	1950	49-60
1926	101.58	1951	51-60
1933	8-74	1952	41-77
1935	36-85	1953	40-47
1936	35-21	1954	59-12
1937	35-61	1955	39.25
1938	35-21	1956	59-08
1939	35-21	1957	59.08
1940	71-40	1958	41-05
1941	44-30	1959	8-09
1942	46.40	1960	61-02
1943	60.64	1961	48-56
1944	52-96	1962	31-60
1945	82-56	1967	42-20
		1980	
		1983	35.58
	Total		1865.91

continued

1. Sungam Range

Mixed Plantation

year	Area(Ha)
1961	*9-87*
1962	*10-56*
1963	9.66
Total.	30.09

1- Sungam Range

Ecalyptus plantation

Year	Area (Ha)
1969	*22-37*
1971	*20.00*
1973	*29.14*
1983	10.00
Total	81.51

Grand Total *1977.51* ha.

2- Orukkomban Range

Year	No. of blocks	Area Ha
1961	*8*	*561.26*
962	*5*	*367.03*
1963	*3*	*228.73*
1964	13	528.39
1965	1	46.88
Total	29	1732.29 ha

3. Parambikulam Range

Year	No. of blocks	Area (Ha)
1936	1.	20.63
1963	23	1963.88
1964	16	677.32
1973	1	12.00
Total.	41	1773.83 ha

4- Karimala Range

Year	No. of blocks	Area (ha)
1965	34	1448.07
1966	21	710-32
1967	25	637.70
1969	6	170.95
1971	12	483.11
1973	2	25.44
Total	100	3475.59 ha.

Table.6.. Important Marsh lands (Vayals)

1. Sungam Range

Place	Area (Ha)
Kannimara Teak Vayal	3
Seechali vayal	
Pallakkal	2
Velamarathukkal	10
1952 Regenration Area	3
Total	20 ha

2. Parambikulam Range

Kothala vayal	15
1961 R.A Blocks vayal	4
Sungam range boundary vayal	5
Bison valley vayal	5
Masonary dam vayal	3
Anakkal vayal	10
Parambikulam vayal	1
	43ha

3. Karimala Range

Kothala south vayal	4
Earthern dam vayal	
1945 R-A.(Block 83)	6
1965 R.A.(Block 85)	4
1965 R.A- (Block 82)	4
1965 R.A-(Block 76)	3
1965 R. A- (Block 75)	3
1967 R.A. (Block 134)	1
1967 R.A. (Block 144)	3
Total	29 ha

4. Orukkomban Range

Thellikkal noth vayal	3
Thellikkal south	4.5
1961 R.A. (Block 1)	2
1962 R.A.(Block 12)	5
1962 R.A, (Block 11)	3
1965 R.A- (Block 56)	2
Total	19.5 ha

Table 1. Vegetation Data
Loc. 1. Anakundu

No.	Name of species	Ab/F	Ab	D	XI	LA	RD	RF	RbA	IVI
1	Grewia tiliifolia	0.03	1.60	0.80	50	97	13.33	9.62	2.78	25.73
2	Terminalia crenulata	0.03	1.25			161	8.33	7.69	4.61	20.63
3	Xylia xylocarpa	0.02	1.00	0.70	70	127	11.66	13.46	3.64	28.76
4	Tectona grandis	*0.02*	1.17	4.70	60	127	11.66	11.54	3.64	26.84
5	cycas sp.	0.10	1.00	0.10	10	97	1.67	1.92	2.78	6.37
6	Xeromphis spinosa	0.03	1.00	0.30	50	32	5.00	5.77	0.92	11.69
7	Stereospermum colais	0.02	1.20	0.60	50	72	10.00	9.62	*2.06*	21.68
8	Pilostigma malabaricum	0.05	1.00	0.20	20	72	3.33	3.85	2.06	9.24
9	Haldina cordifolia	0.03	1.00	*0.40*	*40*	510	6.67	7.69	14.60	*28.96*
10	Mitragyna parvifolia	0.03	1.00	*0.30*	30	*448*	5.00	5.77	12.63	23.60
11	Cassia fistula	0.06	1.50	0.30	20	121	5.00	*3.65*	*3.64*	12.49
12	Terminalia paniculata	*0.03*	1.00	0.30	30	161	5.00	5.77	4.61	15.36
13	Lagerstroemia microcarpa	*0.03*	7.00	0.30	30	161	5.00	5.77	4.61	15.36
14	Ficus benghalensis	0.08	1.50	0.30	20	878	5-GO	3.85	25.14	33.99
15	Zizyphus xylopyrus	0.10	1.00	0.10	10	32	1.67	1.92	0.92	4.51
16	Schleichera oleosa	0.10	1.00	0.10	10	350	1.67	1.92	11.17	14.76
						3492	99.99	100.01	100.01	300.01

Maturity index = 32.50
Continuum index = 1921
Association: Xylia-Tectona-Grewia

Loc.2. Anakundu II

No.	Name of species	Ab/F	Ab	D	XF	BA	RD	RF	RbA	IVI
1	Lagerstroemia microcarpa	0.02	1.43	1.00	70	161	17.54	15.91	6.33	39.78
2	Tectona grandis	0.02	1.00	0.50	50	127	8.77	11.36	4.99	25.12
3	Terminalia paniculata	0.02	1.20	0.60	50	97	10.53	11.36	3.81	25.70
4	Terminalia crenulata	0.02	1.57	1.10	70	199	19.30	15.91	7.82	43.03
5	Anogeisus latifolia	0.05	1.00	0.20	20	97	3.51	4.55	3.81	11.87
6	Xylia xylocarpa	0.02	1.20	0.60	50	97	10.53	11.36	3.81	25.70
7	Haldina cordifolia	0.03	1.60	0.80	50	878	14.04	11.36	34.51	59.91
8	Cassia fistula	0.03	1.00	0.40	40	97	7.02	9.09	3.81	19.92
9	Mimusopselengi	0.05	1.00	0.20	20	719	3.51	4.55	28.26	36.32
10	Stereospermum colais	0.08	1.50	0.30	20	72	5.26	4.55	2.83	12.64
						2544	100.01	100.00	99.96	299.99

Maturity index = 44
Continuum index = 1650
Association: Lagerstroemia-Terminalia

Table 1 continued.
Loc.3 Anappady

No.	Name of species	Ab/F	Ab	D	%F	BA	RD	RF	RBA	IVI
1	Careya arborea	0.20	2.00	0.20	10	97	5.13	2.78	4.47	12.38
2	Terminalia paniculata	0.03	1.00	0.40	40	127	10.26	11.11	5.65	27.22
3	Dalbergia latifolia	0.02	1.20	0.60	50	127	15.38	13.89	5.85	35.12
4	Tectona grandis	0.03	1.00	0.30	30	161	7.69	6.33	7.41	23.43
5	Zizhyphus xylopyrus	0.10	1.00	0.10	10	18	2.56	2.78	0.83	6.17
6	Lagerstroemia microcarpa	0.05	1.00	0.20	20	241	5.13	5.56	11.10	21.79
7	Bridelia squamosa	0.10	1.00	0.10	10	97	2.56	2.78	4.47	9.81
8	Terminalia crenulata	0.03	1.00	0.40	40	127	10.26	11.11	5.65	16.54
9	Cassia fistula	0.10	1.00	0.10	10	72	2.56	2.78	3.31	8.65
10	Anogeissus latifolia	0.05	1.00	0.20	20	127	5.13	5.56	5.85	16.54
11	Piliostigma malabarica	0.10	1.00	0.10	10	97	2.56	2.78	4.47	9.81
12	Xeromphis spinosa	0.10	1.00	0.10	10	32	2.56	2.78	1.47	6.81
13	Ficus hispida	0.10	1.00	0.10	10	97	2.56	2.78	23.48	28.82
14	Bombax malabaricum	0.05	1.00	0.20	20	127	5.13	5.56	5.85	16.54
15	Vitex altissima	0.10	1.00	0.10	10	97	2.56	2.78	4.47	9.81
16	Bambusa sp.	0.03	1.25	0.50	40	18	12.82	11.11	0.83	24.76
17	Emblica officinalis	0.05	1.00	0.20	20	97	5.13	5.56	4.47	15.16
						2172	99.98	100.03	100.03	300.04

Maturity index = 21.18
Continuum index = 1772
Association: Dalbergia-Terminalia-Bambusa

Loc.4. Anappady (4000)

No.	Name of species	Ab/F	Ab	D	%F	BA	RD	RF	RBA	IVI
1	Terminalia bellirica	*0.04*	1.50	**0.60**	40	336	12.77	9.76	14.06	36.59
2	Dalbergia latifolia	**0.03**	**1.60**	*0.80*	**50**	199	17.02	12.20	**8.33**	37.55
3	Grewia tiliifolia	*0.03*	**1.00**	0.40	40	72	**8.51**	9.76	3.01	21.*28*
4	Tectona grandis	*0.03*	**1.00**	0.40	40	127	**8.51**	5.76	5.32	23-59
5	**Zizyphus** xylopyrus	0.02	1.00	0.60	*60*	16	12.77	14.63	**0.75**	28.15
6	Lagerstroemia microcarpa	0.03	1.00	*0.30*	*30*	241	**6-36**	7.32	10.09	23.79
7	Schleichera **oleosa**	0.10	1.00	0.10	**10**	127	2.13	2.44	5.32	9.89
8	Terminalia crenulata	0.10	1.00	0.16	**10**	161	2.13	2.44	6.74	11.31
9	cassia fistula	0.10	**1.00**	0.10	**10**	97	2.13	2.44	***4.06***	6.63
13	**Anogeissus** Latifolia	*0.02*	1.00	**0.50**	50	127	10.64	12.20	5.82	
1'	malabarica		200		**10**		**4.26**	*1.44*		7.71
12	Xeromphis spinosa	**0.10**	1.00	0.13	**10**	18	2.13	2.44	b.75	**5.32**
13	Ficus benghalensis	**3.13**	1.*00*	0.10	**13**	44s	2.13	2.44	**18.75**	*23.32*
14	Bombax malabaricum	**1.10**	**1.00**	**0.10**	**10**	127	2.13	2.44	**5.32**	9.89
15	**Emblica** officinlis	**0.10**	1.00	**0.10**	**10**	**50**	2.13	2.44	2.39	**6.68**
16	Mitragyna parvi **fol ia**	3.13	**1.00**	0.10	**1o**	**161**	2.13	**2.44**	6.74	11.31
17	Bambusa **sp.**	**0.10**	**1.LL**	0.13	**10**	**8**	2.13	2.44	**0.33**	**6.90**
						2389	100.03	100.03	99.99	300.05

Maturity index = 24.12
Continuum index = 1[illegible]2
Association: Zizyphus-Anogeissus-Dalbergia

Loc.5 Bhagapalloo

No.	Name of species	Ab/F	Ab	D	%F	BA	RD	RF	RBA	IVI
1	Tectona grandis	0.03	1.40	0.70	50	161	22.58	22.73	26.66	71.97
2	Terminalia crenulata	0.02	1.20	0.60	50	127	19.35	22.73	21.03	63.11
3	Zizyphus xylopyrus	0.10	2.00	0.40	20	32	12.90	9.09	5.30	27.29
4	Lagerstroemia microcarpa	0.04	1.33	0.40	30	97	12.90	13.64	16.36	42.60
5	Cridelia squamosa	0.05	1.00	0.20	20	72	6.45	9.09	11.92	27.46
6	Cycus sp.	0.10	1.00	0.10	10	97	3.23	4.55	16.06	23.84
7	Bambusa sp.	0.04	1.75	0.70	40	18	22.58	18.13	2.98	43.74
						604	99.99	100.01	100.01	300.01

Maturity index = 31.43
Continuum index = 1755
Association: Terminalia-Tectona-Bambusa

Loc.6. Chandikavala

No.	Name of species	Ab/F	Ab	D	%F	BA	RD	RF	RBA	IVI
1	Vatteria indica	0.02	1.43	1.00	70	1244	29.41	24.14	62.54	116.09
2	Mallotus philipensis	0.02	1.20	0.60	50	161	17.65	17.24	8.09	42.98
3	Polyalthia fragrans	0.02	1.17	0.70	60	161	20.59	20.69	8.09	49.37
4	Myristica dactyloides	0.03	1.00	0.40	40	199	11.76	13.79	10.01	35.56
5	Cinnamomum zeylanicum	0.03	1.00	0.30	30	127	8.82	10.34	6.39	25.55
6	Baccaurie courtallensis	0.03	1.00	0.40	40	97	11.76	13.79	4.88	30.43
						1989	99.99	99.99	100.00	299.99

Continuum index = 1522
Maturity index = 43.33
Association: Vatteria-Polyalthia

Loc.7 Elathodu(New Bungalow)

No.	Name of species	Ab/F	Ab	D	%F	BA	RD	RF	RBA	IVI
1	Terminalia bellirica	0.02	1.17	0.70	60	390	10.77	11.32	17.43	39.52
2	Wrightia tinctoria	0.03	1.25	0.50	40	50	7.69	7.55	2.23	17.47
3	Zizhyphus xylopyrus	0.03	1.00	0.40	40	32	6.15	7.55	1.43	15.13
4	Butea superba	0.02	1.20	0.60	50	50	9.23	9.43	2.23	20.89
5	Lagerstroemia microcarpa	0.02	1.43	1.00	70	161	15.36	13.21	7.19	35.76
6	Cassia fistula	0.05	1.00	0.20	50	97	3.08	3.77	4.33	11.18
7	Sterospermum colais	0.10	1.00	0.10	10	161	1.54	1.89	7.19	10.62
8	Bambusa sp.	0.07	2.00	0.60	30	18	9.23	5.66	0.80	15.69
9	Albizia procera	0.03	1.00	0.30	30	127	4.62	5.66	5.67	15.95
10	Grewia tiliifolia	0.02	1.00	0.50	50	127	7.69	9.43	5.67	22.79
11	Hitragyna parvifolia	0.03	1.00	0.80	50	199	12.31	9.43	6.89	30.63
12	Emblica officinalis	0.03	1.00	0.30	30	97	4.62	5.66	4.33	14.61
13	Careya arborea	0.05	1.00	0.20	20	97	3.08	3.77	4.33	11.18
14	Piliostigma malabarica	0.10	1.00	0.10	10	72	1.54	1.89	3.22	6.65
15	Xeromphis spinosa	0.10	1.00	0.10	10	50	1.54	1.89	2.23	5.66
16	Melia azaderach	0.10	1.00	0.10	10	510	1.54	1.89	22.79	26.22
						2238	100.01	100.00	99.97	299.98

Maturity index = 31.13
Continuum index = 1735
Association: Lagerstroemia-Terminalia-Grewia

Loc.8. Elathodu (Old Bungalow)

No.	Name of species	Ab/F	Ab	D	%F	BA	RD	RF	RBA	IVI
1	Cordia dichotoma	0.02	1.00	0.50	50	72	9.62	11.11	3.44	24.17
2	Bambusa sp.	0.03	1.25	0.50	40	32	9.62	8.89	1.53	20.04
3	Melia azaderach	0.03	1.00	0.30	30	510	5.77	6.67	24.33	36.77
4	Wrightia tinctoria	0.03	1.00	0.40	40	127	7.69	8.89	6.06	22.64
5	Stereospermum colais	0.08	1.50	0.30	20	161	5.77	4.44	7.68	17.89
6	Lagerstroemia microcarpa	0.02	1.00	0.60	60	241	11.54	13.33	11.50	36.37
7	Tectona grandis	0.02	1.20	0.60	50	199	11.54	11.11	9.49	32.14
8	Emblica officinalis	0.03	1.00	0.30	30	127	5.77	6.67	6.06	18.50
9	Xeromphis spinosa	0.03	1.00	0.30	30	50	5.77	6.67	2.39	14.83
10	Zizyphus xylopyrus	0.05	2.00	0.80	40	18	15.38	8.89	0.86	25.13
11	Mimusops elengi	0.10	1.00	0.10	10	72	1.92	2.22	3.44	7.58
12	Miliusa tomentosa	0.05	1.00	0.20	20	127	3.85	4.44	6.06	14.35
13	Bombax malabaricum	0.05	1.00	0.20	20	199	3.85	4.44	9.49	17.78
14	Butea monosperma	0.10	1.00	0.10	10	161	1.92	2.22	7.68	11.82
						2096	100.01	99.99	100.01	300.01

Maturity index = 32.14
Continuum index = 1913
Association: Lagerstroemia-Tectona-Zizyphus

Loc.9. Kachithodu

No.	Name of species	Ab/F	Ab	D	%F	BA	RD	RF	RBA	IVI
1	Terminalia crenulata	0.02	1.20	0.60	50	161	12.24	12.20	8.78	33.22
2	Emblica officinalis	0.05	1.00	0.20	20	97	4.08	4.88	5.29	14.25
3	Tectona grandis	0.02	1.00	0.50	50	127	10.20	12.20	6.92	29.32
4	Lagerstroemia microcarpa	0.04	1.75	0.70	40	286	14.29	9.76	15.59	39.64
5	Grewia tiliifolia	0.03	1.00	0.30	30	127	6.12	7.32	6.92	20.36
6	Dillenia pentagyna	0.03	1.00	0.40	40	241	8.16	9.76	13.14	31.06
7	Zizyphus xylopyrus	0.08	1.50	0.30	20	32	6.12	4.88	1.74	12.74
8	Piliostigma malabaricum	0.03	1.00	0.30	30	72	6.12	7.32	3.93	17.37
9	Cassia fistula	0.03	1.00	0.30	30	97	6.12	7.32	5.29	18.73
10	Cordia dichotoma	0.20	2.00	0.20	10	72	4.08	2.44	3.93	10.45
11	Wrightia tinctoria	0.04	1.33	0.40	30	50	8.16	7.32	2.73	18.21
12	Careya arborea	0.10	1.00	0.10	10	72	2.04	2.44	3.93	8.41
13	Gardenia turgida	0.04	1.33	0.40	30	32	8.16	7.32	1.74	17.22
14	Butea monosperma	0.10	1.00	0.10	10	127	2.04	2.44	6.92	11.40
15	Hydnocarpus laurifolia	0.10	1.00	0.10	10	241	2.04	2.44	13.14	17.62
						1634	99.97	100.04	99.99	300.00

Maturity index = 27.33
Continuum index = 1586
Association; Tectona-Terminalia-Lagerstroemia

Loc. 10 Kachithodu II

No.	Name of species	Ab/F	Ab	D	%F	BA	RD	RF	RBA	IVI
1	Anogeissus latifolia	0.02	1.00	0.50	50	241	8.33	9.43	6.90	24.66
2	Ziziphus xylopyrus	0.03	1.25	0.50	40	18	6.33	7.55	0.52	16.40
3	Xylia xylocarpa	0.02	1.57	0.10	70	127	16.33	13.21	3.64	33.16
4	Mitragyna parvifolia	0.03	1.00	0.40	40	510	6.67	7.55	14.61	28.83
5	Terminalia crenulata	0.10	1.00	0.10	10	336	1.67	1.89	9.62	13.18
6	Dillenia pentagyna	0.03	1.00	0.30	30	241	5.00	5.66	6.90	17.56
7	Bambusa sp.	0.02	1.20	0.60	50	18	10.00	9.43	0.52	19.95
8	Careya arborea	0.03	1.00	0.40	40	72	6.67	7.55	2.06	16.28
9	Cordia dichotoma	0.03	1.00	0.30	30	72	5.00	5.66	2.06	12.72
10	Cassia fistula	0.05	1.00	0.20	20	97	3.33	3.77	2.78	9.88
11	Terminalia bellerica	0.05	1.00	0.20	20	1147	3.33	3.77	32.86	39.96
12	Gardenia turgida	0.05	1.00	0.20	20	50	3.33	3.77	1.43	8.53
13	Emblica officinalis	0.03	1.00	0.30	30	127	5.00	5.66	3.64	14.30
14	Dalbergia latifolia	0.05	1.00	0.20	20	127	3.33	3.77	3.64	10.74
15	Terminalia paniculata	0.03	1.00	0.40	40	461	6.67	7.55	4.61	18.78
16	Butea monosperma	0.10	1.00	0.10	10	97	1.67	1.89	2.78	6.34
17	Wrightia tinctoria	0.20	2.00	0.20	10	50	3.33	1.89	1.43	6.65
						3491	99.99	100.00	100.00	299.99

Maturity Index = 31.18 Continuum Index = 1580
Association: Xylia-Anogeissus-Lambusa

Loc.11. Kamathalamudi

No.	Name of species	Ab/F	Ab	D	%F	BA	RD	RF	RBA	IVI
1	Terminalia crenulata	0.02	1.38	1.10	80	199	19.30	16.67	20.16	56.15
2	Tectona grandis	0.02	1.00	0.50	50	161	8.77	10.42	16.33	35.52
3	Cassia fistula	0.01	1.00	0.70	70	97	12.28	14.58	9.84	36.70
4	Dalbergia latifolia	0.02	1.40	0.70	50	97	12.28	10.42	9.84	32.54
5	Terminalia paniculata	0.02	1.00	0.50	50	199	8.77	10.42	20.16	39.37
6	Ziziphus xylopyrus	0.02	1.17	0.70	60	32	12.28	12.50	3.25	28.03
7	Gardenia turgida	0.02	1.38	1.10	80	32	19.30	16.67	3.25	39.22
8	Lagerstroemia microcarpa	0.03	1.00	0.30	30	97	5.26	6.25	9.84	21.35
9	Anogeissus latifolia	0.10	1.00	0.10	10	72	1.75	2.08	7.30	11.13
						986	99.99	100.01	100.01	300.01

Maturity Index = 53.33
Continuum Index = 1696
Association: Terminalia-Cassia-Gardenia

Loc.12 Kariamshola

No.	Name of species	Ab/F	Ab	D	%F	BA	RD	RF	RBA	IVI
1	Tectona grandis	0.03	1.50	0.90	60	161	16.07	13.33	9.19	38.59
2	Clerodendrum infortunatum	0.10	1.00	0.10	10	97	1.79	2.22	5.54	9.55
3	Callicarpa tomentosa	0.10	1.00	0.10	10	127	1.79	2.22	7.25	11.26
4	Miliusa tomentosa	0.03	1.00	0.40	40	97	7.14	8.89	5.54	21.57
5	Xeromphis spinosa	0.04	1.33	0.40	30	32	7.14	6.67	1.83	15.64
6	Bambusa sp.	0.03	1.60	0.80	50	18	14.29	11.11	1.03	26.43
7	Terminalia paniculata	0.03	1.20	0.60	50	241	10.71	11.11	13.76	35.58
8	Lagerstroemia microcarpa	0.02	1.00	0.50	50	161	8.93	11.11	9.19	29.23
9	Dillenia pentagyna	0.02	1.20	0.60	50	161	10.71	11.11	9.19	31.01
10	Cassia fistula	0.05	1.00	0.20	20	97	3.57	4.44	5.54	13.55
11	Stereospermum colais	0.03	1.00	0.30	30	97	5.36	6.67	5.54	17.57
12	Bridelia squamosa	0.04	1.33	0.40	30	127	7.14	6.67	7.25	21.06
13	Schleichera oleosa	0.08	1.50	0.30	20	336	5.36	4.44	19.18	28.98
						1752	100.00	99.99	100.03	300.01

Maturity index = 34.62
Continuum index = 1860
Association: Tectona-Terminalia-Dillenia

Loc. 13. Kariamshole II

No.	Name of species	Ab/F	Ab	D	%F	BA	RD	RF	RBA	IVI
1	Hopea parviflora	0.03	1.00	0.40	40	1053	12.12	14.29	23.21	49.62
2	Diospyros microphylla	0.04	1.75	0.70	40	336	12.12	14.29	7.41	42.91
3	Mesua ferrea	0.03	1.00	0.40	40	964	12.12	14.29	21.25	47.66
4	Mallotus philipensis	0.05	1.00	0.20	20	127	6.06	7.14	2.80	16.00
5	Schleichera oleosa	0.10	1.00	0.10	10	576	3.03	3.57	12.70	19.30
6	Artocarpus hirsuta	0.05	1.00	0.20	20	336	6.06	7.14	7.41	20.61
7	Garcinia malabarica	0.05	1.00	0.20	20	97	6.06	7.14	2.14	15.34
8	Polyalthia fragrens	0.05	1.00	0.20	20	97	6.06	7.14	2.14	15.34
9	Calamus sp.	0.10	2.00	0.20	10	8	6.06	3.57	0.18	9.81
10	Spondias mangifera	0.10	2.00	0.20	10	97	6.06	3.57	2.14	11.77
11	Dysoxylon malabaricum	0.05	1.00	0.20	20	127	6.06	7.14	2.80	16.00
12	Holigarna arnottiana	0.03	1.00	0.30	30	719	9.09	10.71	15.85	35.65
						4537	100.00	99.99	100.03	300.02

Maturity index = 25.33
Continuum index = 1875
Association: Mesua-Hopea-Diospyros

Loc.14. Kariamshola III

No.	Name of species	Ab/f	Ab	D	XF	BA	RD	RF	RBA	IVI
1	Mesuaferrca	0.03	1.25	0.50	40	390	9.62	9.09	6.76	25.47
2	Hopea parvifLora	0.03	1.00	0.30	30	645	5.77	6.82	11.16	23.77
3	llydnocarpus Leurifolius	0.02	1.33	0.80	60	161	15.36	13.64	2.79	31.81
4	Schleichera oleosa	0.05	1.00	0.20	20	127	3.85	4.55	2.20	10.60
5	Buchanania lanzan	0.03	1.00	0.30	30	97	5.77	6.82	1.68	14.27
6	Eugenia jambolensis	0.10	1.00	0.10	10	127	1.92	2.27	2.20	6.39
7	Diospyros microphylLa	0.10	1.00	0.10	10	97	1.92	2.27	1.68	5.87
8	vitex altissima	0.10	1.00	0.10	10	127	1.92	2.27	2.20	6.39
9	Cinnamomum zeylanicum	0.04	1.33	0.40	30	199	7.69	6.82	3.45	17.96
10	Tectona grandis	0.05	1.00	0.20	20	97	3.85	4.55	1.68	10.08
11	Lagerstroemia microcarpa	0.03	1.00	0.40	40	161	7.69	9.09	2.79	19.57
12	Artocarpus hirsutus	0.20	2.00	0.20	10	964	3.85	2.27	16.71	22.83
13	Myristica dactyloides	0.08	1.50	0.30	20	336	5.77	4.55	5.82	16.14
14	Cullenia excelsa	0.03	1.00	0.30	30	1147	5.77	6.82	19.88	32.47
15	Calamus sp.	0.10	2.00	0.40	20	8	7.69	4.55	0.14	12.38
16	Spondius mangifera	0.10	1.00	0.10	10	97	1.92	2.27	1.68	5.87
17	Holigarna arnottiana	0.05	1.00	0.20	20	576	3.85	4.55	9.98	18.38
18	Callicarpa sp.	0.05	1.00	0.20	20	127	3.85	4.55	2.20	10.60
19	Mangitrra lndica	0.10	1.00	0.10	10	286	1.92	2.27	4.96	9.15
						5769	100.00	100.02	99.96	300.00

Maturity index = 23.16
Continuum inoex = 1736
Association:Hydnocarpus-Mesua-Lagerstroemia

Loc. 15 Keerappady

No.	Name of species	Ab/F	Ab	D	%F	BA	RD	RF	RBA	IVI
1	Tectona. grandis	0.02	1.33	0.80	60	161	16.33	15.36	7.69	39.40
2	Sterculia urens	0.03	1.00	0.40	40	127	t.16	10.26	6.07	24.49
3	Haldina cordifolia	0.02	1.20	0.60	50	964	12.24	12.82	46.06	71.12
4	Terminalia crenulata	0.03	1.40	0.70	50	390	14.29	12.82	18.63	45 .74
5	Milusa tomentosa	0.03	1.00	0.40	40	127	8.16	10.26	6.07	24.49
6	Dalbergia latifolia	0.05	1.00	0.20	20	127	4.08	5.13	6.07	15.26
7	Grewia tiliifolia	0.02	1-33	0.80	60	161	16.33	15.38	7.69	39.40
8	Acatia lntsia	0.03	1.25	0.50	40	18	10.20	10.26	0.86	21.32
9	Dambusa sp.	0.06	1.67	0.50	30	18	10.20	7.69	0.86	lb.75
						2093	99.99	100.00	100.00	299.99

Maturity index = 43.33
Continuum index = 1554
Association: Tectona-Grewia-Haldina

Loc.16 Kottiyali

No.	Name of species	Ab/F	Ab	b	% F	BA	RD	CF	RBA	IVI
1	xylia xylocarpa	0.02	1.57	1.10	70	127	39.29	33.33	18.43	91.05
2	Cassia fistula	0.05	1.00	0.20	20	97	7.14	9.52	14.08	30.74
3	Terminalia crcnulata	0.02	1.00	0.50	50	241	17.86	23.61	34.98	76.65
4	Dalbergia Latifolia	0.05	1.00	0.20	20	127	7.14	9.52	18.43	35.09
5	Grewia tiliifolia	0.03	1.60	0.80	50	97	28.57	23.81	14.08	66.46
						689	100.00	99.99	100.00	299.99

Maturity index = 42
Continuum Index = 1988
Association: Xylia-Grewia-Terminalia

Table 1 contd.
Loc.Muthuvarachal

No.	Name of species	Ab/F	Ab	D	%F	BA	RD	RF	RBA	IVI
1	Lagerstroemia mlcrocarpa	0.02	1.71	1.20	70	97	36.36	25.93	7.64	69.93
2	Tectona grandis	0.03	1.00	0.60	60	127	18.18	22.22	10.01	50.41
3	Terminalia crcnulata	0.03	1.00	0.40	40	161	12.12	14.81	12.69	39.62
4	Bombax malabaricum	0.03	1.00	0.30	30	97	9.09	11.11	*7.64*	27.84
5	Pterocarpus marsupium	0.05	1.00	0.20	20	127	6.06	7.41	10.01	23.48
6	Bridelia squamosa	0.10	1.00	0.10.	10	161	3.03	3.70	12.69	19.42
7	Grewia tiliifolia	0.03	1.50	0.30	20	161	9.09	7.41	12.69	29.19
8	Garuga pinnata	0.10	1.00	0.10	10	241	3.03	3.70	18.99	25.72
9	tlerodendron	0.10	1.00	0.10	10	97	3.03	3.70	7.64	14.37
						1269	99.99	99.99	100.00	299.98

Maturity index = 30
Continuum Index = 1579
Association: Lagerstormia-Tectona-Terminalia

Loc. 18 Pallikkallu

NO.	Name of. species	Ab/F	Ab	D	%F	*BA*	RD	RF	RBA	IVI
1	Terminalia crcnulata	0.02	1-63	1-30	80	336	15.66	12-31	14.57	42.24
2	Tettona grandis	0.02	1.14	0.80	70	161	9.64	10.77	6.98	27.39
3	xylia xylocarpa	0.02	1-33	*0-80*	60	127	9-64	9-23	5.51	24.38
4	Acatia intsia	0.02	1.33	0.80	60	32	9.64	9.23	1.39	20.26
5	Bambusa sp.	0.02	1.20	0.60	50	32	7.23	7.69	1.39	16.31
6	Lagerstroemia microcarpa	0.02	1.00	0.60	60	161	7.23	9.23	6.98	23.44
7	Zizyphus xylopurus	0.02	1.33	0.80	60	32	9.64	9.23	1.39	20.26
8	Mallotus parviflora	0.10	1.00	0.10	10	72	1.20	1.54	3.12	*5.86*
9	Mitragyna parviflora	0.05	1.00	0.20	20	796	2.41	3.08	34.52	40.01
10	cassia fistula	0.02	1.00	0.50	50	127	6.02	7.69	5.51	19.22
11	Dillenia pentagyna	0.05	1.00	0.20	20	199	2.41	3.08	8.63	14.12
12	Cycas sp.	0.05	1.00	0.20	20	72	2.41	3.08	3.12	8.61
13	Grewa tiliifolia	0.03	1.67	1.00	60	127	12.05	9.23	5.51	27.79
14	Gardenia turgida	0.04	1.33	0.40	30	32	4.81	4.62	1.39	10.83
						2306	100.00	100.01	100.01	300.02

Maturity Index = 46.43
Continuum Index = 1808
Association: Terminalia-Tectona-Xylia

Log.19 *Pandippara*

No.	Name of species	Ab/F	Ab	D	%F	*6k*	RD	RF	RBA	IVI
1	Careya arborea	0.03	1.00	*0.30*	30	97	6.00	6.98	2.80	15.78
2	Terminalia paniculata	0.03	1.25	0.50	40	*390*	10.00	9.30	11.24	30.54
3	Terninalia crenulata	0.02	1.00	0.50	50	336	10.00	11.63	9.69	31.32
4	Xylia xylocarpa	0.03	1.25	0.50	40	161	10.00	9.30	4.04	23.94
5	Lagerstroemia microcar'pa	0.03	1.00	0.30	30	199	6.00	6.96	5.74	18.72
6	Pteroarpus marsupium	0.05	1.00	0.20	20	127	4.00	4.65	*3.66*	12.31
7	Dillenia pentagyna	0.03	1.25	*0.50*	40	241	10.00	9.30	6.95	26.25
6	Diospyros sp.	0.10	1.00	0.10	10	97	2.00	2.33	2.80	7-13
9	Dalbergia Latifolia	0.03	1.00	0.40	40	97	6.00	9.30	2.80	20.10
10	Schleichera oleosa	0.05	1.00	0.20	20	390	4.00	4.65	11-24	19.89
11	Bambusa sp.	0.04	1.50	0.60	40	18	12.00	9.30	0.52	21-62
12	Emblica officinalis	0.03	1.00	0.30	30	72	6.00	*6.96*	2.08	15.06
13	Anogeisus latifolia	0.05	1.50	0.30	20	97	*6-00*	4.65	2.80	13.45
14	Ficus religiosa	0.03	1.50	0.30	20	1147	6.00	4.65	33.06	43.71
						3469	100.00	100.00	100.02	300.02

Maturity Index = 3C.71
Continuum Index = 1642
Association: Terminalia-Xylia-Dalbergia

Loc. *20* Parambikulam

No.	Name of species	Ab/F	Ab	D	%F	bA	RD	RF	RBA	IVI
1	Dillenia pentagyna	0.02	1.17	0.71	60	510	12.20	13.33	21.98	47.59
2	cassia fistula	0.03	1.00	0.30	30	97	5.26	6.67	4.18	16.11
3	Stereospermum colais	0.05	1.00	b.20	20	161	3.51	4.44	6.94	14.89
4	zizyphus xylopyrus	0.04	1.50	0.60	40	50	10.53	8.89	2.16	21.58
5	Dalbergia laifolia	0.03	1.00	0.30	30	127	5.26	6.67	5.47	17.40
6	Bambusa Sp.	0.04	2.20	1.10	50	32	19.30	11.11	1.36	31.79
7	Terminalia crenulata	C.02	1.33	0.80	60	161	14.04	13.33	6.94	34.31
8	Anogeisus latifolia	0.02	1.20	0.60	50	127	10.53	11.11	5.47	27.11
9	Acatia *intria*	0.03	1-00	0.36	30	18	5.28	6.67	0.78	12.71
10	Grewia tiliifolia	0.03	1.00	0.40	40	390	7.02	8.89	16.81	32.72
11	Tectona grandis	0.10	1.00	0.10	10	199	1.75	2.22	6.58	12.55
12	Terminalia bellirica	0.03	1.00	0.30	30	448	5.26	6.67	19.31	31.24
						2320	100.00	100.00	100.00	300.00

Maturity index = *37.5*
Continuum index = 1598
Association: **Dillenia-Terminalia-Bambusa**

Loc.21. Parambikulam II

ho.	Name of species	Ab/F	Ab	D	%F	BA	RD	RF	RBA	IVI
1	Myristica dactyloides	0.04	1.33	0.40	30	336	10.53	10.71	26.33	47.57
2	Polyalthia fragrans	0.03	1.50	0.90	60	161	23.66	21.43	12.62	57.73
3	Holigarna arnottiana	0.03	1.00	0.30	30	127	7.89	10.71	9.95	28.55
4	Calamus sp.	0.03	1.25	0.50	40	8	13.16	14.29	0.63	28.08
5	Mallotus philipensis	0.02	1.63	1.30	80	127	34.21	26.57	9.95	72.73
6	Schleichera oleosa	C.03	1.00	0.30	30	390	7.89	10.71	30.56	49.16
7	Macaranga peltsta	0.10	1.00	0.10	10	127	2.63	3.57	9.95	16.15
						1276	99.99	99.99	99.99	299.97

Maturity index = *40*
Continuum index = *1956*
Association: Mallotus-Polyalthia

Loc.22 **Peruvarippallom**

No.	Came of species	Ab/F	Ab	D	XF	6A	RD	RF	RBA	IVI
1	Terminalia paniculata	0.03	1.25	0.50	40	199	10.42	9.09	20.33	39.84
2	Xylia xylocarpa	0.01	1.13	C.90	60	127	18.75	18.18	12.97	49.90
3	Lagerstroemia microcarpa	0.02	1.00	G.60	60	127	12.50	13.64	12.97	39.11
4	Eutea superba	0.03	1.50	0.30	20	18	6.25	4.55	1.84	12.64
5	Zizyphus xylopyrus	0.03	1.00	0.40	40	18	8-33	9.09	1.64	19.26
6	Anogeissus Latifolia	0.05	1.00	0.20	20	72	4.17	4.55	7.35	16.07
7	Tectona Grandis	0.02	1.17	C.70	60	127	14.58	13.64	12.97	41.19
8	cassia fistuls	0.03	1.00	G.40	40	72	6.33	9.09	7.35	24.77
5	Wrightia tinctoria	0.02	1.00	0.50	50	50	10.42	11.36	5.10	26.69
10	Clestanthus sp.	0.05	1.00	0.20	20	72	4.17	4.55	7.35	16.07
11	Erythrina indica	0.10	1.00	0.10	10	97	-2.06	2.27	5.91	14.26
						979	100.00	100.01	99.99	300.00

Maturity index = *40*
Continuum index = *1764*
Association: **xylia-Tectona-Lagerstroemia**

Loc.23 Pezhamala

No.	Name of species	Ab/F	kb	D	%F	BA	RD	RF	RBA	IVI
1	Tectona grandis	0.03	1.60	0.80	**50**	127	32.00	23.81	13.23	69.04
2	Terminalia crenulata	**0.03**	1.00	0.40	40	97	16-00	19-05	10.10	45-15
3	Careys arborea	0.03	1.00	0.30	30	72	12.00	14.29	7.50	33.79,
4	Cassia fistula	0.10	1.00	0.10	10	97	4.00	4.76	10.10	18.66
5	Lagerstroemia microcarpa	0.03	1.00	**0.30**	30	199	12.00	14.29	20.73	47.02
6	Terminalia bellirica	0.03	1.25	**0.50**	40	241	20.00	19.05	25.10	64.15
7	Emblica officinalis	0.10	1.00	0.10	10	127	4.00	4.71	13.23	21.99
						960	100.00	100.01	99.99	300.00

Maturity Index = **30**
Continuum Index = 2027
Association: **Tectona-Terminalia-Lagerstroemia**

Loc. **24-** Pillakalchola

No.	Name of species	Ab/F	Ab	D	%F	BA	RD	RF	RBA	IVI
1	Di llenia pentagyna	0.02	1.57	1.10	70	336	15.28	12.73	15.43	43.44
2	Terminalia crenulata	0.02	1.29	0.90	70	161	12.50	12.73	7.39	32.62
3	Lagerstroemia microcarpa	0.02	1.14	**0.80**	**70**	127	11.11	12.73	5.83	29.67
4	Bambusa **sp.**	0.03	2.14	1.50	70	32	20.83	12.73	1.47	**35.03**
5	Dalbergia Latifolia	0.02	1.00	0.50	**50**	127	6.94	9.09	5.83	21.86
6	ficus benghalensis	0.03	1.00	0.30	30	796	4.17	5.45	36.55	46.17
7	Emblica **officinalis**	**0.05**	1.00	0.20	20	161	2.78	3.64	7.39	13.81
6	Nilusa tomentosa	0.02	1.14	**0.80**	70	241	11.11	12.73	11.07	34.91
9	tutea superba	0.03	1.25	**0.50**	40	50	6-94	7.27	**2.30**	16.51
10	Cassia fistula	**0.05**	1.00	0.20	20	***97***	2.78	3.64	4.45	10.67
11	Zizyphus zeylanica	0.03	1.00	0.40	40	**50**	**5.56**	7.27	2.30	15.13
						2176	100.00	100.01	100.01	300.02

Maturity index = 50
Cont**i**nuum Index = 1967
Associat **ion:** Dillenia-Termi nalia-Bambusa

Loc.25 Pillakkalpara

No.	Name of species	Ab/f	*Ab*	D	% f	*BA*	RD	RF	*KBA*	IVI
1	Terminalia crenulata	0.09	6.44	1.50	90	161	20.00	14.75	6.71	41.46
2	Gardenia turgida	0.02	1.00	0.60	60	***50***	**1.00**	9.84	2.09	19.93
3	Cassia fistula	0.03	1.00	0.40	40	97	5.33	6.56	4.05	15.94
4	Lagerstroemia microcarpa	0.02	1.50	1.20	**80**	161	16.00	13.11	6.71	**35.82**
5	Carcya arborea	0.05	1.00	**0.20**	20	127	2.67	3.26	5.30	11.25
6	stereospermum colais	0.10	1.00	0.10	10	127	1.33	1.64	5.30	8.27
7	cycas **sp.**	***G.05***	1-00	**0.20**	20	199	2.67	3.28	**8.30**	14.25
8	butea superba	0.03	1.25	**0.56**	40	32	6.67	***6.56***	1.33	14.56
9	Pterocarpus marsupium	**0.05**	1.00	0.20	20	127	2.67	3.28	**5.30**	11.25
10	Zizyphus xylopyrus	0.02	1.14	0.81;	70	161	19.67	11.48	6.71	28.80
11	Bridelia squamosa	0.05	1.00	**0.20**	20	127	2.67	3.28	5.39	11.25
12	Macarange peltrta	**0.03**	1.00	0.30	30	390	***4.00***	***4.92***	16.26	25.18
13	***Cordia*** dchotoma	0.04	1.33	***0.40***	30	97	**5.33**	4.92	4.05	14.30
14	Acatia intsia	**0.03**	1.25	**0.50**	***40***	**32**	6.67	5.56	1.33	14.56
15	Dillenia pentagyna	0.03	1.00	***0.40***	40	510	**5.33**	6.56	21.27	33.16
						2398	100.01	100.02	100.01	306.04

Maturity Index = 40.67
Contlnuum Index = 1640
Association: **Terminalia-Lagerstroemia-Zizyphus**

Loc.26 Pillakkal para II

No.	Name of species	Ab/F	Ab	D	%F	BA	RD	hf	RBA	IVI
1	Terminalia crenulata	0.01	1.22	1.10	90	241	25.58	25.00	19.30	69.88
2	Tectona grandis	0.02	1.43	1.00	70	199	25.26	19.44	15.92	50.42
3	Dillenia pentagyna	0.02	1.20	0.60	50	390	13.95	13.89	31.22	59.06
4	Zizyphus xylopyrus	0.03	1.00	0.30	3L	97	6.98	8.33	7.77	25.08
5	Bambusa sp.	0.05	1.00	0.40	40	32	9.30	11.11	2.56	22.97
6	Hollorhena antioysenterica	0.03	1.00	0.30	3G	32	6.98	6.33	2.56	17.87
7	Mallotus philipensis	G.63	1.00 ,	0.30	30	97	6.96	b.33	7.77	23.08
6	Tooni citiata	0.08	1.50	0.30	20	161	6.98	5.56	12.89	25.43
						1249	100.01	99.99	99.99	299.99

Maturity Index = 245
Continuum index = 1824
Association: **Terminalia-Tectona-Dillenia**

Loc. 27 Ponnamudithandu

No.	Name of species	Ab/F	Ab	D	XF	CA	RD	RF	RBA	IVI
1	Anogeissus Latifolia	0.03	1.00	0.30	30	161	6.38	7.50	6.57	20.45
2	Stereospermum colais	0.03	1.40	0.70	50	127	14.89	12.50	5.18	32.57
3	Lagerstroemia microcarpa	C.03	1.00	0.30	30	286	6.38	7.50	11.67	25.55
4	xylia xylocarpa	0.03	1.40	0.70	50	161	14.89	12.50	6.57	33.96
5	Tectona grandls	0.02	1.00	0.56	50	161	1G.64	12.50	6.57	29.71
6	Terminalia crenutata	0.03	1.00	0.30	3G	336	6.36	7.50	13.71	27.59
7	Dillenia pentagyna	C.04	1.33	0.40	33	286	8.51	7.50	11.67	27.66
6	Haldina cordifolia	0.03	1.25	0.50	40	576	10.64	10.00	23.51	44.15
9	Gardenia turgida	0.03	1.00	0.40	4C	50	8.51	10.00	2.04	20.55
10	Eutea superba	0.02	2.00	0.20	10	32	4.26	2.50	1.31	8.07
11	Wrightia tinctoria	0.05	1.00	0.20	20	50	4.26	5.00	2.09	11.30
12	Pterocarpus marsupium	0.10	1.00	0.10	10	97	2.13	2.50	3.96	6.59
13	Hydnocarpus pentanara	0.10	1.00	0.10	10	127	2.13	2.50	5.18	9.81
						245G	100.00	100.00	99.98	299.98

Maturity Index = 30.77
Continuum index = 1781
Association : xylia–Tectona–Stereospermum

Loc. 28. Ponnanpara

No.	Name of species	Ab/F	Ab	D	%F	BA	RD	RF	RBA	IVI
1	Meyna laxiflora	G.03	1.25	0.50	40	72	lG.20	10.00	3.17	23.37
2	Zizyphus xytopyrus	0.04	1.50	0.60	40	127	12.24	10.00	5.60	27.84
3	Terminalia crenulata	0.02	1.14	0.80	70	199	16.53	17.53	t.77	42.60
4	Tectona grandis	0.02	1.14	0.80	70	161	16.33	17.50	7.10	40.93
5	Gardenia turgida	0.02	1.38	1.10	80	72	22.45	20.00	3.17	45.62
6	Cycas sp.	0.05	1.00	G.20	20	97	4.08	5.00	4.28	13.36
7	Cassia fistula	0.05	1.00	0.20	20	127	4.08	5.00	5.60	14.68
8	Lagerstroemia microcarpa	0.04	1.33	0.40	30	199	8.16	7.50	6.77	24.43
9	Pterocarpus marsupium	0.10	1.00	0.10	10	161	2.04	2.50	7.10	11.64
10	Ficus ,benghalensis	0.05	1.00	0.20	20	1053	4.08	5.00	46.43	55.51
						2266	99.99	100.00	99.99	299.98

Maturity index = 40
Continuum index = 1842
Association: **Gardenia-Tectona-Terminalia**

Loc-29 **Ponnanpara I I**

No.	Name of species	Ab/F	Ab	D	%F	BA	RD	RF	RBA	IVI
1	Terminalia panlculata	**0.02**	1.57	*1.10*	70	199	20.00	15.56	16.07	56.63
2	Wrightia tinctoria	0.02	1.00	0.50	50	97	9.09	11.11	8.81	29.01
3	Anogeisus Latifolia	0.02	1.17	**0.70**	60	161	12.73	13.33	14.62	40.68
4	Lagerstroemia nlcrocarpa	0.02	1.00	0.50	**SO**	266	9.09	**11.11**	25.98	46.18
5	Emblica officlnalls	0.03	1.00	*0.40*	40	97	7.27	***8.89***	6.81	***24.97***
6	Gardenia turgida	**0.03**	1.29	C.90	**70**	50	16.36	15.56	4.54	36.46
7	Butea superba	6.03	1.60	0.80	50	50	14.55	17.11	4.54	30.20
8	Tectona grandis	0.02	*1.00*	0.60	**60**	161	10.91	13.33	14.62	36.86
						1101	100.00	100.00	*99.99*	299.99

Maturity index = 5625
Continuum index = ***1576***
Association: **Terminalia-Gardenia-Tectona**

Loc. **30 Ponniyanpara**

Ko.	Name of species	Ab/F	Ab	D	%F	B A	RD	RF	RBA	IVI
1	Terminalia crenulata	**0.03**	1.25	0.50	*40*	161	t.77	*8.00*	7.44	24.21
2	Terminalia bellirica	0.03	*1.00*	0.30	30	***247***	5.26	6.00	11.14	22.40
3	Terminalia paniculata	0.03	1.00	*0.40*	*46*	127	7.02	8.00	**5.87**	***20.89***
4	Lagerstroemia microcarpa	0.03	1.00	*0.30*	30	127	*5.26*	6.00	5.87	**17.13**
5	**Bambusa sp..**	0.03	1.67	1.00	60	32	***17.54***	12.00	*1.48*	12.00
6	Schleichera **oleosa**	0.05	**1.00**	0.20	20	336	3.51	*4.00*	15.53	23.04
7	Anogeissus latifolia	0.03	1.00	*0.30*	30	97	***5.26***	***6.00***	*4.40*	15.74
8	Emblica officinalis	0.10	1.00	**0.10**	10	127	1.75	2.00	5.87	5.62
9	Dillenia pentagyna	***0.20***	2.00	0.20	10	390	3.51	*2.00*	*18.03*	23.54
10	Stereospermum **colais**	0.03	1.00	0.30	35	72	5.26	**6.00**	3.33	14.59
11	cycas **sp.**	0.10	1.00	0.10	10	50	1.75	2.00	2.31	6.00
12	Zizyphus xylopyrus	0.02	1.17	0.70	6L	***1 8***	12.28	**12.00**	**0.83**	**25.11**
13	Tectona grandis	0.02	1.00	0.60	60	161	10.53	**12.00**	7.44	29.97
14	Grewia **tiliifolia**	0.02	1.00	0.50	5U	127	8.77	10.00	5.87	24.04
15	Dalbergia latifolia	L.05	1.00	0.20	20	97	3-51	4.00	***4.48***	11.99
						2163	***99.98***	100.00	**99.97**	***299.95***

Maturity index = 33.33
Continuum index = 2079
Asscciation: **Zizyphus-Tectona-Dambusa**

Loc. **31.** Pulikkal

No.	Name of species	Ab/F	Ab	*D*	%F	*D A*	RD	RF	RBA	IVI
1	**xylia** xylocarpa	0.02	1.40	C.80	70	127	20.00	20.59	7.22	47.81
2	Lagerstroenla microcarpa	0.02	1.00	0.50	SO	161	***12.50***	14.71	9.15	36.36
3	Tectona grandis	**0.02**	***1.38***	1.10	60	161	27-50	23-53	9.15	60.16
4	Terminalia crenulata	0.03	1.00	*0.40*	*40*	199	10.00	11.76	11.31	**33.07**
5	**Bombax** nalabaricum	0.05	**1.00**	**0.20**	20	72	5.00	5.86	4.09	14.97
6	Terminalia bellirica	0.08	1.50	0.30	20	510	**7.50**	5.61	28.98	42.36
7	Grewia tiliifolia	0.03	1.25	**0.50**	40	97	12.50	**11.76**	5.51	2Y.77
8	Alstonia scholarls	0.10	1.00	**0.10**	10	97	2.50	2.94	5.51	10.95
9	Dillenia pentagyni	0.10	*1.00*	*0.10*	10	336	2-50	2.94	19.09	25.33
						1760	*100.00*	99.99	**100.00**	299.99

Maturity index = 37.78
Continuum index = 1885
Association: **Tectona-Xylia-Lagerstroemia**

Loc, **32. Pulikkalmala**

No.	Case of species	Ab/F	Ab	D	%F	EA	RD	RF	RBA	IVI
1	Trema orientalis	0.04	1.33	0.40	3G	5L	20.00	lb-75	3.86	42.61
2	Dillenia pentagyna	0.64	1.50	0.6	40	286	30.00	25.01,	22.05	77.05
3	Trewia nudiflora	0.03	1.00	0-3G	30	576	15.00	lt.75	44.41	76.16
4	Cassia fistula	0.05	1.00	0.20	20	127	10.00	12.50	9.79	32.29
5	Lacerstromia microcarpa	0.05	1.00	0.20	20	161	10.00	12.50	12.41	34.91
6	Bombax malabaricum	0.05	1.50	0.30	20	97	15.00	12.50	7.40	34.96
						1297	100.00	100.00	100.00	300.00

Maturity index = 2667
Continuum inoex = 1782
hssociation: Dillenia-Trema

Loc.33. Pulimchodupallom

No.	Name of species	Ab/F	Ab	D	XF	CIA	RD	RF	RBA	IVI
1	xylia xylocerpa	0.02	1.29	0.90	70	127	12.16	12.28	5.25	29.69
2	Terminalia crenulata	0.02	1.00	0.60	60	161	8.11	10.53	6-66	25.30
3	Terminalia paniculata	0.03	1.40	0.70	50	161	9-46	8.77	6.66	24.89
4	Dillenia pentegyna	0.02	1.20	0.60	50	2b6	8.11	8.77	11.82	28.70
5	Zizyphus xylopyrus	0.03	1.00	0-4C	41,	32	5-41	7.02	1-32	13-75
6	Piliostigma malabarica	0.05	1.00	0.20	20	72	2.70	3.51	2.98	9.19
7	Cassia fistula	0-05	1-5L	0.30	20	72	4.05	3.51	2.98	10.54
8	Gardenia turgida	0.02	1.20	0.60	50	18	8.11	6.77	0.74	17.62
9	Lagerstroemia microcarps	0.03	1.00	0.30	30	97	4-05	5-26	4-01	13.32
10	Pterocarpus marsupium	0.04	1.33	0.40	30	127	5.41	5.26	5.25	15.92
11	Wrightia tinctoria	0.10	2-GO	0.40	20	50	5.41	3-51	2-07	10.99
12	Tectona grandis	0.05	2.00	0.80	40	127	10.81	7.02	5-25	23.08
13	Butea superba	0.10	2.00	0.40	20	32	5-41	3-51	1-32	10.24
14	Terminalia bellirica	0.10	1.00	0.10	10	241	1.35	1.75	9.96	13.06
15	Clestanthus sp.	0.05	1.00	0.20	20	97	2-70	3-51	4-01	10.22
16	Schleichera oleosa	0.10	1.00	0.10	10	286	1.35	1.75	11.82	14.92
17	Haldinia coroifolia	0.20	2.00	0.20	10	336	2.70	1.75	13.89	18.34
18	Emblica officinalis	0.05	1.00	0.20	20	97	2.70	3.51	4.01	l(r.22
						2419	100.00	59.99	100.00	259.99

Maturity index = 31.67
Continuum inoex = 163.95
Association: Xylia-Terminalia-Dillenia

Loc.34 **Seechali**

No.	Name of species	Ab/F	Ab	D	%F	DA	RD	KF	RDA	IVI
1	Schleichera oleosa	0.02	1.00	0.50	50	241	12.50	16.13	35.49	64.12
2	Dalbergia latifolia	0.02	1.57	1.10	70	161	27.50	22.58	23.71	73.79
3	Cassia fistula	0.03	1.00	0.30	3L	72	7-50	9.68	10.60	57.76
4	Tectona grandis	0.02	1.33	0.80	60	97	20.00	19.35	14.29	55.64
5	Acatia intsia	C.03	1.00	0.30	30	18	7.50	9.68	2.65	19.83
6	Zizyphus xylopyrus	0.05	1.00	C.20	20	32	5.00	6.45	4.71	16.16
7	Bambusa sp.	0.07	2.00	0.60	30	8	15.00	9.68	1.18	25.81
8	Albizia procera	0.05	1.00	0.20	20	50	5.00	6.45	7.36	lt.81
						675	100.00	100.00	59.99	299.99

Maturity index = 38.75
Continuum index = 11160.32
Association: Dillenia-Tectona

Lor. 35. Thekkady

No.	Name of species	Ab/F	Ab	D	%F	BA	R D	RF	RBA	IVI
1	Bambusa sp.	0.02	1.86	1.50	80	32	26.32	18.60	1.55	46.47
2	Tectona grandis	0.02	1.20	0.60	50	161	10.53	11.63	7.82	29.98
3	Terminalia crenulata	0.02	1.00	0.50	50	199	8.77	11·63	9·66	30.06
4	Grewiatiliifolia	0.02	1.20	G.60	50	161	10.53	11.65	7.82	29.98
5	Acatia Intsia	0.05	1.00	0.20	20	16	3.51	4.65	0.67	9.03
6	Milusa tomentosa	0.05	1.00	0.20	20	72	3·51	4.65	3·50	11.66
7	Terminalia bellirica	0.05	1.00	0.20	20	878	3.51	4.65	42.62	50.78
8	Emblica officinalis	0.06	1.67	0.50	30	97	b.77	6.98	4.71	20.46
9	Mitragyna parvifolla	0.10	1.00	0.10	10	127	1·75	2.33	6·17	10.25
10	Lagerstroemia microcarpa	0.04	1.75	0.70	40	161	12.28	9.35	7.62	29.40
11	Butea superba	0.03	1.00	0.30	30	32	5.26	6.98	1.55	13.79
12	Zizyphus xylopyrus	0.05	1.00	0.20	20	50	3.51	4.65	2.43	10.59
13	Cordia dichotoma	0.10	1.00	0.10	10	72	1·75	2.33	3.50	7.58
						2060	100.00	100.01	100.02	300.03

Maturity index = 33.08
Continuum index = 1827.09
Association: Bambusa-Tectona-Grewia

Loc 36. **Thekkady XI**

No.	Name of species	Ab/F	Ab	D	%F	6A	ED	RF	RBA	IVI
1	xylia xylocarpa	0.02	1.43	1.00	70	127	19.61	17.07	9.10	45.78
2	casia fistula	0.02	1.17	C.70	60	97	13.73	14.63	6.95	35.31
3	Emblica officinalis	0.03	1.00	0.40	40	97	7.84	9.76	6.95	24.55
4	Lagerstromia microcarpa	0.03	1.00	0.30	30	199	5.80	7·32	14.26	27.49
5	Terminalia crenuleta	0.03	1.25	0.50	4G	161	9.80	9.76	11.53	31.09
6	Terminalia paniculata	0.02	1.00	0.60	60	127	11.70	14.63	9.10	35.49
7	Albizia lebbeck	0.02	2.00	0.20	10	97	3.92	2.44	6.95	13.31
8	Ericelia squaaosa	0.05	1.00	0.20	26	97	3.92	4.88	6.95	15.75
5	Dillenia pentagyna	0.03	1.00	0.30	3C	336	5.88	7.32	24.07	37.27
10	Xeromphis spinosa	0.10	2.00	0.40	2L	32	7.84	4.88	2.25	15.01
11	Zizyphus xylopyrus	0.10	1.00	0.10	10	18	1.96	2.44	1.29	5.69
12	Bambusa sp.	0.10	2.00	L.40	20	8	7.64	4.86	0.57	13.29
						1396	100.01	100.01	100.01	300.03

Maturity index = 34.17
Continuum index = 1976.65
Association: Xylia-Terminalia-Cassia

Loc.37. Thekkumpara

No.	Name of speies	Ab/F	Ab	D	Xf	BA	R D	RF	RBA	IVI
1	Dalbergia Latifolia	0.02	1.29	0.90	70	97	32.14	26.92	12.36	71.42
2	xylia xylocarpa	0.01	1.00	0.70	70	161	25.00	26.92	20.51	75.42
3	Nitragyna parviflora	0.05	1.00	0.20	20	199	7.14	7.69	25.35	40.18
4	Terminalia paniculata	0.02	1.00	0.50	50	127	17.86	19·23	16.16	53.27
5	Careya arborca	0.05	1.00	0.20	20	72	7.14	7.69	9.17	24.00
6	Cassia flstule	0.05	1.00	0.20	20	97	7.14	7.69	12.36	27.19
7	Zizyphus xylopyrus	0.10	1.00	0.10	10	32	3.57	3.85	4.06	11.50
						785	99.99	99.99	100.01	299.99

Mturity Index = J7.14
Continuum index = 2177.26
Association: Xylia-Dalbergia

Loc.38 Thellikkal

No.	Name of species	Ab/F	Ab	D	%F	BA	RD	RF	RBA	IVI
1	Terminalia bellirica	0.01	1.13	0.90	80	716	12.56	12.50	21.70	46.76
2	Dillenia pentagyna	0.02	1.00	0.60	60	241	8.33	9.36	7.27	24.96
3	Cordia dichotoma	0.05	1.00	0.20	20	97	2.78	3.13	2.93	8.84
4	Cassia fistula	0.05	1.00	0.20	20	97	2.78	3.13	2.93	8.84
5	Xylia xylocarpa	0.02	1.57	1.10	70	127	15.26	10.94	3.83	30.03
6	Wrightia tinctoria	0.02	1.00	0.50	50	50	6.94	7.81	1.51	16.26
7	Tetrameles nudiflora	0.02	1.00	0.50	50	645	6.94	7.81	19.46	34.21
8	Lagerstroemia microcarpa	0.02	1.00	0.50	50	127	6.94	7.81	3.83	18.58
9	Grewia tiliifolia	0.02	1.17	0.70	60	161	9.72	9.38	4.86	23.96
10	Briedlia squamosa	0.05	1.00	0.20	20	97	2.78	3.13	2.93	8.84
11	Dalbergia latifolia	0.05	1.00	0.20	20	127	2.78	3.13	2.83	8.74
12	Filiostigma malabarica	0.10	1.00	0.10	10	72	1.39	1.56	2.17	5.14
13	Emblica officinalis	0.05	1.00	0.20	20	97	2.78	3.13	2.93	8.84
14	Butea superba	0.04	1.33	0.40	30	32	5.56	4.69	0.67	11.22
15	Zizyphus xylopyrus	0.06	1.50	0.30	20	32	4.17	3.13	0.97	8.27
16	Xeromphis spinosa	0.03	1.00	0.40	40	18	5.56	6.25	0.54	12.35
17	Schleichera oleosa	0.10	1.00	0.10	10	448	1.39	1.56	13.52	16.47
18	Stereospermum colais	0.10	1.00	0.10	10	127	1.39	1.56	3.83	6.78
						3314	100.01	100.02	100.01	300.04

Maturity index = 35.55
Continuum index = 1426.13
Association: Terminalia-Xylia-Dillenia

Loc. 39. Thellikkal (Rest House)

No.	Name of species	Ab/F	AB	D	%F	BA	RD	KF	RBA	IVI
1	Xylia xylocarpa	0.02	1.63	1.30	60	161	20.63	15.09	5.70	41.48
2	Dillenia pentagyna	0.01	1.00	0.70	70	510	11.11	13.21	18.24	42.56
3	Careya arborea	0.10	1.00	0.10	13	97	1.59	1.89	347	6.95
4	Terminalia bellirica	0.02	1.00	0.50	50	796	7.94	9.43	28.47	45.84
5	Terminalia crenulata	0.02	1.14	0.80	70	199	12.70	13.21	7.12	33.03
6	Schleichera oleosa	0.05	1.00	0.20	20	390	5.17	3.77	13.95	20.85
7	Nitragyna parviflora	0.03	1.00	0.30	30	127	4.76	5.66	4.54	14.98
8	Cassia fistula	0.03	1.00	0.35	30	97	4.70	5.65	3.67	13.89
9	Grewia tiliifolia	0.02	1.17	0.70	60	72	11.11	11.32	2.58	25.01
10	Emblica officinalis	0.03	1.00	0.30	30	97	4.70	5.66	3.47	15.kO
11	Lagerstroemia microcarpa	0.05	1.00	0.20	20	127	3.17	3.77	4.54	11.48
12	Cordia dichotoma	0.05	1.00	0.20	20	72	3.17	3.77	2.58	9.52
13	Acatia intsia	0.04	1.75	0.70	40	50	11.11	7.55	1.79	20.45
						2796	99.98	99.99	99.98	299.95

Maturity index = 40.77
Continuum index = 1918.81
Association: Xylia-Dillenia-Terminalia

Loc. 40 Thellikkal (Research plot)

No.	Name of species	Ab/F	Ab	D	%F	BA	RD	R F	RBA	I V I
1	Stereospermum colais	0.03	1.25	0.50	40	161	11.90	12.12	7.17	31.15
2	Garcenia turgioa	0.05	1.00	0.20	20	50	b.76	6.86	2.23	13.05
3	Terminalia crenulata	0.04	1.50	0.60	40	199	14.29	12.12	6.66	35.27
4	Tectona grandis	0.06	1.67	0.50	30	127	11.90	9.09	5.05	26.64
5	Schleichera oleosa	0.05	1.00	0.20	20	390	4.76	6.06	17.36	28.18
6	Lagerstroemia microcarpa	0.03	1.00	0.30	30	161	7.14	9.09	7.17	23.40
7	Zizyphus xylopyrus	0.04	1.50	0.60	14	18	14.29	12.12	0.80	27.21
8	Wrightia tinctoria	00	1.00	.0.10	10	50	23	3.03	2.23	7.64
9	Cassia fistula	0.03	1.50	0.30	20	50	7.14	6.06	2.23	15.45
10	Cycus sp.	0.03	1.00	0.40	40	97	9.52	12.12	4.32	25.90
11	Mallotus philippensis	0.10	1.00	0.10	10	$7	2.38	3.03	4.32	9.75
12	Helicna corotifolia	0.10	1.00	0.10	10	719	2.38	3.03	32.02	37.43
13	Emblica officinalis	0.08	1.50	0.30	20	127	7.14	6.06	5.65	
						2246	99.96	99.99	100.01	299.96

Maturity index = 25.36
Continuum index = 2030.01
Association: Terminalia-Stereospermum

Table 1 continued
LOC. **41. Thellikkal II**

No.	Name of species	Ab/F	Ab	D	%F	BA	RD	RF	RBA	IVI
1	Xylia xylocarpa	0.01	1.13	0.90	80	161	15.00	14.01	7.52	37.33
2	Terminalia paniculata	0.02	1.17	0.70	60	127	11.67	11.11	5.93	26.71
3	Lagerstroemia microcarpa	0.04	1.33	0.40	30	97	6.67	5.56	4.53	16.76
4	Mitragyna parviflora	0.03	1.00	0.40	40	390	6.67	7.41	16.22	32.30
5	Stereospermum colais	0.03	1.00	0.30	30	97	5.00	5.56	4.53	15.09
6	Gardenia turgida	0.03	1.50	0.30	20	32	5.00	3.70	1.49	10.19
7	Terminalia crenulata	0.01	1.00	0.70	70	127	11.67	12.96	5.93	30.56
8	Careya arborea	0.08	1.50	0.30	20	50	5.00	3.70	2.34	11.04
9	Holorrhena antidysenterica	0.03	1.00	0.40	40	18	6.67	7.41	0.64	14.92
10	Dillenia pentagyna	0.03	1.00	0.40	40	336	6.67	7.41	15.69	29.77
11	Bridelia retusa	0.10	1.00	0.10	10	97	1.67	1.65	4.53	8.05
12	Wrightia tinctoria	0.04	1.33	0.40	30	97	6.67	5.56	4.53	16.76
13	Anogeisus latifolia	0.05	1.00	0.20	20	127	3.33	3.70	5.93	12.96
14	Emblica officinalis	0.05	1.00	0.20	20	97	3.33	3.70	4.53	11.56
15	Nilusa tomentosa	0.05	1.00	0.20	20	127	3.33	3.70	5.93	12.96
16	fectona grandis	0.10	1.00	0.10	10	161	1.67	1.65	7.52	11.04
						2141	100.02	99.99	99.99	300.00

Maturity index = 33.75
Continuum Index = 1704.27
Association: Xylia-Terminalia

Loc. 42 Thottiylai

No.	Name ot species	Ab/f	bb	D	% F	B A	RD	RF	RBA	IVI
1	Tectona grandis	0.03	1.00	1.30	3C	127	6.82	8.33	12.96	28.11
2	Terminalia crenulata	0.02	1.33	0.80	60	127	18.18	16.67	12.96	47.81
3	Terminalia paniculeta	0.02	1.17	0.70	60	161	15-91	16.67	16.43	45.01
4	Anogeisus latifolia	0.02	1.17	0.70	60	97	15.91	16.67	9.90	42.48
5	cycus sp.	0.05	1.00	0.20	20	50	4.55	5.56	5.10	15.21
6	Zizyphus xylopyrus	0.04	1.39	0.40	30	32	9.09	8.33	3.27	20.69
7	Stereospermum colais	0.10	2.00	0.40	20	97	9.05	5.56	9.90	24.55
8	Wrightia tinctoria	0.03	1.00	0.40	40	72	9.09	11.11	i.35	27.55
9	Eambusa sp.	0.05	1.00	0.20	20	8	4-55	5.56	1.84	11.95
10	Brioelia squaaosa	0.10	1.01;	0.10	10	72	227	2.78	7.35	12.40
11	Lagerstroemia microcarpa	0.10	2.00	0.20	10	127	4.55	2.76	12.96	20.29
						960	100.01	100.02	100.02	300.05

Maturity Index = 32.73
Continuum Index = 1889.52
Association: **Anogeissus-Terminalia-Wrightia**

Loc. 43. Thottiyali top

No.	Name of species	Ab/f	A b	D	XF	BA	R D	R F	RBA	IVI
1	Ficus benghalensis	0.02	1-25	0.90	70	964	18.00	15-56	53.95	87.51
2	Dalbergia Latifolia	0.02	1.20	0.60	50	161	12.00	11.11	9.01	32.12
3	Terminalia crenulata	0.03	1.00	0.40	40	127	8.00	8.89	7.11	24.00
4	Albizia procera	0.03	1.00	0.40	40	97	8.00	8.89	5.43	22.32
5	Garuga pinnata	0.02	1.00	0.50	50	97	10.00	11.11	5.43	26.54
6	Bambusa sp.	0.02	1.00	0.60	60	18	12.00	13.33	1.01	26.34
7	Gardenia turgIda	0.02	1.17	0.70	60	32	14.00	13-33	1.79	29.12
8	Anogeisus latifolia	0.06	1.50	0.30	20	72	6.00	4.44	4.05	14.47
9	Piliostigma malabarica	0.10	1.00	0.10	10	72	2.00	2.22	4.03	b.25
10	Meyna laxiflora	0.10	1.00	0.10	10	50	2.00	2.22	2.80	7.02
11	Sterculia urens	0.03	1.00	0.40	40	97	8.00	8.89	5.43	22.32
						1787	100.00	99.99	100.02	300.01

Maturity Index = 40.91
Continuum Index = 1440.60
Association: Ficus-Bambusa-Gardenia

Loc. 44. Thumakadavu(Rock point)

ho.	Name of spccies	Ab/F	AD	D	If	B A	R D	A F	RBA	I V I
1	Cassia fistula	0.03	1.00	0.03	3L	127	8.57	10.00	11.03	29.60
2	Pterocarpus marsupium	0.05	1.00	L.20	20	161	5.71	6.67	13.94	26.37
3	Bombax malabaricum	0.04	1.33	0.40	30	'27	11.43	10.00	11.03	32.46
4	Terminalia crenulata	0.02	1.00	C.50	50	199	1L.29	16.67	17.29	48.25
5	Brioelia squamosa	0.05	1.00	0.20	20	127	5.71	6.67	11.03	23.41
6	Tectona grandis	0.02	1.17	L.70	6	127	2L.00	20.00	11.03	51.03
7	Wrightia tinctoria	0.05	1.00	0.20	20	72	5-71	6.67	6.26	18.64
8	Gardenia turgida	0.03	1.25	0.50	40	50	14.29	13.33	4.34	31.90
9	Dalbergia Latifolia	0.06	1.67	0.50	30	161	14.29	10.00	13.99	38.28
						1151	100.00	100.01	99.99	300.00

Maturity index = 33.33
Continuum index = 1845.83
Association: Tectona-Terminalia

Loc. 45 Tunakadavu (Sungam)

NO.	Name Of species	Ab/F	AB	D	%F	B A	RD	KF	RBA	I V I
1	Terminalia paniculata	L.02	1.33	0.80	60	161	13.56	11.32	8.80	33.68
2	Terminalia crenulata	0.01	1.00	0.70	70	127	11.86	13.21	6.94	32.01
3	Terminalia bellirica	0.02	1.00	0.60	60	199	10.17	11.32	10.87	32.36
4	Grewia tiliifolia	0.04	1.33	0.40	30	97	6.78	5.66	5.30	17.74
5	Tectona grandis	0.03	1.00	0.30	30	127	5.08	5.66	6-94	17.68
6	Emblica officinalis	0.05	1.00	0.20	20	72	3.39	3.77	3.93	11.09
7	Anogeisus Latifolia	0.02	1.00	0.30	30	P7	5.08	5.66	5.30	16.04
8	Lagerstroemia microcarpa	0.02	1.00	0.50	50	286	6.47	9.43	5.63	33.53
9	xylia xylocarpa	0.02	1.29	0.90	7L	127	15.25	13.21	6.94	35.40
10	Dillenia pentagyna	L.02	1.00	0.60	60	350	li.17	11.32	21.31	42.00
11	Pillostigma malabaricum	0.04	1.33	0.40	30	50	6.78	5.66	2.73	15.17
12	Pterocarpus marsupium	0.05	1.00	0.20	20	97	3.35	3.77	5.30	12.46
						1630	99.98	99.99	99.99	299.96

Maturity index = 44.17
Continuum index = 1E91.6
Association: xylia-Terminalia-Dillenia

Loc. 46 Toothanpara

No.	Name of species	Ab/F	Ab	D	Lh	%F	R D	RF	RBA	IVI
1	Polyalthia fragrans	0.02	1.00	0.50	5C	199	17.86	21.74	9.03	48.63
2	Myristica Dactyoioes	0.03	1.40	0.70	50	241	25.05	21.74	10.93	57.67
3	Garcinia norella	0.03	1.00	0.40	40	127	14.29	17.39	5.76	37.44
4	Calamus SP.	0.07	200	0.60	3C	6	21.43	13.04	0.36	34.63
5	vatteria indica	0.03	100	0.30	30	1053	10.71	13.04	47.78	71.53
6	Schleichera oleosa	0.03	1.00	0.30	30	576	10.71	13.04	i6.13	49.88
						2204	100.00	99.99	99.99	299.96

Maturity index = 38.35
Continuum index = 1635.18
Association: Myristica-Polyalthia

Loc. 47. Vallimadakkara Vayal

No.	Name of species	Ab/F	Ab	D	%F	bA	RD	RF	RbA	IVI
1	Dillenia pentagyna	0.02	1.17	0.70	60	241	21.21	21.43	18.40	61.04
2	Terminalia crenulata	0.02	1.29	0.90	70	161	27.27	25.00	12.29	64.M
3	xeromphis spinosa	0.10	1.00	0.10	10	50	3.03	3.57	3.62	10.42
4	Zizyphus xylopyrus	0.03	1.00	0.30	30	32	9.09	10.71	2.44	22.24
5	cassia fistula	0.05	1.00	0.20	20	72	6.06	7.14	5.50	18.70
6	Emblica officinalis	0.10	1.00	0.10	10	127	3.03	3.57	9.69	16.29
7	Bambusa SP.	0.10	2.00	0.40	20	18	12.12	7.14	1.37	20.63
8	Dalbergia latifolia	0.05	1.00	0.20	20	72	6.00	7.14 9	5.50	18.70
9	careya arborea	0.05	1.00	0.20	20	97	6.06	7.14	7.40	20.60
1C	Lagerstromia microcarpa	0.10	1.00	0.10	1C	390	3.03	3.57	29.47	36.37
11	cycus SP.	0.10	1.00	0.10	10	50	3.03	3.57	3.82	10.42
						1310	99.99	99.98	100.00	299.97

Maturity index = 25.45
Continuum index = 1715.25
Association: Terminalia-Dillenia

Loc. 48. Vandithavalam

No.	Name of species	Ab/F	AD	D	%F	BA	RD	RF	RBA	IVI
1	Lagerstroemia microcarpa	0.02	1.29	0.90	70	330	15.00	13.73	25.00	53.73
2	Butea superba	0.02	1.20	0.60	50	32	10.00	9.80	2.30	22.18
3	Wrightia tinctoria	0.02	1.00	0.50	50	72	b.33	9.80	5.30	23.49
4	Pilluse tomentose	0.02	1.20	0.60	50	161	10.00	9.80	11.98	31.78
5	Tectona grandis	0.03	1.00	0.40	40	127	6.67	7.84	5.45	23.96
6	Grewia tiliifolia	0.63	1.00	0.40	40	161	6.67	7.84	11.98	26.49
7	Stereospermum colais	0.02	1.57	1.10	70	127	18.33	13.73	9.45	41.51
8	Albizia lebbeck	0.02	1.00	0.50	50	97	8.33	*9.80*	7.22	25.35
9	Xylia xylocarpa	0.03	1.00	0.40	40	199	6.67	7.84	14.81	21.32
10	Ziziphus xylopyrus	0.02	1.20	0.60	50	32	10.00	9.80	2.38	22.18
						1344	100.00	95.90	100.01	299.90

Maturity index = 51
Continuum index = 1236.44
Association: Lagerstroemia-Stereospermum

Loc. 49. Veettikunnu

No.	Name of species	Ab/F	AD	D	%F	BA	R D	RF	RBA	IVI
1	Terminalia paniculata	*0.02*	1.43	1.00	7b	161	21.20	17.07	9.09	47.44
2	Sterculia urens	0.03	1.00	0.30	30	127	6.38	7.32	7.17	20.67
3	Anogeisus latifolia	0.03	1.00	0.40	40	161	8.51	9.76	9.09	27.30
4	Cycus sp.	0.03	1.00	0.40	40	199	6.51	9.76	11.24	29.51
5.	Bambusa sp.	0.03	1.25	0.50	4C	32	10.64	9.76	1.81	22.21
6	Wrightia tinctoria	0.03	1.25	0.50	40	50	10.64	*9.76*	2.62	*23.22*
7	Lannea coromandelica	0.03	1.01	0.30	30	127	6.36	7.32	7.17	20.67
8	Pterocarpus marsupium	0.10	10:	0.10	10	161	2.13	*2.44*	9.09	13.66
9	Dalbergia latifolia	*0.05*	1.00	0.20	20	127	4.26	4.88	7.17	16.31
10	Albizia procera	0.08	1.50	0.30	20	161	6.38	4.80	9.09	20.35
11	Garuga pinnata	0.03	1.00	0.200		97	6.38	7.32	5.48	19.18
12	Mitragyna parviflora	0.05	1.00	0.20	20	336	4.26	4.88	16.97	28.11
13	Gardenia turgida	0.05	1.00	0.20	20	32	*4.20*	4.88	1.81	10.95
						1771	100.01	100.03	100.00	300.04

Maturity index 31.54
Continuum index = 1111.57
Association: Terminalia-Bambusa-Anogeisus

Loc. 50 Velayudhankai

No.	Name of species	Ab/F	Ab	D	%F	BA	RD	RF	RBA	IVI
1	Pithecellobium dulce	0.05	1.00	0.20	20	97	3.85	4.26	2.82	10.99
2	Schleichera oleosa	0.05	1.00	0.20	20	796	3.85	4.26	23.66	31.77
3	Careya arborea	0.10	1.00	0.10	10	127	1.92	2.13	3.77	7.82
4	Dillenia pentagyna	0.02	1.14	0.60	70	645	15.38	14.89	19.17	49.44
5	Terminalia crenulata	0.03	1.00	0.40	40	241	7.69	8.51	7.16	23.46
6	Cassia fistula	0.20	2.00	0.20	10	72	3.85	2.13	2.14	8.12
7	Lagerstroemia microcarpa	0.02	1.00	0.50	50	510	9.62	10.64	15.16	35.42
8	Anogeissus latifolia	0.05	1.00	0.20	20	127	3.85	4.26	3.77	11.88
9	Erythrina indica	0.10	1.00	0.10	10	127	1.92	2.13	3.77	7.82
10	Stereospermum colais	0.03	1.25	0.50	40	161	9.62	8.51	4.78	22.91
11	Grewia tiliifolia	0.02	1.00	0.60	60	199	11.54	12.77	5.93	30.24
12	Ziziphus xylopyrus	0.20	2.00	0.20	10	8	3.85	2.13	0.24	6.22
13	Gardenia turgida	003	1.00	0.30	30	18	5.77	*6.38*	L.53	1268
14	Emblica officinalis	*0.02*	1.00	0.50	50	72	9.62	10.64	2.14	*22.40*
15	Sterculia villosa	0.20	2.00	0.20	10	*97*	*3.85*	2.13	*2.80*	*8.80*
16	Wrightia tinctoria	0.10	1.00	0.10	10	50	1.92	2.13	1.49	5.54
17	Bambusa sp.	0.10	1.00	0.10	10	16	1.92	0.53	*4.50*	*4.58*
						3365	100.02	100.03	100.00	300.05

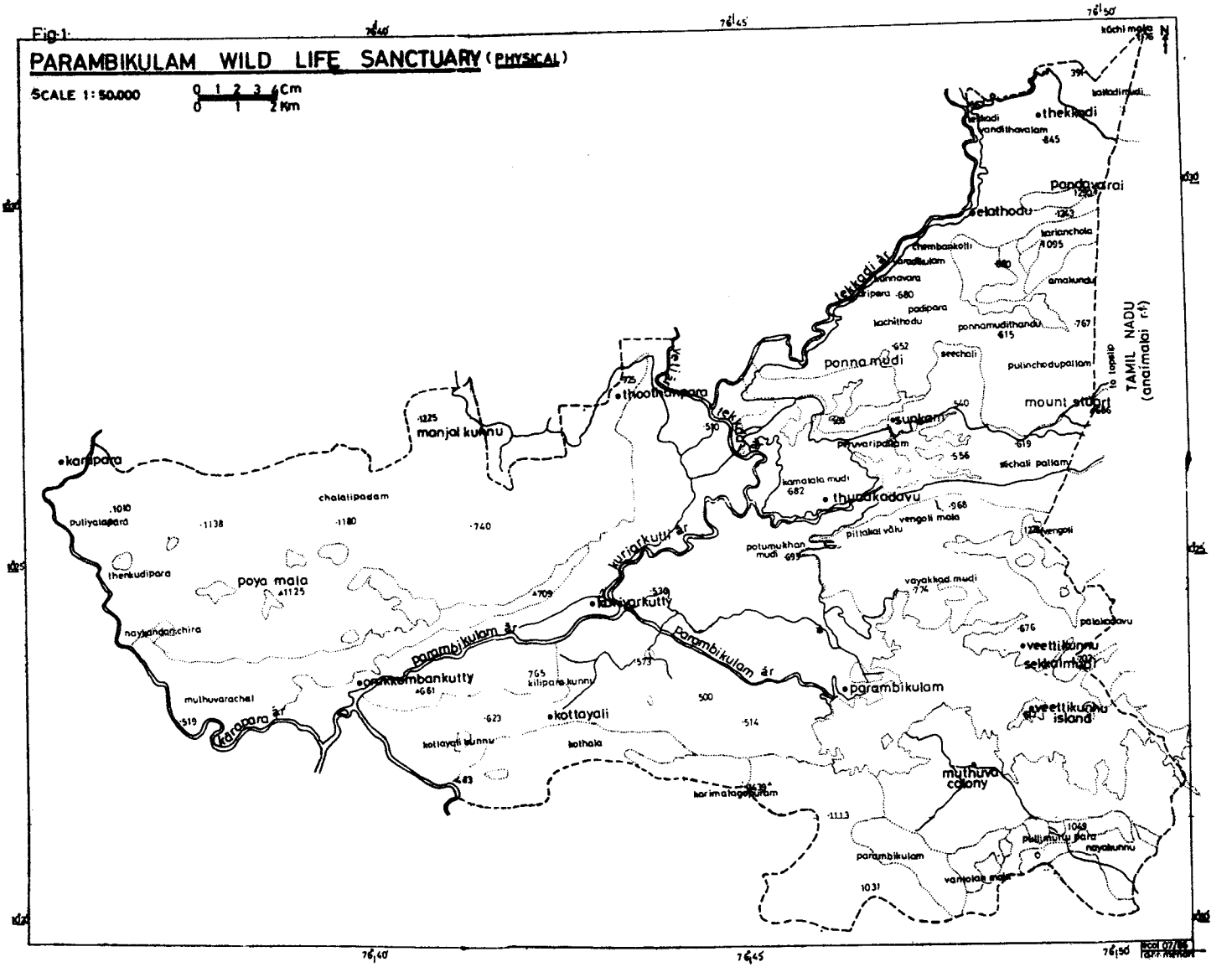
Maturity index = 27.65
Continuum index = 1567.16
Association: Dillenia-Grewia-Lagerstroemia

Fig-1:

PARAMBIKULAM WILD LIFE SANCTUARY (PHYSICAL)

SCALE 1 : 50,000

0 1 2 3 4 Cm
0 1 2 Km



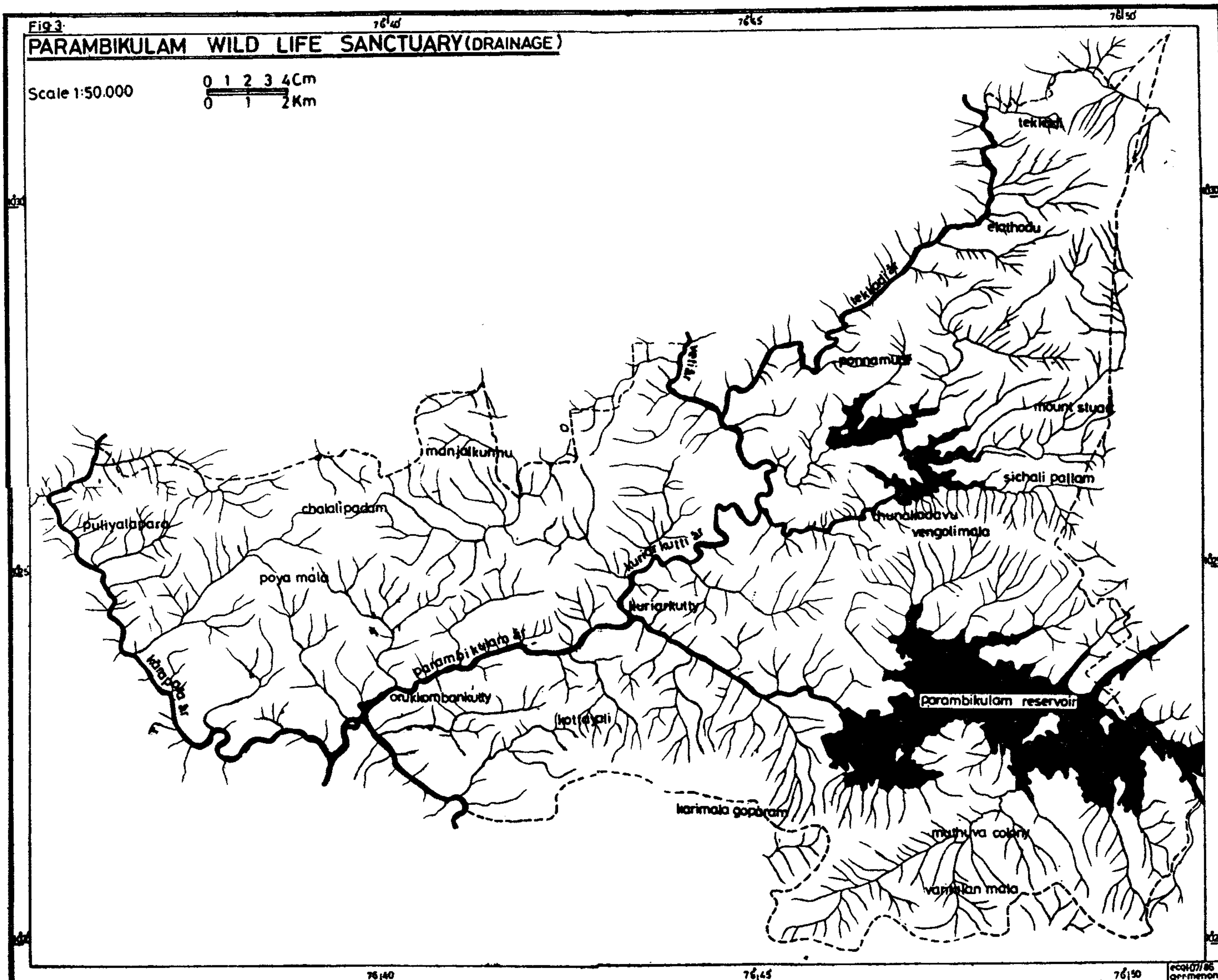


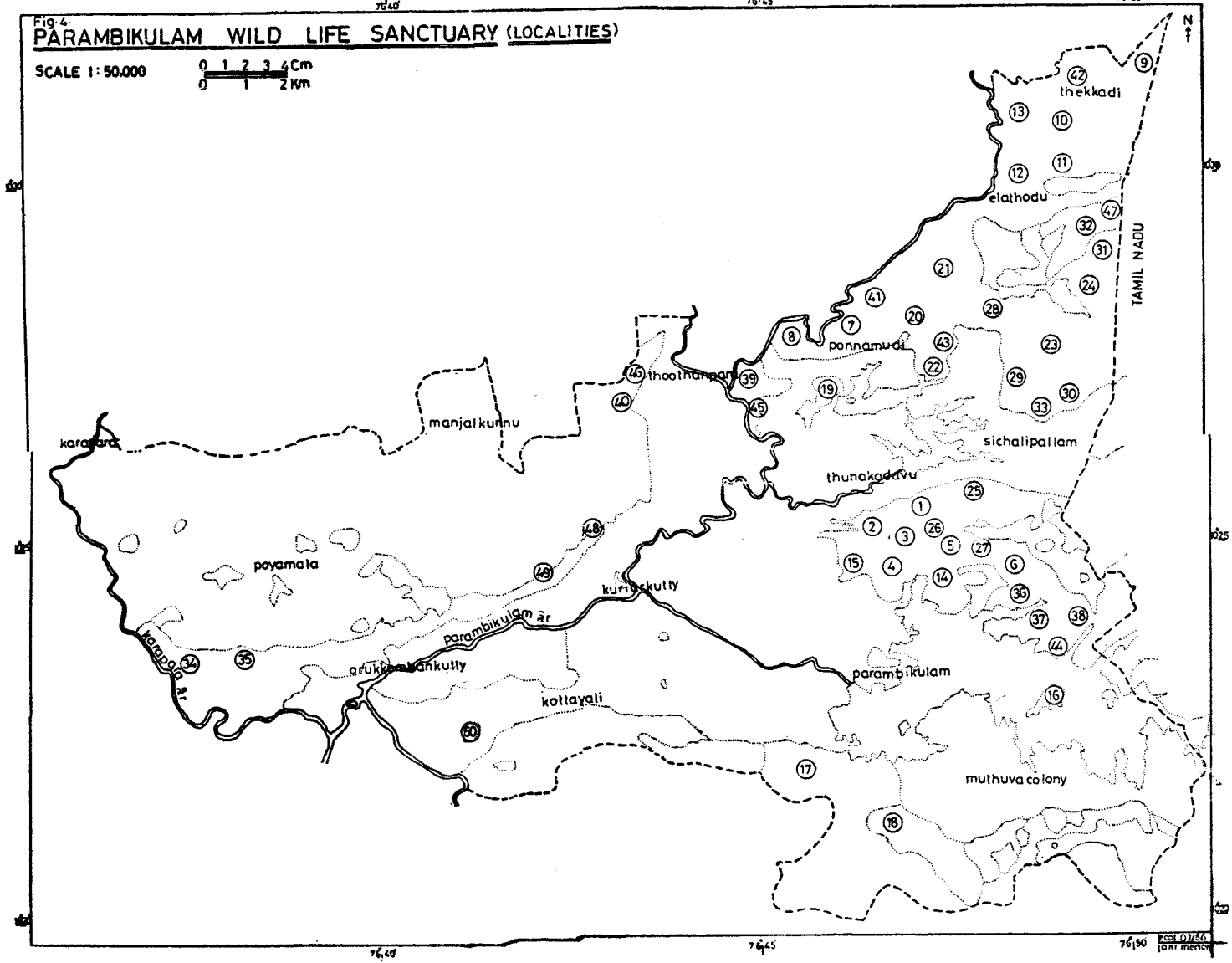
Fig 3
PARAMBIKULAM WILD LIFE SANCTUARY (DRAINAGE)
Scale 1:50.000
0 1 2 3 4Cm
0 1 2Km
tekkadi
elathodu
tekkadi ar
ponnamudi
mount stuart
manjalkunnu
sichali pallam
chalalipadam
thunakadavu
vengoli mala
puliyalapara
kuriarkutti ar
poya mala
kuriarkutty
parambikulam ar
parambikulam reservoir
orukkombankutty
kottayali
karimala gopuram
muthuva colony
vanjilan mala

Fig.4

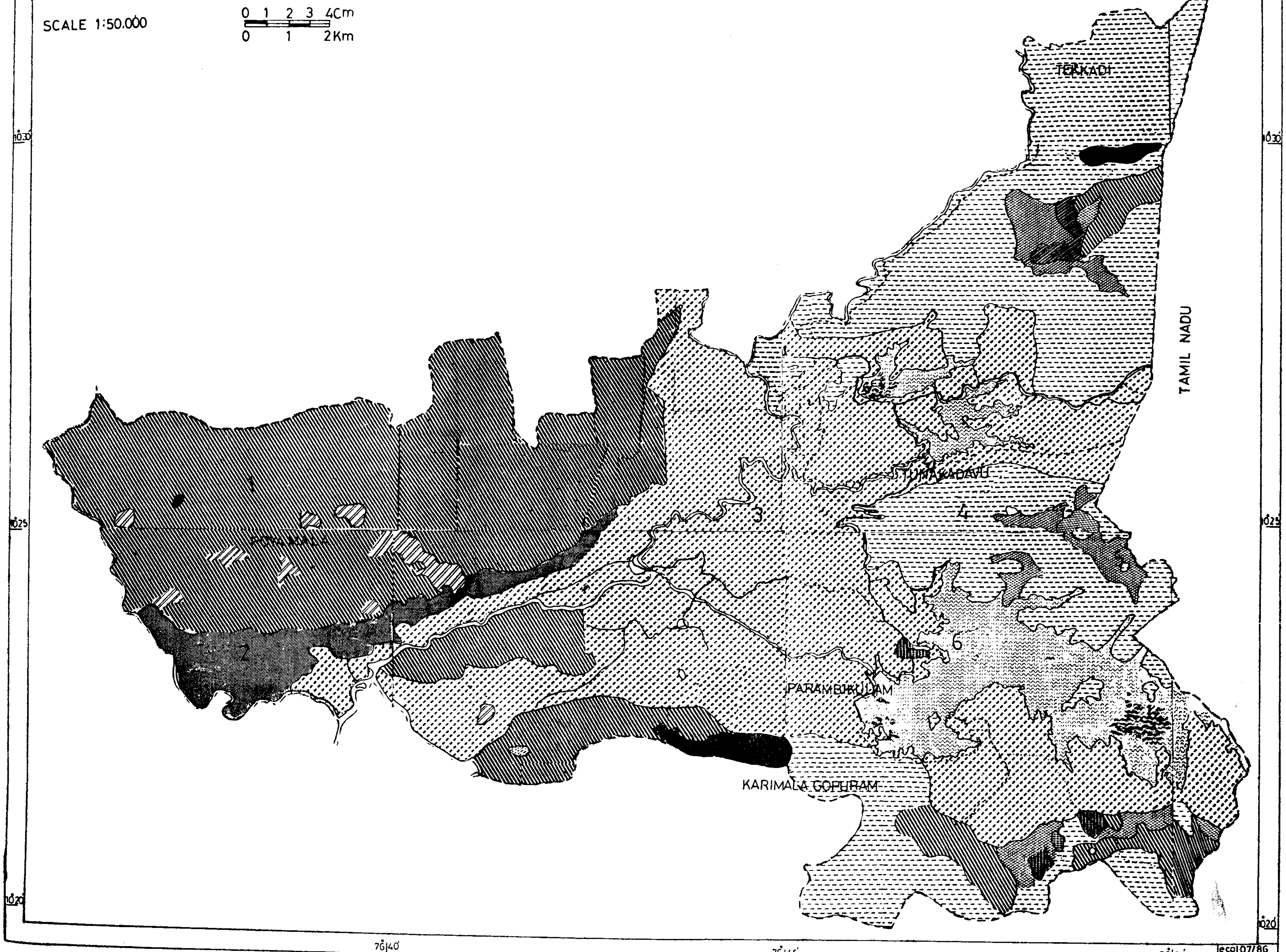
PARAMBIKULAM WILD LIFE SANCTUARY (LOCALITIES)

SCALE 1: 50,000

0 1 2 3 4 Cm
0 1 2 Km



PARAMBIKULAM WILD LIFE SANCTUARY (VEGETATION)



Fig·6·

PARAMBIKULAM WILD LIFE SANCTUARY (Vegetation Density Map)

(Based on 1:50,000 Black & White Aerial Photographs)

SCALE 1:50,000

0 1 2 3 4Cm
0 1 2Km

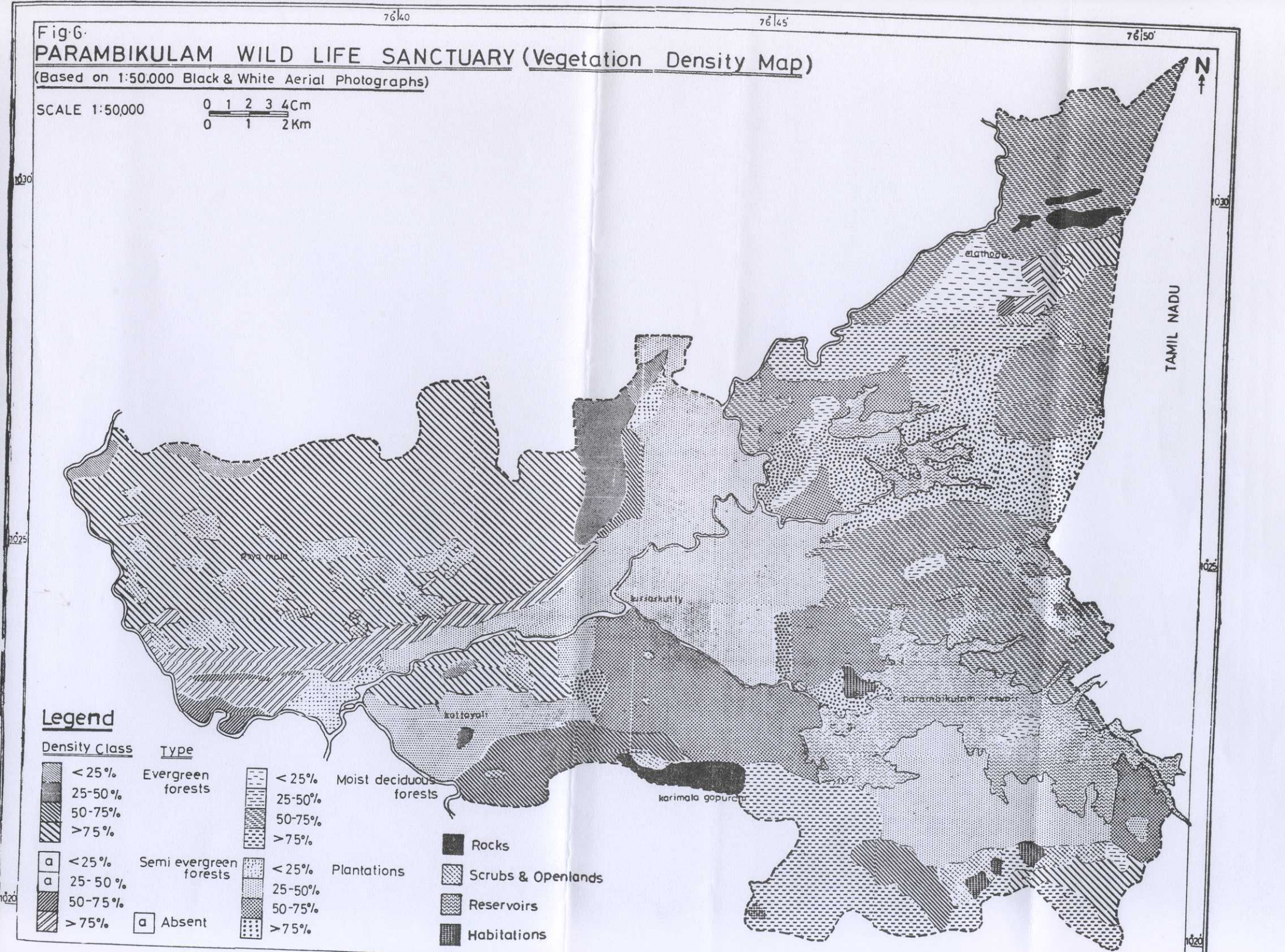


Fig:7 PARAMBIKULAM WILDLIFE SANCTUARY (PLANTATIONS)