

D.K.  
7 Feb 1988

THE PARAMBIKULAM SANCTUARY - A BIRD EYE'S VIEW

1. STATEMENT OF AREA SIGNIFICANTS:

1. The Parambikulam Sanctuary is a representative Unit of the Western Ghats containing within it the tropical rain forests, moist deciduous forests and a variety of peninsular Fauna, many of which are endangered, rare and threatened.
2. Parambikulam valley is the transitional Zone between Anamalai hills in the South and Nelliampathy hills in the North. The interspersions of various habitat types create prominent edges which favour survival of a large number of animals.
3. The valley runs from east to west, opening up migratory routes for animals, from eastern dry areas to the western wet areas and vice-versa and helps in genetic exchange between populations. Substantial areas outside the Sanctuary, especially in the North and North-West are under non conservative land use resulting in degradation of forests. Thus the Sanctuary remains the only place where a high density of animals survive.
4. The Sanctuary supports profusion of many endangered, threatened and more species of Flora and Fauna. Therefore, the Sanctuary forms the catchment of river Chalakkudy which is vital for the land and people of Trichur District of Kerala. Besides the three dams constructed by Tamil Nadu Government receive their water from the same catchment area.
5. For those, who are concerned about the ravages of the forests and wild life resources in the country, this Sanctuary offers more than meets the eye. A fully stocked forests providing rich diversity of Western Ghat habitats gives one hope that after all everything is still not lost. A future lies in the Sanctuary.
6. The cascading water falls in the hills, the dense green forests, the water spread of the three reservoirs and a mixture of hills and valleys of unrivalled beauty presents this Sanctuary as one of the picturesque place in South India. Aesthetically the existence of this Sanctuary conjures up vivid visuals and imaginations.
7. The Sanctuary is unexplored scientifically and holds remarkable research and education possibilities.

2. LOCATION:

It is located in Chittur Taluk of Palghat District in the State of Kerala. It lies between longitudes  $76^{\circ} 35'$  and  $76^{\circ} 50'$  East and latitudes  $10^{\circ} 20'$  and  $10^{\circ} 23'$  North. It falls under Indo-Malayan Bio-Geographic Realm and in part of Western Ghat mountains of Malabar - Western Ghat Biotic province. (5 b, Uvardy 1975)

3. BOUNDARIES:

In the North, Forests of Special Division, Palghat and Nelliampathy reserve of Nemmara Forest Division, in the East Anamalai Sanctuary, in the South part of Anamalai Sanctuary and parts of Sholayar reserve of Vazhachal Division and in the West Karappara river mark the boundaries of the Sanctuary.

4. VEGETATION:

Following forest types are met within the Sanctuary.

- 4(1) 1 A/C 4 West Coast Tropical Evergreen Forests:
- 4(2) 2 A/C 2 West Coast Semi Evergreen Forests
- 4(3) 3 B/C - South Indian Moist Deciduous Forests
- 4(4) 5 A/C 3 - South Indian Dry Deciduous Forests
- 4(5) 2 / E 3 - Southern Moist Bamboo Brakes
- 4(6) 8 A/E 1 - Reed Brakes
- 4(7) Teak Plantation

The artificially re-generated Teak Plantations cover 8732.79 Ha. area of the Sanctuary. They are distributed as follows:-

- 1. Sungam Series Plantations - Area 1967.347 Ha.  
These are the older plantations starting from 1916 onwards.
- 2. Parambikulam Series Plantations - Area 6745.198 Ha.  
(area of the erstwhile Teak plantation division).  
+ 72.110 ha. (transferred from Nemmara Forest division)

These plantations are distributed in three Ranges viz. Parambikulam, Orukomban and Karimel. These Plantations are relatively new and have been raised between 1961 to 1979 - Under Teak Plantation Division.

Management of Plantations:

There was no separate working plan for the Teak Plantation Division and prescriptions contained in the Nemmara working plan were adopted. The rotation is 60 years and thinning cycles are 4, 8, 12, 18, 28 and 40 years, first two being mechanical. Clear felling has been stopped.

5. IMPORTANT ANIMALS:

Owing to diversity of habitats the major Fauna of peninsular India is represented in the Sanctuary.

- 5(1) PRIMATES:- Bonnet Macaque, Nilgiri Langoor, Lion tailed Macaque and Common Langoor, Slow lorics.
- 5(2) CATS:- Tiger, Leopard, Jungle Cat.
- 5(3) CIVETS:- Small Indian Civets, Common Palm Civet.
- 5(4) MANGOOS:
- 5(5) WILD DOGS:
- 5(6) SPOTL BEAR;
- 5(7) INDIAN GIANT SQUIRREL, FLYING SQUIRREL:

5 (8) - INDIAN ELEPHANT.

INDIAN ELEPHANT (8)

INDIAN ELEPHANT (8)

- 5(9) THE GAUR:
- 5(10) NILGIRI TAPE:
- 5(11) CERVINE: Chital, Sambar, Barking deer.
- 5(12) MOUSE DEER:
- 5(13) WILD BEAR:

Besides crocodiles various types of Snakes and about 150 species of birds inhabit the Sanctuary.

6. LEGAL STATUS OF THE SANCTUARY:

The first notification declaring Parambikulam Sanctuary dated back to 24th July 1962. The area notified was only 30 sq. miles in Sungam Range vide Second notification G.O.(P) 89/73/AD dated 12.2.1973. New areas were added and 271 sq. km. of area was declared as Parambikulam Sanctuary. In the meanwhile this area was also referred to as Teak Plantation Division as large scale of teak plantations were raised here from 1960 to 1973. After the reorganisation of a separate Wild Life Wing during 1985 a fresh notification, ie. G.O.(Ms) No. 3/3/84/AD dated 2.11.1984 was issued by the Government of Kerala and abolishing dual administrative control. At present 285 sq.km. is the notified area of this Sanctuary. Within the Sanctuary Parambikulam-Aliyar Project which has made 3 dams and a number of buildings for Government of Tamil Nadu covers about 28 sq.km. area. Besides five tribal settlements of Kadar, Malayars and Muduvass also exist within the Sanctuary. The tribals depend on the Sanctuary for their lively hood.

7. REGIONAL ANALYSIS:

1. TRIBAL SETTLEMENT:

The tribals are located at the following places:

- 1. Parambikulam colony - Kadar Tribal - Population 113
- 2. Muduvass colony - Muduva Tribal - Population 137
- 3. Kuriyathattu colony - Kadar Tribal - Population 234
- 4. Earthannur colony - Kadar Tribal - Population 93
- 5. Sungam colony - Malayars Tribal - Population 203

2. P.A.P. SETTLEMENTS:

The three dams in the Sanctuary have been constructed by Tamil Nadu Government under Parambikulam-Aliyar Project at Peruvarippallam, Thunacadaavu and Parambikulam. The construction of dams have given rise to three reservoirs. The area under reservoirs are as follows:-

Peruvarippallam lake	-	138.604 Ha.
Thunacadaavu	-	185.544 Ha. and
Parambikulam	-	2065.517 Ha.

The construction of the dams started in 1953 and the project was commissioned in 1972. On 29th May 1970 an agreement was executed between the Governments of Tamil Nadu and Kerala authorising Tamil Nadu Government to construct dams and

ancillary structures from retrospective effect i.e.  
9th November 1958. The land was leased out to  
Tamil Nadu Government at the rate of Rs. 2/- acre.  
However the lease rent

etc. had yet not been finalised. The buildings utilised by the Sanctuary management staff have also been constructed by PAP and handed over to the Forest Department.

#### 8. ADMINISTRATION AND ORGANISATION:

There are four Ranges namely Parambikulam, Karimala, Orukomban and Sungam within the control of Wild Life Warden. The Division Head quarters is at Thunacadavu. Every Range is divided into sections for administrative purpose. There are 18 sections headed by Foresters. There are 25 posts of Forester and 51 Guards against which only 23 foresters and 35 guards are working. There are two jeeps and one motor boat for the purpose of patrolling. Since 1985 six places are working as Wireless Stations where 15 watts VHF wireless sets are installed. Besides 9 walkie-talkie of 2 watts out put are also utilized, for mobile parties. The Sanctuary also has a good net work of roads which cover about 175 Km. area in length.

#### 9. PROTECTION ACTIVITY:

Poaching had been one of the serious problems for the management. Since 1985-86 wireless stations were constructed on priority basis and presently following Wireless Stations with 15 watt VHF Wireless sets are functioning at following places:-

1. Nelliampathy.
2. Thekkady.
3. Anappady
4. Thunacadavu.
5. Parambikulam.
6. Orukomban.

By 1988 few more stations will be opened. The Wireless Stations are strategically located so as to cover every nook and corner of the Sanctuary. The wireless communications system has been very effective in checking poaching which can be seen from the fact that no elephant and large animals poaching has taken place since 1986. There is virtual stoppage of poaching of large animals.

Besides protection strategy was devised during 1986-87 to identity vulnerable areas and patrolling these areas at regular basis. The field staff with the help of tribal treckers keep on patrolling these areas.

Fire protection is one of the important activities undertaken in the Sanctuary. Over the last two years no large fires occured in this Sanctuary. Altogether 336.85 Kms. of fire lines are created and maintained every year.

#### 10. EXTERNAL DEVELOPMENTAL THREAT:

1. Proposed Kuriarkutty-Karappara river valley Project:

The Kerala State Electricity Board jointly with Irrigation Department has proposed to construct three large Dams out of which two of the Dams and their reservoirs could be constructed within the Northern half of the

Sanctuary and the third will be located in the  
Periphery, for generation of 82 M power and  
11736 ha. irrigation. The estimated cost of  
the project 1360 lakhs. If the project is sanctioned  
same it would submerge 576.5 ha of Reserve  
forest, 660 ha of vested forest and 392 ha of

Teak Plantation in the Valley.

2. Timber and Bamboo Working:

Regular thinnings and selective removal of Teak trees from final felling areas take place in the Sanctuary. Thinning operation start from August week and the Departmental execution of works continue till February-March. Afterwards the materials are sold in auction and then onwards successful bidders take over. Lorries start plying in and out of the Sanctuary for transporting the thinned materials. This process goes on throughout the year except in mansoons. Suggestions are involved to minimise the disturbants.

Similarly for the past three years extraction of flowered and dried bamboos has been going on. The Agency involved is M/s Hindustan Newsprint Limited. Up till now they have been allotted 21757 MT of bamboos. Roughly six hundred labourers are engaged for this purpose. Approximately 13500 MT of Bamboos are still available and suggestions are solicited for further allotment.

3. Tourism:

Of late tourism is gradually picking up in the Sanctuary. The common tourists is allowed to go upto Parambikulam Dam site and to Kammimara Teak with a guide. However for students, Researchers, Nature Clubs and Wild life enthusiasts a drive from the Thunacadavu to Peruvariappallam via. Thelikkal is permitted. The entry is restricted between 7 A.M to 6 P.M. The number of Tourists visiting the Sanctuary is as follows:-

1982 - 83	Teak selective removal of Teak	5325
1983 - 84	Teak selective removal of Teak	6707
1984 - 85	Teak selective removal of Teak	15309
1985 - 86	Teak selective removal of Teak	15264
1986 - 87	Teak selective removal of Teak	15192
1987 till Jan. 1988	Teak selective removal of Teak	13808

However there are no facilities for Tourists to stay in the Sanctuary. The Inspection Bungalow and the Tree Top Hut are made available when free.

11. SPECIFIC AREA OBJECTIVES:

1. To conserve the ecological integrity of the area and protect it from further degradation.
2. To protect, rehabilitate and maintain a viable population of endemic, endangered and rare faunal and floral elements of the area.
3. To encourage use of the Sanctuary for the scientific and educational purposes.
4. To promote conservation consciousness among people by ensuring nature education oriental tourism.

12. HABITAT AND ANIMAL DISTRIBUTION

Vegetation analysis was conducted and following habitat Units have been identified in the Sanctuary.

1. Hill Forests covering evergreen and semi evergreen areas on the higher regions.
2. Low line deciduous forests.
3. Plantations.
4. Vayals (Marsh Land) and Gracy lands.
5. Rocky areas and Mountain grass lands.
6. Riverine and reservoir banks.

Habitats were evaluated by using Pellet/dung index count. It was seen that Vayals, Plantations and Low line deciduous Forests are utilised highly by the larger animals. The evergreen forests are highly important for arboreal animals.

The transect line method of King & Census was also tried to calculate the population estimates. The entire Sanctuary was stratified into hill forest and Valley Plantations. The data are appended in the tables attached.

12. HABITAT AND ANIMAL DISTRIBUTION

Vegetation analysis was conducted and following habitat Units have been identified in the Sanctuary.

1. Hill Forests covering evergreen and semi evergreen areas on the higher regions.
2. Low line deciduous forests.
3. Plantations.
4. Vayals (Marsh Land) and Gracy lands.
5. Rocky areas and Mountain grass lands.
6. Riverine and reservoir banks.

Habitats were evaluated by using Pellet/dung index count. It was seen that Vayals, Plantations and Low line deciduous Forests are utilised highly by the larger animals. The evergreen forests are highly important for arboreal animals.

The transect line method of King & Census was also tried to calculate the population estimates. The entire Sanctuary was stratified into hill forest and Valley Plantations. The data are appended in the tables attached.

RELATIVE ABUNDANCE OF ANIMALS IN DIFFERENT PLANT COMMUNITIES (MIRIDIDS) BASED ON PELLET/DUNG COUNT

1. Number of transect lines in each forest type	2. Number of points in each forest type	3. Area sampled in each forest type	4. S1. Vegetation type	5. Point of occurrence in field evidence	6. Total number of groups of evidence recorded	7. Percentage of occurrence	8. Relative abundance	9. Pellet/Dung/m <sup>2</sup>	10. Relative abundance (10000)
1. EVERGREEN FORESTS	7	18			14	8.33	.0076	4.24	
2. SEMI EVERGREEN FORESTS	15	45			30	17.85	.0080	10.61	
3. MOIST DECIDUOUS FORESTS	10	32			20	11.90	.0064	7.54	
4. DRY DECIDUOUS FORESTS	2	5			4	2.38	.001	1.17	
5. PLANTATIONS	11	76			22	13.09	.0152	17.92	
6. VALELS/BLANKS	39	248			78	43.42	.0496	58.49	

=====

TABLE 6

CENSUS FIGURES 1983 - 84

PARAMBIKULAM WILDLIFE SANCTUARY

<u>Sl.No.</u>	<u>Species</u>	<u>Nos.</u>
1.	Elephants	114
2.	Gaur	303
3.	Sambhar	119
4.	Barking Deer	7
5.	Chital	70
6.	Nilgiri Langur	114
7.	Lion Tailed Macaque	18
8.	Sloth bear	11
9.	Small Indian Civet	8
10.	Dhole	30
11.	Wild Boar	176
12.	Nilgiri Tahr	18

TABLE - 11

DENSITY OF ANIMAL SIGHTED

Name of Species	CLASSIFICATION			To- J tal No.	OCCURANCE										
	A No.	S No.	J No.		f	r (Mt)	L	N 2r x L D							
<u>PLANTATION</u>															
Mouse Deer	1	-	-	1	1/11	9.09	9.40	46741.55 or mts. 4674 Km.	1.18/ Km <sup>2</sup>						
Sambar	4	11	7	1	1	1	1	2	27	9/11	81.81	47.89	"	"	
Spotted Deer	2	2	-	-	-	-	-	-	4	1/11	9.09	16.67	"	2.52/"	
Gaur	26	15	26	4	18	3	-	8	100	9/11	81.81	73.63	"	14.53/"	
B. Deer	1	-	-	-	-	-	-	-	1	1/11	9.09	43.94	"	.24/"	
Spoth Bear	1	-	-	-	-	-	-	-	1	1/11	9.09	165.93	"	.07/"	
M. Squirrel	-	-	3	-	-	-	-	-	3	2/11	18.18	16.44	"	1.95/"	
N. Langur	1	2	7	-	-	2	-	-	1	11	2/11	18.18	25.06	"	4.67/"
Boar	3	4	-	-	-	12	-	-	2	21	2/11	18.18	50.46	"	4.45/"
Bonnet	-	-	12	-	-	-	-	-	12	1/11	9.09	26.48	"	4.85	

TABLE - 12

NATURAL FORESTS

Name of Species	CLASSIFICATION			To- J tal No.	OCCURANCE									
	A No.	S No.	J No.		f	r	L	D						
M. Squirrel	2	5	3	-	-	-	-	10	5/9	55.5	43.91	33190.55	3.	/
N. Langur	8	17	14	-	-	1	-	4	44	6/9	66.6	47.09	"	14.
Bonnet	-	3	26	-	-	5	-	7	41	5/9	55.5	38.8	"	15.
Lion tailed	-	-	8	-	-	2	-	1	21	2/9	22.2	74.19	"	2.23
Gaur	5	6	4	-	3	2	-	1	21	3/9	33.3	32.36	"	12.5
Sambar	1	4	2	-	-	-	-	-	7	2/9	22.2	26.81	"	3.9
B. Deer	1	1	-	-	-	1	-	-	2	2/9	22.2	44.93	"	1.00

TABLE-13

DISTRIBUTION OF DENSITIES IN THE SANCTUARY FOR

INDIVIDUAL ANIMALS

Animal	Valley plant- ation per Km <sup>2</sup>	Hill fore- sts per Km <sup>2</sup>	Average for the Sanctu- ary per Km <sup>2</sup>	Approximate number of ani- mals if values are extrapolated for the entire sanctuary Area: 250 Km <sup>2</sup>	Remarks
Gaur	14.53	12.56	13.54	3385	Area excluded are reservoirs tribals and settlements.
Sambar	6.03	3.93	4.98	1245	Correction fac- res can not be found out.
Chital	2.52	-	1.26	315	
Muntjac	0.24	1.006	0.623	156	
Sloth Bear	0.07	-	0.035	9	Variation not calculated.
Wild Boar	4.45	-	2.23	557	
Malabar Giant Squirrel	1.95	3.43	2.69	672	
Nilgiri Langur	4.67	14.07	9.37	2342	
Bonnet Macaque	4.85	15.95	10.4	2600	
Lion tailed Macaque	-	2.23	1.12	280	
Mouse Deer	1.13	-	0.62	155	
Nilgiri Tahr	-	-	-	44	All State cens of 1986.
Elephant	-	-	-	-	Not recorded
Tiger	-	-	-	-	Not recorded
Leopard	-	-	-	-	Not recorded
Wild Dog	-	-	-	-	Not seen